

**Ministry of Food, Agriculture and Light Industry  
Ministry of Economy and Development  
Mongolia**

**THE PROJECT FOR FORMULATION OF  
MASTER PLAN ON  
THE AGRICULTURAL VALUE CHAIN IN  
MONGOLIA  
(MONMAP-AVC)**

**MASTER PLAN**

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**JAPAN INTERNATIONAL COOPERATION AGENCY**

**NTC INTERNATIONAL CO., LTD.**

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# THE PROJECT FOR FORMULATION OF MASTER PLAN ON THE AGRICULTURAL VALUE CHAIN IN MONGOLIA

## Summary of Master Plan

### 1. Master Plan for Agro-Pastoral Value Chain Development

#### 1.1 Background and Objectives of Master Plan Preparation

The agro-pastoral industry in Mongolia is the country's key industry, accounting for about 12.8% of GDP (in 2022), second only to the mining industry, with about 30% of the working population engaged in this industry. In the manufacturing industry, the food and textile processing sectors accounted for approximately 22% of the total manufacturing industry sales in 2022. In recent years, Mongolia has aimed to move away from an economic base dependent on mineral resources. The agro-pastoral industry has attracted attention as a sector that will play a major role in the country's industrial diversification. However, in the livestock sector, the concentration of livestock in peri-urban areas, overgrazing due to an increase in the number of animals, grassland degradation, damage from snow (Dzud), and inadequate measures against infectious diseases such as foot-and-mouth disease have been pointed out as problems. In the agricultural sector, national policies have led to an increase in the planted area and subsequent harvests, and the domestic self-sufficiency rate is improving; however, a stable production/supply system for the cold season has not been fully developed. In processing and distribution, low levels of processing technology, inadequate logistics networks, including cold chains, and a lack of quality and sanitation management that meet international standards are obstacles, and the sector is not yet sufficiently competitive. Therefore, the Ministry of Food, Agriculture, and Light Industry (MOFALI) and the Ministry of Economic Development (MED) in collaboration, have developed a strategic agro-pastoral value chain plan that considers regional characteristics. The Japanese government was requested to cooperate in formulating a Master Plan for the strategic promotion of the agro-pastoral value chain (VC).

#### 1.2 Positioning of the Master Plan

This Master Plan is related to "Vision 2050", a long-term development plan of Mongolia, and "Five-Year Basic Development Policy" and "Government Action Plan", which are medium-term development plans. Therefore, while referring to "Vision 2050" as a long-term development perspective for the agro-pastoral sector, the policies and contents of the plan will be reflected in the "Five-Year Basic Development Policy" and "Government Action Plan" in the medium-term.

#### 1.3 Target Areas and Target Year

This Master Plan is applicable to all of Mongolia. The target period is 10 years, from 2025 to 2034..

# 2. Development Strategy of the Mongolian Agro-pastoral Industry

## 2.1 Mongolian Agro-pastoral Industry Development to Date

### (1) Comparison with Other Countries

Figure 2.1 shows the average growth rate of the agricultural GDP in Mongolia and other countries over the past 10 years (2012-2021). The average agricultural GDP growth rate was relatively high at 4.25% despite the overall downturn in the Mongolian economy due to falling mineral prices and the impact of COVID-19. This is higher than the world average of 3.54% and almost equal to that of East Asia and the Pacific region, where growth in the agricultural sector has been particularly remarkable. The economies of countries such as India and China, where the agricultural sector is growing at a rapid pace, are at a different scale from that of Mongolia, with the absolute value of their agricultural GDP being an order of magnitude higher. However, the fact that Mongolia has achieved the current level of agricultural GDP growth, given that the natural environment is not necessarily favorable for the agro-pastoral industry, is the result of efforts and contributions of the Mongolian government and those involved in the agro-pastoral industry.

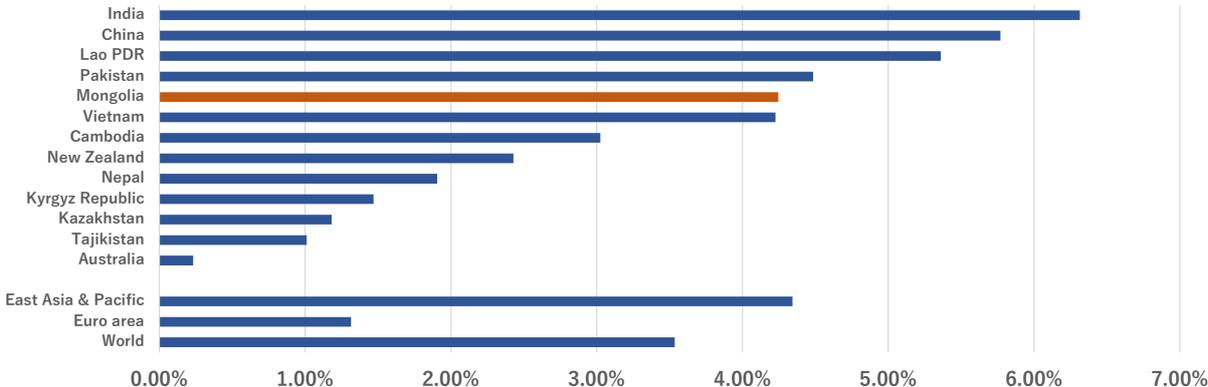
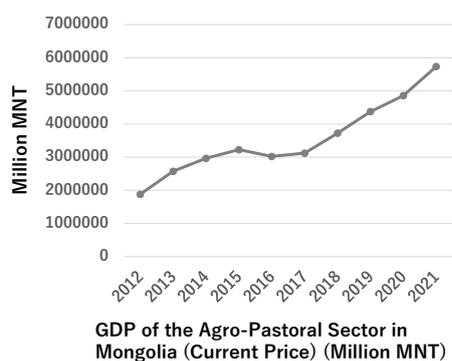


Figure 2.1 Average agricultural GDP growth across countries (2012-2021)

Source: JICA project team based on Worldbank database

### (2) Background of Agricultural and Pastoral Development

How did the Mongolian agro-pastoral industry achieve such rapid development? In this section, we conducted a regression analysis of agricultural GDP trends over the past ten years using other agriculture-related statistical data. We summarize the relationship between the relevant statistical data and agricultural GDP trends in Figure 2.2. The agricultural GDP, which is the dependent variable, has been growing steadily as a whole, although there was a period of stagnation due to the overall stagnation of the Mongolian economy caused by a decline in mineral prices from 2016 to 2017. The independent variables are broadly categorized into 1) market, 2) production scale, 3) productivity, and 4) value. Statistical data appropriate for each category were applied to the analysis.



- Regression analysis was conducted using Microsoft Excel.
  - Original data from <https://www.1212.mn/mn> and UN Comtrade.
  - \*5% level of significance
  - \*\*1% level of significance
- ※Average transaction unit price is calculated by dividing the total volume of exports by the total value of exports of the relevant commodity from 2012 to 2021. The average unit price was classified as follows.  
 High Unit Price: Average unit price > 100USD/unit  
 Medium Unit Price: 100USD/unit > average unit price > 10USD/unit  
 Low Unit Price: Average transaction price <10 USD/unit

Category	Indicator	R <sup>2</sup>	Significance
Market scale	Population (Person)	0.8684	**
Market scale	Total Export Value of Agro-pastoral products (USD)	0.6902	**
Production scale	Agriculture - Total Sown area (ha)	0.8685	*
Production scale	Agriculture - Wheat Sown area (ha)	0.5612	*
Production scale	Agriculture - Barley Sown area (ha)	0.2458	
Production scale	Agriculture - Potato Sown area (ha)	0.3573	
Production scale	Agriculture - Cabbage Sown area (ha)	0.1032	
Production scale	Agriculture - Onion Sown area (ha)	0.5951	**
Production scale	Agriculture - Cucumber Sown area (ha)	0.5450	*
Production scale	Livestock - Total number of Livestock (1,000 heads)	0.6201	**
Production scale	Livestock - Total number of Cattle (1,000 heads)	0.7893	**
Production scale	Livestock - Total number of Horse (1,000 heads)	0.7325	**
Production scale	Livestock - Total number of Sheep (1,000 heads)	0.6260	**
Production scale	Livestock - Total number of Goat (1,000 heads)	0.5432	*
Productivity	Agriculture - Yield of Cereals (t/ha)	0.0059	
Productivity	Agriculture - Yield of Potatoes (t/ha)	0.1568	
Productivity	Agriculture - Yield of Vegetables (t/ha)	0.0409	
Productivity	Agriculture - Yield of Fodder Crops (t/ha)	0.0273	
Productivity	Livestock - Meat productivity (t/1,000 heads)	0.3815	
Productivity	Livestock - Wool productivity (t/1,000 heads)	0.5610	*
Productivity	Livestock - Cashmere productivity (t/1,000 heads)	0.2622	
Productivity	Livestock - Hides productivity (t/1,000 heads)	0.3718	
Value	Total Export Volume of Commodities with High Unit Price*	0.1622	
Value	Total Export Volume of Commodities with Medium Unit Price*	0.5900	*
Value	Total Export Volume of Commodities with Low Unit Price*	0.8429	**

Figure 2.2 Regression analysis of Mongolian agricultural GDP

Source: JICA Project Team

The results of the regression analysis for each category are presented below.

Table 2.1 Results of regression analysis

Category	Results
Market	<ul style="list-style-type: none"> <li>• For the market component, we used the Mongolian population as an indicator of the size of the domestic market</li> <li>• For the foreign market, we used the total value of exports of agro-pastoral-related products.</li> <li>• The results of the analysis show that both indicators are significantly related to the agricultural GDP. In fact, the population and total exports of agro-pastoral products tend to increase annually, indicating that increasing market demand may be a strong driver of agricultural GDP.</li> </ul>
Production Scale	<ul style="list-style-type: none"> <li>• For indicators related to the scale of production, the planted area of agricultural crops and number of livestock were used in the analysis.</li> <li>• In the agricultural sector, the total crop planted area and wheat, onion, and cucumber planted areas showed significant relationships with agricultural GDP. In livestock production, all indicators, such as the total number of livestock and the number of cattle, horses, sheep, and goats, were significantly related to agricultural GDP.</li> <li>• The scale of agricultural production also tends to expand in response to the strong leadership of the Mongolian government and its agricultural policies, such as the first to third reconstruction plans that have been implemented; it can be inferred that these factors have contributed to the increase in agricultural GDP.</li> </ul>
Productivity	<ul style="list-style-type: none"> <li>• For productivity-related indicators, crop yields were applied for agriculture. For livestock, the production of meat, wool, cashmere, and leather from livestock was divided by the number of heads of livestock to calculate the productivity of the relevant product per head of livestock.</li> <li>• The results of the analysis show that very few indicators, either agricultural or livestock, have a significant relationship with agricultural GDP. This suggests that productivity was not a driver of agricultural GDP, at least in the decade 2012-2021.</li> </ul>
Value	<ul style="list-style-type: none"> <li>• With respect to value, the average transaction price, obtained by dividing the total export value by total export volume for each agricultural and livestock product, was used to classify each item into a high price range (over 100 USD/kg), a medium price range (over 10 USD/kg and under 100 USD/kg), and a low price range (under 10 USD/kg), and the relationship between the total export volume for each category and agricultural GDP was analyzed.</li> <li>• The results showed no significant relationship between agricultural GDP and the volume of exports of high-price commodity groups, but a significant relationship with the volume of exports of medium- and low-price commodity groups. This suggests that the increase in exports of medium- and low-price commodities may contribute to growth in agricultural GDP.</li> </ul>

Source: JICA Project Team

In summary, the following points can be made:

- The factors driving Mongolia's agricultural GDP over the past decade (2012-2021) have been the expansion of the market size, production scale, and increased exports of medium- and low-priced commodity groups. In other words, the agro-pastoral sector has grown by increasing the scale of agricultural and livestock production to meet growing domestic and international market demand. In addition, the export volume has increased by adapting to the demand for raw materials and semi-processed products with a low degree of processing, from neighboring countries including China.
- However, productivity in both agriculture and livestock production has not improved sufficiently to drive agricultural GDP. Exports of high value-added finished products have also failed to boost agricultural GDP, even though production infrastructure has been steadily improving.

## 2.2 Future Development of the Agro-pastoral Sector

As noted above, the growth of the agro-pastoral sector over the past decade has been essentially driven by the expansion of production scale, besides the market. This does not mean that efforts to increase productivity and add value have not been made in the past; however, unlike the expansion of the production scale, efforts to increase productivity and add value take time to produce results. In this respect, it can be said that the future growth potential for productivity improvement and value-addition is large. However, in addition to these, the most important question is how should the agro-pastoral industry be developed by 2034, the final year of this Master Plan, considering various factors such as population growth in Mongolia, changes in international markets, pastureland degradation due to overgrazing, and climate change. The following section, divided broadly into the agricultural and livestock sectors, presents the future of the agro-pastoral sector.

### (1) Agriculture Sector

The first point with regard to the development of Mongolia's agricultural sector, is the establishment of a production and supply system that ensures national food security. Table 2.2 shows the average annual per capita consumption of the major agricultural products. According to this table, there has been no significant change in the consumption of any of the products over the past five years. Therefore, we estimated the supply of each commodity required by the Mongolian population in 2034, from the average annual per capita consumption. Based on these estimates, one of the issues to be addressed is how much of each item can be supplied by Mongolia.

Table 2.2 Annual consumption of major agricultural products

Item	2017	2018	2019	2020	2021		2034	
Population	3,096,030	3,163,991	3,232,430	3,294,335	3,347,783		3,887,004	
Annual wheat consumption (kg/person)	83.85	83.25	81.67	81.59	81.88		82.4	Annual requirement 320,476 t
Annual potato consumption (kg/person)	35.95	35.68	35.02	34.97	35.10		35.3	Annual requirement 137,382 t
Annual vegetable consumption (kg/person)	77.87	77.31	75.86	75.77	76.05		76.6	Annual requirement 297,631 t
Annual fruit consumption (kg/person)	59.92	59.45	58.35	58.28	58.49		58.9	Annual requirement 228,929 t
Annual vegetable	6.88	6.83	6.71	6.71	6.72		6.8	Annual

Item	2017	2018	2019	2020	2021	2034
oil consumption (kg/person)						requirement 26,314 t

Source: Prepared by the JICA project team, based on data from the Mongolian Bureau of Statistics.

Wheat and potatoes have already achieved 100% self-sufficiency. Even with the current production scale and yield, the population is expected to maintain 100% self-sufficiency up to 2034 (Figure 3.3). The National Diet Decision No. 36 states that 100,000 tons of wheat and 55,000 tons of potatoes are to be stockpiled each year; even with this consideration, the required supply can be seen as numerically achievable. However, the area planted and the yields of wheat and potatoes fluctuate widely. In particular, yields have fluctuated widely over the past 10 years, ranging from 0.56 to 1.68 tons/ha for wheat and 8.04 to 14.62 tons/ha for potatoes. As wheat and potato cultivation are almost entirely dependent on rainwater, the cultivation environment is prone to both good and bad harvests; this may pose a more significant problem owing to climate change. In light of the above, the following measures are suggested to enhance the stability of wheat and potato production: 1) development of water resources and irrigation, 2) timely planting and harvesting through agricultural mechanization, and 3) improvement of soil fertility, including fertilizer application technology.

However, the current self-sufficiency rates for vegetables, fruits, and vegetable oil are low at 57%, 1%, and 18%, respectively, and these rates need to be improved. Productivity is lower than in other countries because the climate is not necessarily suitable for agriculture; however, it will be necessary not only to expand the scale of production but also to strengthen efforts to improve yields. For example, in a vegetable pilot project conducted by MONMAP-AVC, the introduction of superior varieties and appropriate cultivation techniques increased the yields of cucumbers and tomatoes by approximately 30% compared with conventional cultivation methods. The same is true for fruit trees, where the productivity per unit area can be increased by selecting and cultivating varieties that are more suited to the climate. Productivity of oilseed rape can be improved by introducing and propagating appropriate cultivation techniques.

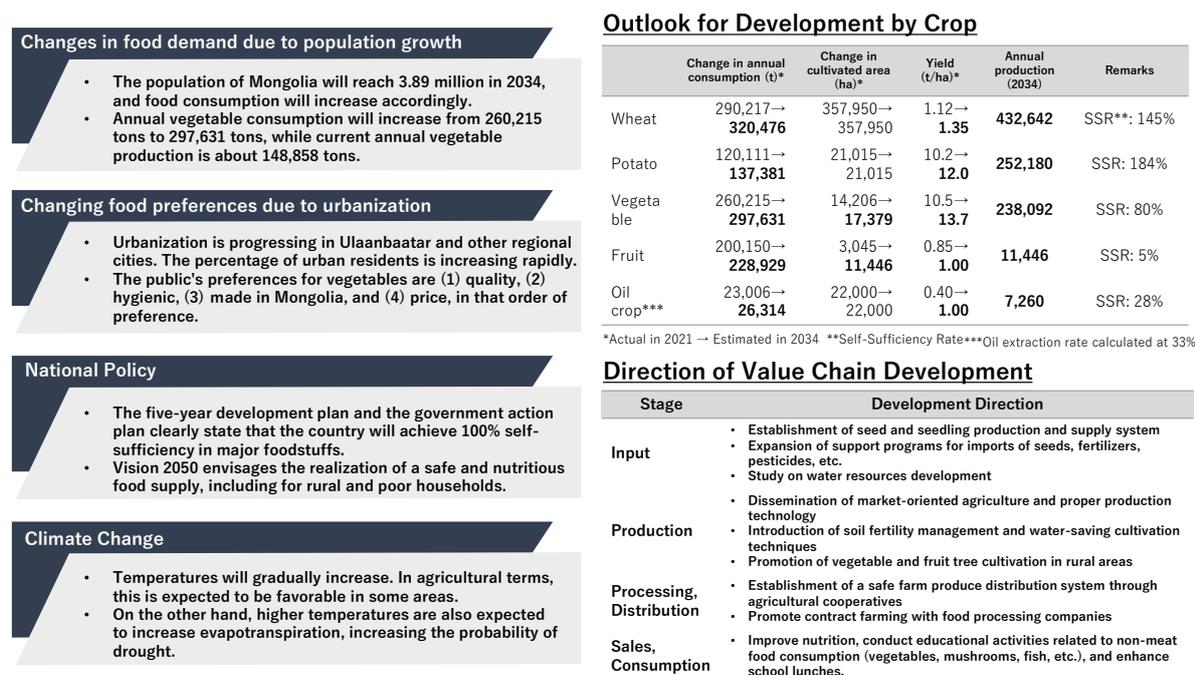


Figure 2.3 Development directions for the agricultural sector

Source: JICA Project Team

The previous section presented the state of the agricultural sector, mainly from the perspective of food security, but the viewpoint of building a value chain to supply agricultural products that meet market needs is also an important issue. In Mongolia, the urban population is increasing every year, and people's interest in food is not only focused on price, but also on quality, hygiene, and production areas. It is also necessary to establish safe and nutritious food supply systems for rural and poor households.

**(2) Livestock Sector**

Unlike the agricultural sector, the main issue with the livestock sector is adding value to Mongolia's abundant raw materials for domestic consumption and exports. In terms of export expansion, besides the major market of China, Mongolia is also expected to expand exports to Southeast Asia and the Middle East, where the market size is expected to grow in the future. In addition to the general demand for safety, quality, price, and functionality of food and light industrial products, international market trends show an increasing demand for products that are more sustainable, environmentally friendly, and animal welfare-friendly. However, the number of livestock in Mongolia is increasing annually, and overgrazing continues to make it impossible to ensure the sustainability of pasture land. In addition to the recent introduction of a tax on livestock, it is necessary to promote the export of lamb and the effective use of old, low-productivity livestock, such as in pet food, to control the increasing number of livestock. These measures are also consistent with measures to address climate change; efforts related to controlling the number of livestock must be prioritized, given the high probability of droughts and Dzud in future. Figure 3.4 shows the direction of the value chain development for the livestock sector. Of particular importance is the need to improve the quality of raw materials, which is a major cause of value decline, and requires the development of a raw material production and distribution system.

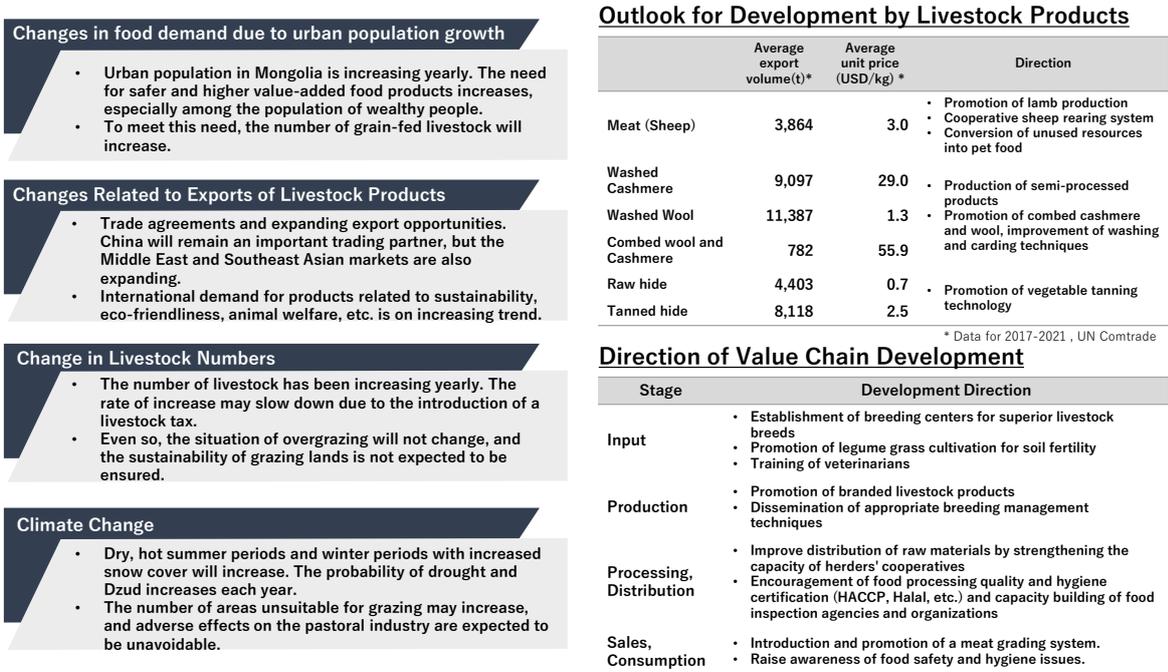


Figure 2.4 Development directions for the livestock sector

Source: JICA Project Team

As previously mentioned, the growth of the agro-pastoral sector over the past decade, with the exception of the market, has basically been driven by the expansion of the scale of production. The most important question is how the agro-pastoral sector should be developed by 2034, the final year of the Master Plan, taking into account various factors such as population growth in Mongolia, changes in international markets, pasture degradation due to overgrazing, and climate change, in addition to productivity improvement and value addition, which will be challenges in the future. The most important question is how the agro-pastoral sector should be developed by 2034, the final year of the Master Plan. In the following sections, the future of the agro-pastoral sector is presented separately for the agricultural sector and the livestock sector.

## 2.3 Basic Development Concept

The Mongolian agro-pastoral industry underwent a major transformation after the 1992 constitutional amendment, including the transition to a market economy. Negdels, state farms, and state-owned enterprises established under socialism were dismantled, and the assets and livestock held by these enterprises were distributed among their members, and privatized. With the rapid transition to a market economy, arable agriculture declined dramatically, while the number of livestock continued to increase. In the pastoral sector, cashmere, a globally prized luxury material, has become one of Mongolia's major exports and is growing to a point where it has a significant impact on the balance of trade.

However, many issues need to be addressed to realize the long-term vision of development. In the agricultural sector, the country remains highly dependent on vegetable and fruit imports; in addition to expanding the scale of production, there is a need to improve the system for shipping agricultural products during the off-season by promoting crop storage facilities and greenhouse cultivation. In the livestock sector, an explosive increase in the number of livestock has led to severe grassland degradation. Quarantine systems, including those for foot-and-mouth disease, have not been sufficiently developed, which is a major impediment to meat export. In addition, the domestic processing rates of wool, cashmere, and leather are low despite the abundant supply of raw materials, and value-addition is not well implemented in Mongolia. The common denominator is the lack of competitiveness in the target markets for each commodity, due to weak production and shipping systems.

To strengthen the competitiveness of Mongolian agro-pastoral products, it is necessary for both the public and private sectors to continue to pay close attention to market needs. The activities to be undertaken over the 10-year period from 2025 to 2034, are to develop products based on market needs; to establish and strengthen VC linking production, distribution, processing, and sales for stable supply, while taking advantage of the strengths of the Mongolian agro-pastoral industry and to enhance the market competitiveness and external credibility of Mongolian agro-pastoral products in target markets. Based on the above analysis of the current situation, the JICA project team proposes a development strategy for the agro-pastoral industry using the basic developmental concept: **"Realization of a strong Mongolian agro-pastoral industry through strengthening the market competitiveness of agro-pastoral products"**.

## 2.4 Basic Policies for Agro-pastoral Value Chain Development

Many issues need to be addressed to **"realize a strong Mongolian agro-pastoral industry through**

**strengthening the market competitiveness of agro-pastoral products”**. The following four development policies are presented as priority issues that must be addressed during the 10-year period of the Master Plan:

1. Establishing production and distribution foundations for stable supply of high value-added agricultural and pastoral products.
2. Strengthening quality and hygiene management systems and capacity of relevant administrative agencies to promote the export of agro-pastoral products.
3. Support for agro-pastoral enterprises and cooperatives, and the promotion of human resource development to revitalize the agro-pastoral industry.
4. Promoting distinctive regional agro-pastoral industries and forming agro-pastoral industry clusters.

#### **2.4.1 Policy 1: Establishing production and distribution foundations for stable supply of high value-added agricultural and pastoral products**

In the development of the agro-pastoral sector over the next 10 years, it is necessary to focus not only on the scale of production but also on efforts toward a stable supply of high value-added agro-pastoral products, including improvements in quality and hygiene. Table 2.3 and Table 2.4 show the development policies necessary to promote the establishment of supply chains for a stable supply of high value-added products in the agriculture and livestock sectors, respectively. The target commodities are selected from the major agro-pastoral products in Mongolia, and the concept of supply chain improvement can be applied to other commodities not listed in the tables below.

Table 2.3 Agricultural sector development policies

Stage	Target product	No.	Development Policies
Input	<ul style="list-style-type: none"> <li>• Vegetables</li> <li>• Fruit trees (sea buckthorn)</li> <li>• Wheat, oilseed rape</li> <li>• Mushrooms</li> </ul>	1-1-1	Strengthening the seed production system for grain and oil crops
		1-1-2	Promotion of superior seeds and varieties
		1-1-3	Training of seed producers
		1-1-4	Promotion of water resources development/irrigation development
		1-1-5	Agricultural mechanization promotion
		1-1-6	Expansion of greenhouse facility development
Production		1-1-7	Dissemination of proper cultivation techniques
		1-1-8	Diffusion of market-oriented agriculture to small-scale farmers
		1-1-9	Promotion of forcing cultivation technology
Distribution and Processing		1-1-10	Establishment of agricultural product distribution (storage) system by agricultural cooperatives
		1-1-11	Promotion of contract cultivation with food processing companies
		1-1-12	Dissemination of simple food processing techniques to small-scale farmers
Sales and Consumption		1-1-13	Conducting educational activities related to nutrition, food safety, etc.
		1-1-14	Promotion of industrial cluster development

Source: JICA Project Team

Table 2.4 Livestock sector development policies

Stage	Target product	No.	Development Policies
Input	<ul style="list-style-type: none"> <li>• Meat</li> <li>• Dairy products</li> <li>• Wool</li> <li>• Cashmere</li> <li>• Leather</li> <li>• Honey</li> <li>• Fish</li> </ul>	1-2-1	Development of supply hubs for superior breeds of livestock
		1-2-2	Training of veterinarians (including private veterinarians) and livestock technicians
Production		1-2-3	Promotion of the young fattening technique
		1-2-4	Introduction of animal hair harvesting equipment and technical training
		1-2-5	Dissemination of proper breeding techniques
Distribution and Processing		1-2-6	Promotion of slaughterhouse development
		1-2-7	Fostering the pet food industry using livestock by-products
		1-2-8	Establishment of a collection and shipping system for raw wool, raw

Stage	Target product	No.	Development Policies
			hides, and raw milk operated by herders' cooperatives
		1-2-9	Development of industrial human resources (meat processing, textiles, leather)
		1-2-10	Introduction of environmentally friendly textile and leather product technologies
		1-2-11	Promotion of the use of the traceability system
Sales and Consumption		1-2-11	Introduction of grading system for livestock products such as meat and branding promotion
		1-2-12	Promotion of cooperation with the tourism industry
		1-2-13	Promotion of industrial cluster development

Source: JICA Project Team

#### **2.4.2 Policy 2: Strengthening quality and hygiene management systems and capacity of relevant administrative agencies to promote the export of agro-pastoral products.**

The future growth of the agro-pastoral sector in Mongolia depends largely on the expansion of agro-pastoral exports. Weak quality and hygiene management systems for food products, including meat, are the main bottlenecks in agro-pastoral exports. To promote the export of agricultural and pastoral products, it is essential to strengthen the trade negotiation capacity of government agencies and simplify export procedures (including animal and plant quarantine). Based on these considerations, Table 2.5 presents the development policies for strengthening the quality and hygiene management system and the capacity of relevant government agencies.

Table 2.5 Development policies for quality and hygiene management

Field	No.	Development Policies
2-1. Strengthening quality and hygiene management system	2-1-1	Improving Food Safety Management Systems
	2-1-2	Strengthening the capacity of food and product inspection (quarantine) agencies
	2-1-3	Training of quality and hygiene management human resources in the private sector
	2-1-4	Promotion of acquisition of international certification for quality and hygiene management
2-2. Export promotion	2-2-1	Simplifying and streamlining export procedures for agro-pastoral products
	2-2-2	Strengthening trade negotiation capabilities
	2-2-3	Promotion of participation in international exhibitions, etc.

Source: JICA Project Team

#### **2.4.3 Policy 3: Support for agro-pastoral enterprises and cooperatives, and the promotion of human resource development to revitalize the agro-pastoral industry.**

To establish a system for manufacturing, packaging, and shipping products, appealing to market needs, reasonable amounts of capital investment and working capital are required. In many cases, the collateral required for borrowing and high interest rates make access to financing difficult, especially for small and medium-sized enterprises, individual farmers, and herders. Efforts are needed to develop new financing mechanisms, such as value chain financing and warehouse receipt systems. Another measure is strengthening the governance of small and medium-sized enterprises and agro-pastoral cooperatives making it easier for them to obtain loans. Additionally, it is necessary to improve the business environment by revising laws and regulations necessary to revitalize the agro-pastoral industry. Table 2.6 shows the development policies for promoting support and institutional improvements for agro-pastoral enterprises and organizations.

Table 2.6 Development policies for agro-pastoral enterprises and organizations

Field	No.	Development Policies
3-1. Financial assistance	3-1-1	Introduction trial for the value chain financing system
	3-1-2	Introduction trial for the warehouse receipt system
3-2. Strengthening the governance of enterprises and cooperatives	3-2-1	Strengthening the financial management capacity of the private sector
	3-2-2	Strengthening the organizational structure and financial management capacity of agro-pastoral cooperatives
3-3. Revision of laws and regulations to revitalize the agro-pastoral industry	3-3-1	Revision of laws and regulations related to the agriculture sector - Tax Exemption for agricultural cooperative - Duty exemption for imports of agricultural inputs (seeds, fertilizers, pesticides) - Introduction of a subsidy system for promoting contract agriculture
	3-3-2	Revision of laws and regulations related to the livestock sector - Tax exemption for livestock cooperatives - Introduction of a subsidy system for promoting contractual transactions - Introduction of subsidies for obtaining international certification

Source: JICA Project Team

#### 2.4.4 Policy 4: Promotion of distinctive regional agro-pastoral industries and formation of agro-pastoral industry clusters

Revitalization and economic development of the agro-pastoral industry in rural areas are important for dispersing the current concentration of the population in Ulaanbaatar. We also propose the formation of industrial clusters as a foundation for promoting competitive product manufacturing, by strengthening the network of companies handling regionally superior products as well as academic and financial institutions. In Mongolia, the concept of industrial clusters currently has no clear legal basis, and a legal framework must be established at the earliest. Therefore, introducing a support system to promote industrial cluster activities is necessary. Another possible way to revitalize local industries is to promote the "One Village, One Product" movement, which is well-known in Mongolia. The development policies for the promotion of distinctive regional agro-pastoral industries and the formation of agro-pastoral clusters are shown in Table 2.7.

Table 2.7 Development policies for regional agro-pastoral industry promotion

Field	No.	Development Policies
4-1. Cluster development	4-1-1	Development of a legal framework for cluster development
	4-1-2	Introduction of a support system for export clusters
	4-1-3	Assignment of industry-academia collaboration coordinators
4-2. Regional industrial development	4-2-1	Formation of regional logistics hubs
	4-2-2	Dissemination of the OVOP Movement

Source: JICA Project Team

# 3. Agro-pastoral Value Chain Development Program

## 3.1 Overall Structure of Each Development Program

Based on the development strategy for the Mongolian agro-pastoral industry, a total of 11 programs were developed (Figure 3.1). Each program consists of several action plans, which were developed based on the knowledge and lessons learned through the surveys and pilot projects conducted by the JICA project team, as well as the experiences of Japan and third countries in VC development. The Action Plan proposes the direction of development identified in the Development Strategy, focusing more on "Productivity" and "Value" such as safety and security, quality, functionality, and environmental friendliness. However, it should be noted that further expansion of production scale is equally important, especially in the agricultural sector. In preparing the Action Plan, we have taken care to include all the "information that should be provided in the plan" as stipulated in the Development Policy Planning Law in Mongolia.

Concept	Direction	Development Program	Action Plan	
Realization of a resilient Mongolian agro-pastoral industry through strengthening the market competitiveness of agro-pastoral products	1. Establishing production and distribution foundations for stable supply of high value-added agricultural and pastoral products	1.1 Vegetable Supply Chain Enhancement Program	4	
		1.2 Fruit Supply Chain Enhancement Program	3	
		1.3 Oil Crop Supply Chain Enhancement Program	4	
		1.4 Meat and Dairy Products Supply Chain Enhancement Program	6	
		1.5 Animal Hair and Hide Supply Chain Enhancement Program	3	
		1.6 Honey Supply Chain Enhancement Program	4	
		1.7 Other Agricultural Supply Chain Enhancement Program	4	
	2. Strengthening quality and hygiene management systems and capacity of relevant administrative agencies to promote the export of agro-pastoral products	2.1 Strengthening quality and sanitation management systems for agro-pastoral products program	5	
		2.2 Promoting Export of Agricultural and Pastoral Products Program	3	
	3. Support for agro-pastoral enterprises and cooperatives, and the promotion of human resource development to revitalize the agro-pastoral industry	3.1 Strengthening the business management capacity of SMEs and Agricultural Cooperatives Program	4	
		4.1 Regional Agriculture and Pastoral Industry Promotion Program	3	
	4. Promotion of distinctive regional agro-pastoral industry and formation of agro-pastoral industry clusters			

Figure 3.1 Development program structure

Source: JICA Project Team

## 3.2 Vegetable Supply Chain Enhancement Program

### (1) Program Overview

Vegetable production and market supply in Mongolia are on the rise, partly due to increased demand and partly because of the introduction of a subsidy system for vegetable seeds and other products. The continuation of this system is expected in the future, but it is also essential to consider exit strategies from this system. An urgent issue is to focus on the horizontal development of good practices in organizing farmers and to build a system that will generate more profits for farmers. In addition, we aim to expand domestic vegetable consumption.

	Input	Production	Processing	Logistics/Export	Sales/Consumption
Actors	Suppliers (seeds, fertilizers, facilities, etc.)	Farmers, agricultural group and associations	Food Processors	Brokers, agricultural associations, distributors and exporters	Retail stores, restaurants, hotels, educational institutions, etc.
Major Issues	Dependence on imports for the majority of quality seeds, fertilizers, and pesticides. Difficulty in accessing inputs, especially in rural areas.	Limited production period. Unstable market access. Difficulty in accessing financial services. Difficulty in accessing irrigation in some areas. High cost of winter greenhouse cultivation. Weak on agricultural extension system.	Vegetable processors themselves are insufficient. Lack of domestically produced raw materials and partial dependence on imports. Lack of funds for procurement of raw materials and investment.	Dependence on "changes" for most of distribution. Lack of storage facilities and technology. High transportation costs. Limited vegetable distribution to rural areas.	Vegetable consumption is limited, especially in rural areas. There is a need for domestically produced vegetables, but the supply is insufficient.
Counter-Measures	<div style="background-color: #003366; color: white; padding: 5px; margin-bottom: 5px; display: inline-block;">1.1 Action Plan on expanding vegetable supply period through the introduction of excellent seeds and forcing cultivation</div> <div style="background-color: #003366; color: white; padding: 5px; margin-bottom: 5px; display: inline-block; margin-left: 100px;">1.2 Action Plan on promoting market-oriented agriculture</div> <div style="background-color: #003366; color: white; padding: 5px; margin-bottom: 5px; display: inline-block; margin-left: 100px;">1.3 Action Plan on establishing agricultural products distribution system by agricultural cooperatives</div> <div style="background-color: #003366; color: white; padding: 5px; margin-bottom: 5px; display: inline-block; margin-left: 100px;">1.4 Action Plan on implementing various training and awareness-raising activities related to simple vegetable processing and consumption</div>				

The Mongolian government has already provided support for the promotion of domestic vegetable production through subsidies for vegetables (10 items) and subsidies for winter heating costs, etc. For the time being, it is expected that this system will continue, but it is also important to consider exit strategies. As a program to strengthen the vegetable supply chain based on the basic concept and development policy, 1) plan to expand the volume and duration of vegetable supply by introducing high-quality seeds and varieties and forcing cultivation, 2) plan to promote market-oriented agriculture, 3) plan to establish an agricultural product distribution system by agricultural associations, and 4) plans for the implementation of various training and awareness raising activities related to simple vegetable processing and consumption.

In the planning process, the Mongolian government's efforts and donor-supported projects have provided good practices, and these were used as references in the A/P formulation. The MONVEGI project (Inclusive and Sustainable Vegetable Production and Marketing), supported by the Swiss Agency for Development Cooperation, is understood among the stakeholders as a good practice in introducing quality seeds and varieties and strengthening producer organizations. These lessons learned and results are internalized in the action plan and the focus shall be on horizontal transformation of good practices to effectively resolve the issues.

Below is a summary of the individual action plans.

**(2) Outline of each action plan**

No.	Action Plan	Summary of Activities	Implementing Agency	Development Indicators	Baseline	Expected Result	Project period	Project cost (Million MNT)	Consistency with National Policies
1.1	Action Plan on expanding vegetable supply period through the introduction of excellent seeds and forcing cultivation	<ul style="list-style-type: none"> <li>Introduction of superior domestic and foreign vegetable seeds and varieties that are suited to Mongolia's environmental conditions.</li> <li>Promotion of forcing cultivation on vegetable production.</li> <li>Building a database of quality seeds and varieties.</li> </ul>	MOFALI	Annual vegetable production	148,859 t/year (2021)	238,859 t/year	2025 - 2034	16,103	Vision 2050 3.1.1 Resolution No. 36 3.2.3
1.2	Action Plan on promoting market-oriented agriculture	<ul style="list-style-type: none"> <li>Improvement of input and market access through capacity-building training for small-scale producers.</li> <li>Development of extension guidelines and manuals for market-oriented farm management.</li> </ul>	MOFALI RD Center	Average farm household earnings	3,600,000 MNT/year	4,800,000 MNT/year	2025 - 2032	5,599	Vision 2050 3.1.1 Resolution No. 36 3.3.
1.3	Action Plan on establishing agricultural products distribution system by agricultural cooperatives	<ul style="list-style-type: none"> <li>Strengthen farmers' organizations and to establish a system for distribution and primary processing of agricultural products on a business basis</li> </ul>	MOFALI	Number of unions with enhanced capacity	10 unions	100 unions	2025-2030	7,755	Vision 2050 3.1.1 Resolution No. 36 4.2.1
1.4	Action Plan on implementing various training and awareness-raising activities related to simple vegetable processing and consumption	<ul style="list-style-type: none"> <li>To stimulate domestic vegetable consumption and improve nutritional status in Mongolia through awareness-raising activities related to domestic vegetable consumption among Mongolian citizens</li> </ul>	MOFALI	National vegetable consumption	2.1 kg/month/person	3.0 kg/month/appointment	2025 - 2034	4,889	Vision 2050 3.1.1 Resolution No. 36 5.10

### 3.3 Fruit Supply Chain Enhancement Program

#### (1) Program Overview

The annual production of fruits in Mongolia is about 1,800 tons (6,000 tons if wild species are included), while the annual consumption is over 30,000 tons, resulting in a large gap between supply and demand. In addition, with the Billion Tree National Movement, the production and distribution of fruit trees in domestic market is expected to expand. In order to strengthen the supply chain of fruit trees, it is particularly important to 1) strengthen the supply chain by establishing a domestic seed production and supply system, 2) increase production by spreading proper cultivation techniques, and 3) promote export of sea buckthorn.

	Input	Production	Processing	Logistics/Export	Sales /Consumption
Actor	Suppliers (seed, fertilizer, pesticide suppliers, etc.)	Farmers, farmers group, associations	Food Processors	Changes, agricultural associations, distributors and exporters	Retail stores, restaurants, etc.
Major Issues	Production and supply of domestic seed is inadequate. Mixture of varieties on farms and in the wild, requiring appropriate variety management.	Productivity is 2-3 tons/ha, which is less than ideal yield due to irrigation access difficulties and bird damage. Limited production period. Requires proper cultivation techniques and equipment.	Mixed varieties when procuring raw materials, insufficient differentiation and branding. Low factory utilization rate. Pesticide residues in accordance with European standards have been detected, and there is room for improvement in the production and processing stages.	Lack of storage facilities. High transportation costs. Large fluctuations in distribution volume and prices during harvest and off-season. Sea buckthorn is one of the few fruits exported.	Per capita consumption is low. Production is low relative to increasing demand. Little urban/rural consumption gap.
Counter-Measures	2.1 Action Plan on strengthening the supply chain based on the Fruit Tree Seedling Center		2.2 Action Plan on disseminating appropriate cultivation techniques		2.3 Action Plan on promoting export of sea buckthorn products

The annual consumption of fruit and berries in Mongolia is about 30,000 tons, while the annual production is about 8,000 tons, a large gap between supply and demand. In addition, from a demographic perspective, the population is expected to increase over the next few decades, and demand is expected to continue to rise. Although there are some limitations such as climatic conditions, the development direction of the fruit tree supply chain in Mongolia should be to expand the production and distribution of domestic fruit trees and berries. Among fruit trees, sea buckthorn is one of the few fruit trees that are produced in abundance and exported overseas, and further export promotion of this product is being pursued. In terms of policy, it should be noted that momentum is growing for the Billion Tree National Campaign announced for 2022.

Current issues in the supply chain include 1) insufficient production and supply of domestic seeds and seedlings at the input material stage, and mixed varieties in farms and the wild; 2) poor productivity and ideal yield at the production stage due to irrigation access difficulties, bird damage, etc.; 3) insufficient differentiation and branding at the processing stage due to mixed varieties at the time of raw material procurement; (4) In the distribution and export stages, there is a lack of storage facilities, high transportation costs, and large price fluctuations, (5) At the consumption stage, per capita consumption is low, but production is low compared to demand.

Based on the basic concept and development policy, three action plans were formulated as a program to strengthen the fruit tree supply chain: 1) plan to strengthen the supply chain based on the fruit tree nursery center, 2) plan to disseminate proper cultivation techniques, and 3) plan to promote export of sea buckthorn. The following is a summary of the individual action plans.

(2) Outline of each action plan

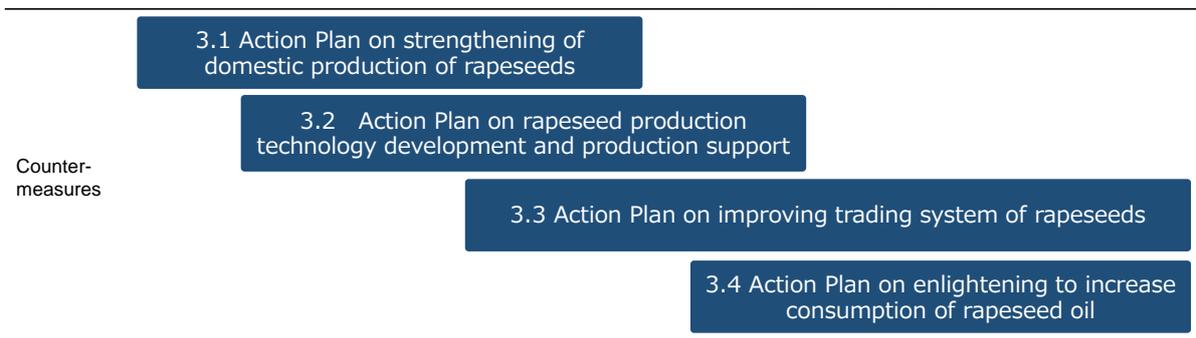
No.	Action Plan	Summary of Activities	Implementing Agency	Development Indicators	Baseline	Expected Result	Project period	Project cost (Million MNT)	Consistency with National Policies
2.1	Action Plan on strengthening the supply chain based on the Fruit Tree Seedling Center	<ul style="list-style-type: none"> <li>To increase domestic production and improve the quality of fruit trees by strengthening the seedling production and supply system of various fruit trees through the establishment of fruit tree seedling centers in each of the major regions.</li> </ul>	MOFALI Agricultural university	Number of seeds produced at seed centers	0 (2022)	1 million trees/year	2025 - 2034	9,400	Vision 2050 6.2.4 Resolution No. 36 3.10.2
2.2	Action Plan on disseminating appropriate cultivation techniques	<ul style="list-style-type: none"> <li>To establish a dissemination system for proper cultivation techniques for fruit trees.</li> <li>To develop extension guidelines and manuals for proper fruit tree cultivation techniques, and establish a system to be used by technicians and fruit tree growers.</li> </ul>	MOFALI	Number of fruit tree growers with enhanced capacity	0 (2022)	2,500 persons	2025 - 2030	4,199	Vision 2050 6.2.4 Resolution No. 36 3.10
2.3	Action Plan on promoting export of sea buckthorn products	<ul style="list-style-type: none"> <li>Promote exports of sea buckthorn products through the sea buckthorn clusters already established in Mongolia.</li> <li>Strengthen the capacity of administrative officials, prepare trade policies and support administrative procedures, conduct international market needs assessments and identify target markets, conduct marketing activities including sales promotion in identified target markets, and strengthen clusters.</li> </ul>	MOFALI	Seabuckthorn export value	890 Million MNT (2021)	1,780 Million MNT	2025-2034	3,250	Vision 2050 6.2.4 Resolution No. 36 3.10

## 3.4 Oil Crop Supply Chain Enhancement Program

### (1) Program Overview

The supply chain will be developed to meet the national goal of achieving self-sufficiency in edible oil by 2027. The most promising plant in Mongolia as an oil crop is rapeseed, and its production and processing systems are in place. Although it has been incorporated into the wheat crop rotation system, it is in competition with mustard for export to China, and a shift from mustard to rapeseed is expected. In order to achieve this, it is necessary to provide continuous support to producers, domestic production of rapeseed seeds, improvement of rapeseed trade conditions, and promotion of rapeseed oil sales.

	Input	Production	Processing	Distribution	Selling
Actors	Material suppliers	Farmers, corporations	Oil miller	Middlemen, distributors, exporters	Retailers, restaurants
Major issues	Seed is dependent on imports. A system for domestic production is required. Inputs are provided through soft loans.	Rapeseed production technology is immature, with low productivity. Development of appropriate technology and extension are needed.	There is only a large-scale oil miller. In order to compete with mustard, the trade conditions of rapeseed shall be more flexible.	The number of rapeseed oil dealers shall be increased. Priority is given to meeting domestic demand, but exports will also be made.	The superiority of rapeseed oil over other edible oils and its appropriate uses shall be shown to stimulate consumption.



The supply chain needs to be developed to meet the national goal of achieving self-sufficiency in edible oil by 2027. Rapeseed is the most promising oilseed crop in Mongolia, and a processing system has been established. The rapeseed production system is also integrated into the wheat crop rotation system, but the market tends to prefer mustard seed for export to China because of its more favorable marketing conditions.

Rape seed production is relatively new in Mongolia, and it is necessary to establish appropriate production technology and disseminate it to the producers. MONMAP-AVC has compiled a cultivation guide for easy reference by producers based on a rape cultivation manual prepared by researchers at the Mongolian University of Life Sciences. The guide is being distributed to growers at forums on oilseed rape. With the registration of two oilseed rape varieties in Mongolia, it is hoped that further verification of appropriate technology will be conducted to improve productivity.

A shift from mustard seed to rapeseed is expected. Key development directions to achieve this include; 1) strengthening domestic production of rapeseeds, 2) developing rapeseed production technology and supporting production, 3) improving terms of trade for rapeseed, and 4) conducting educating activities for increasing consumption of rapeseed oil.

**(2) Outline of each action plan**

No.	Action Plan	Summary of Activities	Implementing Agency	Development Indicators	Baseline	Expected Result	Project period	Project cost (Million MNT)	Consistency with National Policies
3.1	Action Plan on strengthening of domestic production of rapeseeds	<ul style="list-style-type: none"> <li>Introduce and establish a government management system for domestic production of oilseed rape seed and its stable supply.</li> <li>Following the system implemented in wheat, good agricultural corporations are certified as seed producers, and the government procures rapeseed for seed at a reasonable price, stores it in appropriate warehouses, and supplies it to producers in the following year under reasonable conditions.</li> </ul>	MOFALI	Registered rapeseed production	0 (2022)	500 t	2025 - 2034	1,549	Vision 2050 2.5, 8.2 Resolution No. 36 3.2.3
3.2	Action Plan on rapeseed production technology development and production support	<ul style="list-style-type: none"> <li>To improve the technology to bring the average oilseed rape yield from 0.6 t/ha to the world average level of 2.0 t/ha.</li> <li>Continue short-term loan programs for the procurement of seeds, fuel, fertilizers and pesticides, and long-term loan programs for the procurement of agricultural machinery.</li> <li>Advise producers on agricultural machinery so that they can select and operate the appropriate equipment.</li> </ul>	MOFALI RD Center	Rapeseed yield	0.6 t/ha (2022)	1.0 t/ha	2025 - 2034	6,946	Vision 2050 2.5, 8.2 Resolution No. 36 3.2.3
3.3	Action Plan on improving trading system of rapeseeds	<ul style="list-style-type: none"> <li>To promote stable oilseed rape and edible oil production, encourage prior consultation and agreement between producers and oil processor on trading conditions.</li> <li>To support the introduction of contract farming between agricultural cooperatives and oil processor.</li> </ul>	MOFALI	Rapeseed planted area	17,000 ha (2022)	50,000 ha	2025-2034	200	Vision 2050 2.5, 8.2 Resolution No. 36 3.2.3
3.4	Action Plan on enlightening to increase consumption of rapeseed oil	<ul style="list-style-type: none"> <li>To increase the consumption ratio of domestically produced rapeseed oil in the Mongolian edible oil market, which is dominated by imported sunflower and soybean oils, by publicizing its superiority to consumers and encouraging increased consumption.</li> </ul>	MOFALI	Rape seed oil consumption as a percentage of total edible oil	10 % of (2022)	20 %	2025 - 2034	190	Vision 2050 2.5, 8.2 Resolution No. 36 3.2.3

## 3.5 Meat and Dairy Products Supply Chain Enhancement Program

### (1) Program Overview

The number of livestock in Mongolia has been on the increase since the collapse of socialism exceeding 70 million. Although per capita meat consumption of Mongolia is by far the highest in the region, the production-consumption balance is distorted (over-production). Thus, all those abundant livestock resources should be tapped more by diversifying products, adding value to them and expanding its market into the international arenas. The following are the tools to realize these measures.

	Inputs	Production	Processing	Distribution/Export	Marketing/Sales
Actors	Commodity traders (feed, fuel), vets, etc.	Herders, intensive farmers, etc.	Processors (meat, milk, dairies, pet food, etc.)	Middlemen, retailers, exporters, etc.	Large supermarkets, Retailers, distributors, etc.
Main problems	Lack of efficient logistics between herders and traders, esp. in remote areas. Also, in the areas near the larger cities, grassland degradation is obvious. Instability of feedstuff supply in intensive farmers.	While inputs are available at a minimum cost or even no cost, unbalanced production cycles, lack of efficient logistics and inappropriate primary processing steps are obvious. Low productivity in intensive farming.	Undistributed production throughout the year due to a highly skewed seasonality (efficient storage system needed). Only a few processors are technically ready for new production approaches. Awareness-raising about quality and hygiene control is necessary.	Lack of systematic wide range logistics throughout the nation or even inter-Aimag, esp. at the herder level, thereby interrupting the business flow of goods and services	Although consumers' demands are identified at international arenas, for instance, in Japan, due to lack of PR activities such as "Matching" led by the government as yet the both sides have not been connected.
Counter-measures	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="width: 100%; text-align: center;">4.1 Action Plan on establishing a system for livestock breed improvement</div> <div style="width: 80%; text-align: center;">4.2 Action Plan on promoting younger livestock fattening business</div> <div style="width: 70%; text-align: center;">4.3 Action Plan on introducing meat grading system based on market needs</div> <div style="width: 50%; text-align: center;">4.4 Action Plan on slaughterhouse modernization</div> <div style="width: 60%; text-align: center;">4.5 Action Plan on promoting pet food business by using by-products from livestock</div> <div style="width: 80%; text-align: center;">4.6 Action Plan on improving quality raw milk collection system</div> </div>				

The livestock sector accounts for more than 80% of the latest agriculture GDP (2022), and this high figure is rooted in nomadism, which is a part of Mongolia's cultural heritage. The meat and milk supply chain, in particular, has the longest history of any industry in Mongolia, but there is much room for improvement. The most significant characteristic of the meat and milk supply chain is the extremely low ratio of shipments to modern slaughterhouses for meat and to processing plants with cold chains for milk, in other words, the ratio of shipments through formal channels is extremely low for both meat and milk. The percentage of meat shipments that have gone through formal channels is said to be  $\pm 10\%$ , while the percentage of milk shipments that have gone through regular channels varies greatly from region to region, but is almost nil in areas where the milk collection infrastructure has not been developed.

Beyond the above, the meat and milk supply chain faces a wide variety of challenges. Although short-term solutions are difficult, a realistic plan to solve or alleviate various issues while taking advantage of Mongolia's strengths is desirable. The action plans shown in the above figure were all developed with the utmost consideration of this point. The following is a summary of the individual action plans.

**(2) Outline of each action plan**

No.	Action Plan	Summary of Activities	Implementing Agency	Development Indicators	Baseline	Expected Result	Project period	Project cost (Million MNT)	Consistency with National Policies
4.1	Action Plan on establishing a system for livestock breed improvement	<ul style="list-style-type: none"> <li>To establish a breeding system whereby each aimag will raise a superior breed of livestock or use frozen semen of a superior breed to improve the breed of livestock.</li> </ul>	MOFALI	Number of Aimags with breeding system in place	5 (2022)	22	2025 - 2034	51,906	Vision 2050 3.1.1, 6.1
4.2	Action Plan on promoting younger livestock fattening business	<ul style="list-style-type: none"> <li>To facilitate the castration, raising, and fattening of male sheep born in the spring by the winter of the same year for sale to slaughterhouses and meat processing plants.</li> <li>To reduce labor and feeding costs, livestock head taxes, and the burden (devastation) on grazing land.</li> </ul>	MOFALI	Lamb Exports	500 t (2021)	50,000 t	2025 - 2034	1,506	Vision 2050 4.2.6
4.3	Action Plan on introducing meat grading system based on market needs	<ul style="list-style-type: none"> <li>To establish new criteria for the grading of meat.</li> <li>To disseminate the grading system as a basis for value-added branded meat sold by meat producing companies.</li> </ul>	MOFALI, Meat Institute	Availability of improved grading system	Not existed	Existed	2025 - 2034	2,076	Vision 2050 4.2.6
4.4	Action Plan on slaughterhouse modernization	<ul style="list-style-type: none"> <li>To promote the renovation of slaughterhouses to ensure a stable supply of safe meat slaughtered in hygienic facilities to consumers in and outside of Mongolia.</li> </ul>	MOFALI	Percentage of well-maintained slaughterhouses	10 % (2022)	50 %	2025 - 2034	52,156	Vision 2050 4.2.6, 4.5.7
4.5	Action Plan on promoting pet food business by using by-products from livestock	<ul style="list-style-type: none"> <li>To establish Mongolia as a new supply base for pet food ingredients in the global market.</li> </ul>	MOFALI	Pet food exports	106 t (2021)	150 t	2025 - 2029	2,600	Vision 2050 3.1.1 resolution No. 36 4.2.1
4.6	Action Plan on improving quality raw milk collection system	<ul style="list-style-type: none"> <li>To increase the amount of milk collected through formal channels and to increase the supply of hygienic, quality-assured drinking milk.</li> </ul>	MOFALI	Milk collection volume through formal channel per year	40,000 t (2022)	60,000 t	2025 - 2034	77,400	Vision 2050 3.1.1 resolution No. 36 4.2.1

## 3.6 Animal Hair and Hide Supply Chain Enhancement Program

### (1) Program Overview

In Mongolia, animal hair (wool and cashmere) and raw hides are among the most abundant resources. The key points of development are 1) to form a system to deliver raw hair and raw hides to processors in good quality, 2) to promote the renewal of equipment in processing companies and the production of high-quality semi-processed and finished products, and 3) to develop industrial human resources who can reflect environmental, animal welfare, and other perspectives in their products.

	Input	Production	Distribution	Processing	Sales, Consumption
Actors	Feed distributors, veterinarians, veterinary drug suppliers, etc.	Herders, Herders' cooperatives, livestock-related enterprises, etc.	Traders, Herders' cooperatives, livestock-related enterprises, etc.	Animal hair and leather processors	Exporters, clothing retailers, etc.
Major Issues	<ul style="list-style-type: none"> <li>Lack of networking between herders and traders in remote areas.</li> <li>Insufficient breeding of good wool and cashmere varieties.</li> </ul>	<ul style="list-style-type: none"> <li>Low quality wool and cashmere obtained from old livestock.</li> <li>Very high rate of raw hide loss due to wounds caused by physical contact, perforation by external parasites, etc., resulting in low commercial value.</li> </ul>	<ul style="list-style-type: none"> <li>Raw animal hair is being distributed without primary processing (e.g., sorting according to quality).</li> <li>Poor storage conditions of raw hides are deteriorating the value of the product.</li> </ul>	<ul style="list-style-type: none"> <li>Difficulty in procuring quality raw hair and raw hides.</li> <li>Aging processing equipment.</li> <li>Delays in introducing environmentally friendly product processing technology.</li> </ul>	<ul style="list-style-type: none"> <li>Lack of industry personnel familiar with trends (environmental friendliness and animal welfare).</li> </ul>
Counter-measures	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; background-color: #003366; color: white; padding: 5px; text-align: center; width: 20%;">5.1 Action Plan on establishing a system for livestock breed improvement</div> <div style="border: 1px solid black; background-color: #003366; color: white; padding: 5px; text-align: center; width: 20%;">5.2. Action Plan on strengthening the supply chain of raw wool, cashmere and raw hides based on the herders' cooperatives</div> <div style="border: 1px solid black; background-color: #003366; color: white; padding: 5px; text-align: center; width: 20%;">5.3. Action Plan on establishing a sustainable textile and leather production system</div> <div style="border: 1px solid black; background-color: #003366; color: white; padding: 5px; text-align: center; width: 20%;">5.4. Action Plan on developing industrial cluster in textile sector</div> </div>				

In Mongolia, wool, cashmere, and raw hides are among the country's most abundant resources, and there is also considerable room to increase the value of these commodities. Although these products have great potential for export, their market competitiveness is not high, and it is essential to improve the supply chain as a whole. The following is an overview of the action plans that comprise this program.

**5.2 Action Plan on strengthening the supply chain of raw wool, cashmere and raw hides based on the herders' cooperatives** is a plan to build a raw wool and hides distribution system operated by herder's cooperative. This plan is aimed to strengthen the ability of herder's cooperative to collect, primary process, and ship raw wool and hides, so that quality raw materials can be delivered to buyers.

**5.3 Action Plan on establishing a sustainable textile and leather production system** is a plan to promote the capital investment and technology transfer related to environmentally friendly product manufacturing techniques necessary to comply with the approved "MNS 6926:2021 - Standard for Sustainable Textile Production" in 2021

**5.4 Action Plan on developing industrial cluster in textile sector** is a plan to form a textile industry cluster to promote the production and export of more competitive semi-processed and finished products of animal hair such as wool and cashmere. In addition to strengthening government support for the textile industry, especially for the yarn-making sector, it will promote the development of clusters to strengthen cooperation between the actors of textile industry and universities, research institutions, financial institutions, etc.

Note that **Action Plan on establishing a system for livestock breed improvement** is identical to the one with the same title in the Meat and Milk Supply Chain Enhancement Program, so it is omitted here.

(2) Outline of each action plan

No.	Action Plan	Summary of Activities	Implementing Agency	Development Indicators	Baseline	Expected Result	Project period	Project cost (Million MNT)	Consistency with National Policies
5.1	Action Plan on establishing a system for livestock breed improvement	<ul style="list-style-type: none"> <li>To establish a breeding system whereby each aimag will raise a superior breed of livestock or use frozen semen of a superior breed to improve the breed of livestock (same as 4.1).</li> </ul>	MOFALI	Number of aimags establishing a system for livestock breed improvement	5 (2022)	22	2025 - 2034	51,906	Vision 2050 3.1.1, 6.1
5.2	Action Plan on strengthening the supply chain of raw wool, cashmere and raw hides based on the herders' cooperatives	<ul style="list-style-type: none"> <li>Strengthen the capacity of herder's cooperatives so that they can collect, primary process, and ship raw wool and hides.</li> <li>To facilitate the distribution of raw wool and hides by herder's cooperatives, support will be provided for the necessary equipment such as warehouses, shearing machines, compressors, etc.</li> </ul>	MOFALI	Wool and hide supply volume per year from herders' cooperatives	Wool: 50 ton Raw hides: 3,000 pieces	Wool: 9,600 tons Raw hides: 1,000,000 pieces	2025 - 2034	228,628	Vision 2050 3.1.1 resolution No. 36 4.2.1
5.3	Action Plan on establishing a sustainable textile and leather production system	<ul style="list-style-type: none"> <li>Promote capital investment and technology adoption for environmentally friendly product manufacturing technologies necessary to comply with "MNS 6926:2021 - Standard for Sustainable Textile Production".</li> <li>Promote environmentally friendly leather processing technologies.</li> </ul>	MOFALI,	Number of certified companies	Textile companies : 21 Leather companies : 17	Textile companies: 43 Leather companies: 44	2025 - 2034	13,863	Vision 2050 4.2.7, 4.2.8
5.4	Action Plan on developing industrial cluster in textile sector	<ul style="list-style-type: none"> <li>To form a textile industry cluster to promote the production and export of more competitive semi-processed and finished animal hair products.</li> <li>In addition to strengthening government support for the textile industry, especially for the yarn-making sector, the government will promote the creation of clusters to strengthen collaboration among stakeholders including universities, research institutions, and financial institutions.</li> </ul>	MOFALI	Yarn (HS5109) export volume per year, Clothing (HS61) export volume per year	Yarn: 7.8 ton Clothing: 558 ton	Yarn: 20.2 ton Clothing: 908 ton	2025 - 2034	46,650	Vision 2050 4.2.7, 4.2.8

## 3.7 Honey Supply Chain Enhancement Program

### (1) Program Overview

Unstable production and quality, as well as high costs, are challenges. In the domestic market, distribution through supermarkets has become the mainstream, and companies are contributing to stable supply as important players. However, there are also many imports, and the supply always exceeds consumption, making the competitive environment severe. More stable supply is needed. Price competition in the international market is also severe, and Mongolian honey is not price competitive. Being a landlocked country, Mongolian honey is also at a disadvantage. Along with efforts to mitigate high costs, including logistics and export procedures, it is necessary to develop Mongolia's advantage to match the target market.

	Input	Production	Processing	Distribution & Export	Sales & Consumption
Actors	Pesticide suppliers, beekeepers, importers, etc.	Beekeepers, beekeeping companies	Beekeepers, beekeeping companies, honey filling companies	Beekeepers, beekeeping companies, honey filling companies	Beekeepers, companies, retailers
Main Issues	There are problems with obtaining appropriate pesticides and bee colonies with low risk of residues. Domestic production is available, but limited.	Pests and diseases are widespread. Unstable honey harvesting environment and short production season. Bee rearing techniques need to be improved. Residual risks have not been assessed. Some beekeepers have a low awareness of compliance with standards.	High cost of honey procurement for companies. High inventory and low factory operation. Low food sanitation awareness among beekeepers. Many products are unstable in quality. Mistrust of false place of origin and fake honeys. Dependence on imports for packaging materials, with few options.	High transportation costs. Unstable supply due to many beekeepers selling directly to consumers. Lack of product lines in quality and price range for daily use. Lack of export competitiveness.	Per capita consumption is low. Consumers are unaware of the quality and standards of honey. High cost of sales. Products are not competitive.



While Mongolian honey has the issues of (1) unstable production, (2) unstable quality, and (3) high cost, there is a promising market both domestically and internationally. To expand the market for honey, it is necessary to improve the production and quality of honey and ensure a stable supply to the market. Domestic honey is highly valued in the domestic market, and once a stable supply is achieved, import substitution of honey will likely proceed. The following is a summary of the action plans that comprise this program.

**6.1 Action Plan on developing capacity of beekeeping veterinarians and technology for pests and diseases resistant beekeeping** is a plan to address pest control to avoid bee colony loss, which is the greatest risk in beekeeping. In addition, a monitoring system for beekeeping by veterinarians will be established, and the training will be provided to improve the skills of beekeeping specialists.

**6.2 Action Plan on strengthening market competitiveness of honey products through the introduction of proper quality assurance system** is a plan to enhance added value of Mongolian honey in domestic and international market through the introduction of honey quality management system and traceability system.

**6.3 Action Plan on promoting honey exports through honey cluster strengthening** is a plan to strengthen existing honey cluster to analyze destination markets for honey exports and facilitate the development of honey export protocols as required by export destinations. The collaboration between beekeepers and honey processing companies will contribute to the stable supply and stock of honey.

**6.4 Action Plan on promoting beekeeping industry in collaboration with other industries** aims to link beekeeping with other industries. In addition to working with the agro-pastoral industry to stabilize honey nectar sources, it promotes linkages with the tourism industry to expand the honey market.

**(2) Outline of each action plan**

No.	Action Plan	Summary of Activities	Implementing Agency	Development Indicators	Baseline	Expected Result	Project period	Project cost (Million MNT)	Consistency with National Policies
6.1	Action Plan on developing capacity of beekeeping veterinarians and technology for pests and diseases resistant beekeeping	<ul style="list-style-type: none"> <li>To strengthen the beekeeper's capacity of pest control to avoid the risk of bee colony loss.</li> <li>To establish a veterinary beekeeping monitoring system, including a review of the veterinarian deployment plan.</li> <li>To conduct training to improve the capacity of beekeeping specialists.</li> </ul>	MOFALI	Percentage of contracts between veterinarians and beekeepers	13%.	80%.	2025 - 2034	1,538	Vision 2050 3.1.1, 6.1
6.2	Action Plan on strengthening market competitiveness of honey products through the introduction of proper quality assurance system	<ul style="list-style-type: none"> <li>To promote the introduction of quality management systems such as traceability systems and honey GAP. This will improve the added value of honey in both domestic and international markets.</li> </ul>	MOFALI	Traceable honey distribution volume per year	0 t	200 t	2025 - 2034	2,726	Vision 2050 3.1.1 resolution No. 36 4.2.1
6.3	Action Plan on promoting honey exports through honey cluster strengthening	<ul style="list-style-type: none"> <li>To strengthen cooperation between beekeepers and honey processing companies to establish a stable supply system of raw honey.</li> <li>To strengthen the coordination of organizations that have a relationship with honey exports to analyze target markets and develop export protocols required by destination countries.</li> </ul>	MOFALI, Honey cluster	Honey export volume per year	0.3 t	100 t	2025 - 2034	2,083	Vision 2050 4.2.7, 4.2.8
6.4	Action Plan on promoting beekeeping industry in collaboration with other industries	<ul style="list-style-type: none"> <li>To strengthen partnerships with the agro-pastoral industry to secure honey as a nectar source.</li> <li>To promote partnerships with the tourism industry to expand the honey market.</li> </ul>	MOFALI	Honey production volume	0t	70 t	2025 - 2034	1,890	Vision 2050 4.2.7, 4.2.8

## 3.8 Other Agricultural Supply Chain Enhancement Programs

### (1) Program Overview

Although the consumption and production of mushrooms is currently low in Mongolia, demand is expected to increase in the future as a healthy food. Therefore, in order to strengthen the domestic supply chain of mushrooms, which is dependent on imports, we recommend 1) promotion of research and dissemination of mushroom production technology, 2) development of a national standard for mushrooms, and 3) educational activities to increase consumption. Note that these efforts are considered common initiatives for minor crops and foods other than mushrooms.

	Input	Production	Processing	Distribution	Selling
Actor	Spawn, mycelium, and substrate producers	Producers, associations, corporations	Food processors	Middlemen, distributors, exporters	Retailers, restaurants
Major issues	There are few types of mushrooms suitable for Mongolia. It is difficult to procure materials and equipment.	Appropriate technology for mushroom production is not established yet. It is necessary to provide technical training to increase the number of producers.	Mushroom packing methods need to be improved. In addition, food development and production using domestic mushrooms is required.	It is necessary to develop a domestic mushroom handler.	Enlightening activities are needed to increase consumption of mushrooms, which contribute to better health.
Counter-measures	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; background-color: #003366; color: white; padding: 5px; text-align: center;">7.1 Action Plan on promoting research and dissemination of mushroom production technology</div> <div style="border: 1px solid black; background-color: #003366; color: white; padding: 5px; text-align: center;">7.2 Action Plan on establishing national standards for mushroom production</div> <div style="border: 1px solid black; background-color: #003366; color: white; padding: 5px; text-align: center;">7.3 Action Plan on enlightening of mushroom consumption</div> </div>				

The following is a summary of the action plans that comprise this program.

**7.1 Action Plan on promoting research and dissemination of mushroom production technology** is a plan to develop production technology for mushrooms suited to environmental conditions, select appropriate products and varieties, and provide support for research conducted by the University of Life Sciences and Academy of Sciences. Based on the results obtained, the public and private sectors will cooperate to further stimulate dissemination and guidance to mushroom producers and expand commercial production.

**7.2 Action Plan on establishing national standards for mushroom production** is a plan to develop a national standard for mushroom production with the aim of building a system to properly manage the mushroom production process.

**7.3 Action Plan on enlightening of mushroom consumption** is a plan to publicize to the public the nutritional and functional benefits of mushrooms and the superiority of domestic mushrooms over imported mushrooms. It will also promote the domestic production and supply of mushrooms by providing support for public relations activities and business matching opportunities with retailers to those involved in the mushroom industry.

**7.4 Action Plan on developing fish processing facilities aimed at promoting fish diets** is a plan that involves conducting fish resource surveys to avoid depletion of fish resources, promoting the development of fish processing and freezing facilities, and conducting dietary education activities for the public regarding fish diets.

**(2) Outline of each action plan**

No.	Action Plan	Summary of Activities	Implementing Agency	Development Indicators	Baseline	Expected Result	Project period	Project cost (Million MNT)	Consistency with National Policies
7.1	Action Plan on promoting research and dissemination of mushroom production technology	<ul style="list-style-type: none"> <li>To support for research activities on developing production techniques for mushrooms suited to environmental conditions and promote the selection of appropriate varieties.</li> <li>To disseminate the mushroom production guide to mushroom producers to expand commercial production of mushrooms.</li> </ul>	MOFALI	Number of mushroom growers	50	500	2025 - 2034	550	Vision 2050 2.5, 8.2
7.2	Action Plan on establishing national standards for mushroom production	<ul style="list-style-type: none"> <li>To accumulate data on mushroom quality within mushroom producer organizations and production companies.</li> <li>To develop national standard of mushroom production based on the data obtained through the data accumulated by mushroom producer organizations and production companies</li> </ul>	MOFALI Private companies and organizations	Total sales value of mushrooms per year	MNT 100 Million.	MNT 1,000 Million	2025 - 2034	365	Vision 2050 2.5, 8.2
7.3	Action Plan on enlightening of mushroom consumption	<ul style="list-style-type: none"> <li>To publicize the nutritional and functional benefits of mushrooms and the superiority of domestic mushrooms over imported mushrooms.</li> <li>To strengthen partnerships between the stakeholders of mushroom industry and retailers and food processors.</li> <li>To support stakeholders of mushroom industry on public relations activities at public events</li> </ul>	MOFALI,.	Total mushroom consumption per year	1,000 ton	2,000 ton	2025 - 2029	400	Vision 2050 2.5, 8.2
7.4	Action Plan on developing fish processing facilities aimed at promoting fish diets	<ul style="list-style-type: none"> <li>To conduct fish resource surveys to avoid fish resource depletion.</li> <li>To support for developing fish processing and frozen storage facilities.</li> <li>To conduct nutrition education (fish diet) activities for the public.</li> </ul>	MOFALI	Total fish consumption per year	0.18kg	0.3kg	2025 - 2034	1,025	Vision 2050 2.6.2, 2.7.1

## 3.9 Strengthening Quality and Sanitation Management Systems for Agro-pastoral Products Program

### (1) Program Overview

The administrative structure for sanitation management is being reorganized, and the roles of each agency are not clear, despite the need to raise the overall level of sanitation management. Immediate restructuring of the administrative structure is needed to provide appropriate corporate support. While sanitation management is one of the most important trade conditions, there are limitations in the analytical capacity of inspection laboratories. In addition, to promote exports, it is necessary to introduce international-level quality control and food safety certification to strengthen competitiveness.

Actor	Government Agencies	Inspection laboratories	Public interests organizations (accreditation & certification bodies, etc.)	Companies, producers
Major issues	There is no agency responsible for the coordination function of relevant ministries and agencies. Administrative agencies involved in food safety are undergoing reorganization. Lack of specialized human resources.	Lack of analytical equipment and reagents. Some companies are dissatisfied with sampling and laboratory services. Documentation capacity is low. Although international accreditation has been obtained, they are not trusted by importing countries.	There is a problem with the audit capability of the certification body. Lack of consultants for certification. Lack of resources to train company personnel.	Insufficient information collection and difficulties in trade procedures. There is wide variation in efforts to introduce international certification, traceability, etc. Human resource development within companies is lagging.
Counter-measures	<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="border: 1px solid black; background-color: #003366; color: white; padding: 5px; width: 30%; text-align: center;">8.1 Action Plan on strengthening the capacity of food safety administration</div> <div style="border: 1px solid black; background-color: #003366; color: white; padding: 5px; width: 30%; text-align: center;">8.2 Action Plan on strengthening export inspection capacities</div> <div style="border: 1px solid black; background-color: #003366; color: white; padding: 5px; width: 30%; text-align: center;">8.3 Action Plan on training human resources in sanitation and quality control</div> <div style="border: 1px solid black; background-color: #003366; color: white; padding: 5px; width: 30%; text-align: center;">8.4 Action Plan on strengthening export competitiveness through acquisition of international certification</div> </div>			

Currently, Mongolia is in the process of reorganizing its administrative structure for sanitation and quality control, and the structure needs to be restructured as soon as possible. In order to implement international-level sanitation and quality control, the overall level of sanitation and quality control, including inspection capacity, must be raised. Although laws on sanitation and quality control are in place, support for the private sector is limited, and the burden on small and medium-sized enterprises (SMEs) to conduct quality control at the international level is heavy. The following is an overview of the action plans that comprise this program.

**8.1 Action Plan on strengthening the capacity of food safety administration** is the plan to facilitate the development of a risk management plan and monitoring plan by each agency, based on a clear understanding of the roles and legal basis of the government agencies involved in the food safety system.

**8.2 Action Plan on strengthening export inspection capacities** is to strengthen the inspection capacity required for export of agricultural and pastoral products.

**8.3 Action Plan on preparatory survey for post-harvest reduction** is to understand the actual situation of food loss from post-harvest to distribution, and to formulate a food-loss reduction strategy.

**8.4 Action Plan on training human resources in sanitation and quality control** is a plan to develop hygiene and quality control trainer system to create an environment for SMEs to obtain international certifications such as HACCP and FSSC22000

**8.5 Action Plan on strengthening export competitiveness through acquisition of international certification** is a plan to promote acquiring the international certifications that are valid in export markets, leading to increased exports.

(2) Outline of each action plan

No.	Action Plan	Summary of Activities	Implementing Agency	Development Indicators	Baseline	Expected Result	Project period	Project cost (Million MNT)	Consistency with National Policies
8.1	Action Plan on strengthening the capacity of food safety administration	<ul style="list-style-type: none"> <li>To clarify the roles and responsibilities of agencies involved in food safety and sanitation management, and strengthen the capacity of administrative personnel in the area of food sanitation management.</li> </ul>	MOFALI FSRL, SCVL, Custom	Existence of related policy	Non-existent	Exists	2025 - 2034	1,882	Vision 2050 2.5.20
8.2	Action Plan on strengthening export inspection capacities	<ul style="list-style-type: none"> <li>To establish a system to regularly update quarantine information.</li> <li>To develop an inspection agency development plan to ensure that export inspections are carried out properly.</li> <li>Systematic maintenance of equipment to ensure efficient and necessary inspections, as well as to improve inspectors' skills.</li> </ul>	MOFALI MASM, FSRL, SCVL	Existence of related policy	Non-existent	Exists	2025 - 2034	7,600	Vision 2050 2.5.13 2.5.19 2.5.20
8.3	Action Plan on preparatory survey for post-harvest reduction	<ul style="list-style-type: none"> <li>To assess the actual situation of food loss from post-harvest to distribution</li> <li>To develop a strategy for food loss reduction.</li> </ul>	MOFALI,.	Existence of related policy	Non-existent	Exists	2025 - 2026	1,266	Vision 2050 4.2.38 6.4.2, 6.4.4
8.4	Action Plan on training human resources in sanitation and quality control	<ul style="list-style-type: none"> <li>To develop a hygiene and quality control trainer system and train trainers to improve the hygiene and quality control capacity of SMEs.</li> </ul>	MOFALI, MOH	Number of trainers	0 person	100 people	2025 - 2034	2,131	Vision 2050 2.5.19 2.5.20
8.5	Action Plan on strengthening export competitiveness through acquisition of international certification competitiveness through international certification	<ul style="list-style-type: none"> <li>Identify international certifications that are advantageous for the export of Mongolian agro-pastoral products and strengthen the accreditation system for international certifications.</li> <li>Strengthening certification bodies, including securing auditors and improving audit capacity.</li> </ul>	MOFALI MASM MNAS	Number of certifications obtained	0	114	2025 - 2034	14,990	Vision 2050 2.5.19 2.5.20 4.5.7

## 3.10 Promoting Export of Agricultural and Pastoral Products Program

### (1) Program Overview

Duplicated documents for export, complicated and time-consuming procedures. Mistakes are often made, placing a heavy burden on companies. In trade negotiations, there is insufficient information sharing among relevant ministries and agencies, and limited cooperation between the private sector and government agencies. Negotiations proceed with only a few agencies and there is no strategy. It is difficult for companies to fully understand the conditions of export destinations by themselves, but support organizations do not cooperate with each other, and companies do not receive sufficient support.

Actor	Government Agencies	Public interests organizations (Chamber of Commerce, industry associations)	Exporting companies
Major issues	Companies must obtain the necessary export documents from several agencies, in turn. The time and cost is significant and mistakes are often made. Lack of coordination within government agencies and lack of information on export targets and private sector needs. Weak negotiation skills.	Weak intermediary function between the private sector and government agencies. Insufficient support is provided to enterprises. Budget and human resources for enterprise support are inadequate, and support programs are few and far between.	Insufficient information collection and difficult trade procedures. It is difficult for SMEs to select advantageous markets on their own and follow the paperwork according to the requirements.
Counter-measures	9.1 Action Plan on optimizing trade procedures	9.2 Action Plan on strengthening trade negotiation capabilities	9.3 Action Plan on strengthening export support

Export procedures are cumbersome and time-consuming and costly for companies, which hinders exports. In addition, there is a lack of information on partner countries and the needs of the private sector in trade negotiations, and there is insufficient coordination among related agencies. Corporate support is also limited, and the hurdles to exporting are very high for SMEs. Below is an overview of the action plans that comprise this program.

**9.1 Action Plan on optimizing trade procedures** is a plan to introduce a registration system for exporting companies, establish a system to maintain the documentary information required by importing countries, promote one-stop service through computerization, and strengthen the logistics capacity of relevant agencies for reducing the cost and time of export-related procedures.

**9.2 Action Plan on strengthening trade negotiation capabilities** is a plan to assign dedicated officers to administrative agencies involved in agricultural trade and create a mechanism for cooperation between the relevant agencies and the private sector for developing a system for strategic trade negotiations with exporting countries in line with the needs of the private sector.

**9.3 Action Plan on strengthening export support** is a plan to develop a program to support companies to expand their exports by assisting them in business negotiations and contracts with companies in importing countries, providing information on how to choose favorable tariffs, and strengthening the capacity of the Mongolian National Chamber of Commerce (MNCCI).

(2) Outline of each action plan

No.	Action Plan	Summary of Activities	Implementing Agency	Development Indicators	Baseline	Expected Result	Project period	Project cost (Million MNT)	Consistency with National Policies
9.1	Action Plan on optimizing trade procedures	<ul style="list-style-type: none"> <li>To introduce an accreditation and registration system for exporting companies</li> <li>To establish a system to maintain the documentary information required by importing countries.</li> <li>To promote one-stop service through computerization, and strengthen the logistics capacity of relevant agencies.</li> </ul>	MOFALI	Time required for the procedure (hour)	260	106	2025 - 2034	1,793	Vision 2050 4.4.11 4.5.7, 4.5.8
9.2	Action Plan on strengthening trade negotiation capabilities	<ul style="list-style-type: none"> <li>To develop a system for strategic trade negotiations, assign dedicated officers to government agencies involved in agricultural trade, and create a mechanism for cooperation among relevant agencies and the private sector.</li> <li>To select priority agricultural exports and priority target countries and prepare for trade negotiations.</li> </ul>	MOFALI	Assignment of full-time negotiators	0	3	2025 - 2034	7,852	Vision 2050 4.4.11 4.5.7, 4.5.8
9.3	Action Plan on strengthening export support	<ul style="list-style-type: none"> <li>To Develop corporate support programs such as business negotiation support, contracting support with companies in importing countries, and providing information on how to select favorable tariffs, with the aim of expanding corporate exports, as well as strengthening MNCCI's capacity.</li> </ul>	MOFALI, MNCCI	Number of companies assisted	0	1,000	2025 - 2034	24,505	Vision 2050 4.4.11 4.5.7, 4.5.8

## 3.11 Strengthening the Business Management Capacity of SMEs and Agricultural Cooperatives Program

### (1) Program Overview

In establishing agro-pastoral value chains, it is essential to strengthen the management capacity of SMEs and cooperatives that takes role for distribution and commercialization of related products. Although the revision of the Law on Cooperatives has made it possible for cooperatives to access funds from the financial market, they face a high hurdle in accessing funds due to their fragile management base and governance structure. In addition, it is necessary to improve and streamline indirect operations such as sales, customer service, and back-office operations (general affairs, accounting, human resources, labor relations, inventory control, etc.).

Actors	Administrative agencies (Small and Medium Enterprise Agency, etc.)	Financial institutions	Private small and medium-sized enterprise	Agriculture and livestock related cooperatives
Major Issues	<ul style="list-style-type: none"> <li>Measures related to low-interest loans to SMEs and cooperatives have been implemented.</li> <li>On the other hand, measures to strengthen the management capacity of SMEs and cooperatives are limited.</li> </ul>	<ul style="list-style-type: none"> <li>Difficulty in providing loans to SMEs and cooperatives with poor business management bases.</li> <li>Methods for evaluating the value of movable assets are not widespread, making it difficult to use them as collateral for credit.</li> </ul>	<ul style="list-style-type: none"> <li>Weak financial position and governance structure. Difficulty in accessing funds in the absence of assets to serve as collateral.</li> <li>Difficulty in procuring sufficient raw materials due to lack of cash and inability to obtain low-interest loans.</li> </ul>	<ul style="list-style-type: none"> <li>In a great number of cases, there are no assets as a cooperative organization.</li> <li>Articles of association are not properly prepared, and the responsibility structure within the organization is unclear.</li> <li>The above factors make it extremely difficult to obtain financing.</li> </ul>
Counter-measure	10.1 Action Plan on preparatory study to introduce value chain financing system			
	10.2 Action Plan on preparatory study to introduce warehouse receipt system			
	10.3 Action Plan on strengthening business management capacity of SMEs			
	10.4 Action Plan on strengthening the business management capacity of agricultural cooperatives			

Improving access to finance is crucial for building agro-pastoral value chains, from the perspective of increasing the scale of agro-pastoral businesses and creating competitiveness in agro-pastoral products. This program presents an action plan for new financing systems other than credit secured by real estate and movable assets, and for strengthening the organization of private companies and cooperatives related to agro-pastoral industries. The following is an overview of the action plans that comprise this program.

**10.1 Action Plan on preparatory study to introduce value chain financing system** is a plan to establish a mechanism whereby the buyer of raw materials issues a purchase guarantee, which is then used as collateral by commercial banks to provide loans to SMEs and agro-pastoral cooperatives for improving access to finance for SMEs and agro-pastoral cooperatives that have difficulty in obtaining loans from a credit risk perspective.

**10.2 Action Plan on preparatory study to introduce warehouse receipt system** is a plan to form a mechanism for warehouse operators to issue warehouse receipts to depositors of agricultural and pastoral products that are recognized as having a certain asset value. The study should start from the identification of possible items to be deposited among the agro-pastoral products in Mongolia.

**10.3 Action Plan on strengthening business management capacity of SMEs** is a plan to promote SMEs on achieving more efficient and stable management by dispatching experts to provide consulting services.

**10.4 Action Plan on strengthening the business management capacity of agricultural cooperatives** is a plan to strengthen the management capacities of the cooperatives by providing opportunities for them to see the cooperatives that are implementing advanced initiatives in terms of value-adding and trading of agricultural and pastoral products, and provide training related to the management of the cooperatives.

(2) Outline of each action plan

No.	Action Plan	Summary of Activities	Implementing Agency	Development Indicators	Baseline	Expected Result	Project period	Project cost (Million MNT)	Consistency with National Policies
10.1	Action Plan on preparatory study to introduce value chain financing system	<ul style="list-style-type: none"> <li>To improve access to finance for SMEs and agro-pastoral cooperatives that have difficulty in obtaining loans from a credit risk perspective, a mechanism will be formed whereby the buyer of raw materials issues a purchase guarantee, and commercial banks will use this as collateral to provide loans to SMEs and agro-pastoral cooperatives.</li> </ul>	MOFALI SMEA	Existence of institution	Non-existent	Exists	2025 – 2026	931	Vision 2050 4.1.17 4.3.20
10.2	Action Plan on preparatory study to introduce warehouse receipt system	<ul style="list-style-type: none"> <li>To form a mechanism for warehouse operators to issue warehouse receipts to depositors of agricultural and pastoral products that are recognized as having a certain asset value.</li> </ul>	MOFALI SMEA	Existence of institution	Non-existent	Exists	2025 - 2026	655	Vision 2050 4.1.17 4.3.20
10.3	Action Plan on strengthening business management capacity of SMEs	<ul style="list-style-type: none"> <li>To expand support programs for small and medium-sized enterprises (SMEs) in the agro-pastoral industry to help them achieve more efficient and stable management.</li> <li>To provide partial support for the dispatch of experts to provide consulting services to management departments, thereby creating an environment that facilitates access to advice on optimizing financial management, reducing costs, and improving sales promotion and marketing.</li> </ul>	MOFALI SMEA	Number of companies assisted	0	100	2025 - 2034	500	Vision 2050 4.1.17 4.3.20
10.4	Action Plan on strengthening the business management capacity of agricultural cooperatives	<ul style="list-style-type: none"> <li>To strengthen the existing agro-pastoral cooperatives by providing training on the management of cooperatives and inspections of cooperatives that are making advanced efforts in terms of value-adding and trading of agro-pastoral products.</li> </ul>	MOFALI SMEA	Number of cooperatives engaged in business activities such as collection, shipping, and primary processing	10	230	2025 - 2034	1,897	Vision 2050 3.3.1

## 3.12 Regional Agriculture and Pastoral Industry Promotion Program

### (1) Program Overview

Various export clusters have been formed in Mongolia with the support of development partners. Currently, a cosmetics cluster, a sea buckthorn cluster, a honey cluster, and other clusters have been formed around the MNCCI, and efforts are being made to export to the EU, Japan, and China markets. In the future, it is necessary to institutionalize these efforts so that they will not be transitory, and to expand the support system for the clusters. In addition, the OVOP movement and the development of industrial centers, including the establishment of industrial parks, are necessary for the development of local agricultural and pastoral industries.

Actors	Government agencies (MED, Small and Medium Enterprise Agency, etc.)	Universities, research institutes, etc.	MNCCI	Agriculture and livestock related companies, organizations, etc.
Major Issues	<ul style="list-style-type: none"> <li>The legal system for industrial clusters has not been developed.</li> <li>As a result, the definition of industrial clusters has not been defined, and support systems for clusters have not been developed.</li> </ul>	<ul style="list-style-type: none"> <li>A small number of universities and research institutions conduct research on technologies capable of creating market competitiveness.</li> <li>Initiatives on Industry-Academia collaboration are limited.</li> </ul>	<ul style="list-style-type: none"> <li>MNCCI has been formed to support the networking of export clusters with the support of development partners, but more services for individual clusters are needed.</li> </ul>	<ul style="list-style-type: none"> <li>Lack of financial and human resources to develop technology and strengthen marketing in international markets.</li> </ul>
Counter-measure	<div style="background-color: #003366; color: white; padding: 5px; text-align: center;">11.1 Action Plan on developing institutional system to support industrial clusters</div> <div style="background-color: #003366; color: white; padding: 5px; text-align: center; margin-top: 10px;">11.2 Action Plan on strengthening industry-academia collaboration to improve market competitiveness</div> <div style="background-color: #003366; color: white; padding: 5px; text-align: center; margin-top: 10px;">11.3 Action Plan on promoting One Village, One Product movement</div>			

The Regional Agriculture and Pastoral Industry Promotion Program is a program designed to create an environment for strengthening market competitiveness in the rural agro-pastoral industry. Below is a summary of the action plans that comprise this program.

**11.1 Action Plan on developing institutional system to support industrial clusters** aims to institutionalize industrial clusters that have not yet had a clear institutional basis, and to establish a support system for industrial clusters that have been formed based on the cluster development guidelines developed by the MONMAP-AVC.

**11.2 Action Plan on strengthening industry-academia collaboration to improve market competitiveness** is a plan to assign industry-academia collaboration coordinators mainly at universities and research institutes related to agro-pastoral sector to strengthen matching and collaboration between the industry and academia. It is intended to promote the utilization of knowledge and technology generated at universities in the industrial field, and to establish a mechanism to support this effort.

**11.3 Action Plan on promoting One Village, One Product (OVOP) movement** will disseminate and promote the concept of OVOP to stimulate the production and sales of specialty agro-pastoral products in rural areas. At the same time, a brand committee will be established to certify local brands of agro-pastoral products, and an organization will be formed to support the development of agro-pastoral products, thereby building a system that can provide products that appeal to urban residents and tourists in Mongolia.

**(2) Outline of each action plan**

No.	Action Plan	Summary of Activities	Implementing Agency	Development Indicators	Baseline	Expected Result	Project period	Project cost (Million MNT)	Consistency with National Policies
11.1	Action Plan on developing institutional system to support industrial clusters	<ul style="list-style-type: none"> <li>Institutionalize industrial clusters, which until now have not had a clear institutional basis, and establish a support system for the industrial clusters that have been formed.</li> <li>Establish a mechanism to support joint marketing and other initiatives in international markets conducted under private sector's initiatives.</li> </ul>	MOFALI SMEA MED	Existence of institution	Non-existent	Exists	2025 –2034	9,031	Vision 2050 4.2.20
11.2	Action Plan on strengthening industry-academia collaboration to improve market competitiveness	<ul style="list-style-type: none"> <li>Assign industry-academia collaboration coordinators to universities and research institutions related to agro-pastoral sector to strengthen matching and collaboration between industry and academia.</li> </ul>	MOFALI SMEA	Existence of institution	Non-existent	Exists	2025 - 2030	1,906	Vision 2050 4.2.20
11.3	Action Plan on promoting One Village, One Product (OVOP) movement	<ul style="list-style-type: none"> <li>To promote and raise awareness of the OVOP concept in order to revitalize the production and sales of specialty agricultural and pastoral products in rural areas.</li> <li>By establishing a brand committee to certify local agro-pastoral brands and forming an organization to support product development of agro-pastoral products, a system will be established to provide products that can appeal to urban residents and tourists in Mongolia.</li> </ul>	MOFALI SMEA MED	Number of provinces that have initiated the OVOP Movement	0	22	2025 - 2034	1,090	Vision 2050 4.2.20

## 4. Implementation Structure of Each Development Program

### 4.1 Implementation Mechanism for Each Development Program

In general, the development issues related to agro-pastoral value chains are diverse. Issues related to a series of value chains, such as production, processing, distribution, marketing, and export of a single commodity, are currently handled by the departments in charge of each chain. For example, the Department of Coordination of Agricultural Policy Implementation is in charge of issues related to vegetable production, while Department of Food Industry Policy Implementation Coordination is in charge of the distribution and marketing of vegetables and their safety as food products. However, because policy formulations and public investment plans in the agricultural and pastoral sectors are made by individual departments, it is difficult to identify priorities and take measures based on a cross-sectional view of issues related to value chain development for specific commodities. Therefore, the Department of Policy and Planning, which has a diverse staff in charge of agriculture, livestock, light industry, food safety, industrial development, and cooperative development, is also involved in the coordination and priority setting of each policy among the sectors. For operational simplification of the implementation of this Master Plan, the existing policy-planning flow will be followed. Specifically, the following provisions are made.

- All development programs are under the jurisdiction of one of the following departments: the Department of Coordination of Agricultural Policy Implementation, Department of Animal Husbandry Policy Implementation Coordination, Department of Light Industry Policy Implementation Coordination, and Department of Food Industry Policy Implementation Coordination.
- Each development program will be administered by the department that has the greatest affinity for the contents of the action plans that comprise the program (specifically, the target commodities and characteristics of the development issues).
- When cross-sectoral or cross-ministry measures are required in policy formulation for a development program, the Department of Policy Planning will take the lead in coordination, to determine the roles of stakeholders and implementation priorities.

Additionally, the Department of Finance and Investment will take responsibility for budget management tied to policies compiled by the Department of Policy Planning. The Department of Monitoring, Evaluation, and Internal Audit will monitor each development program that is made into policy, and conduct policy evaluations based on development indicators. While policy formulation and budgeting will be conducted by MOFALI, the local offices under MOFALI will take the lead in policy implementation.

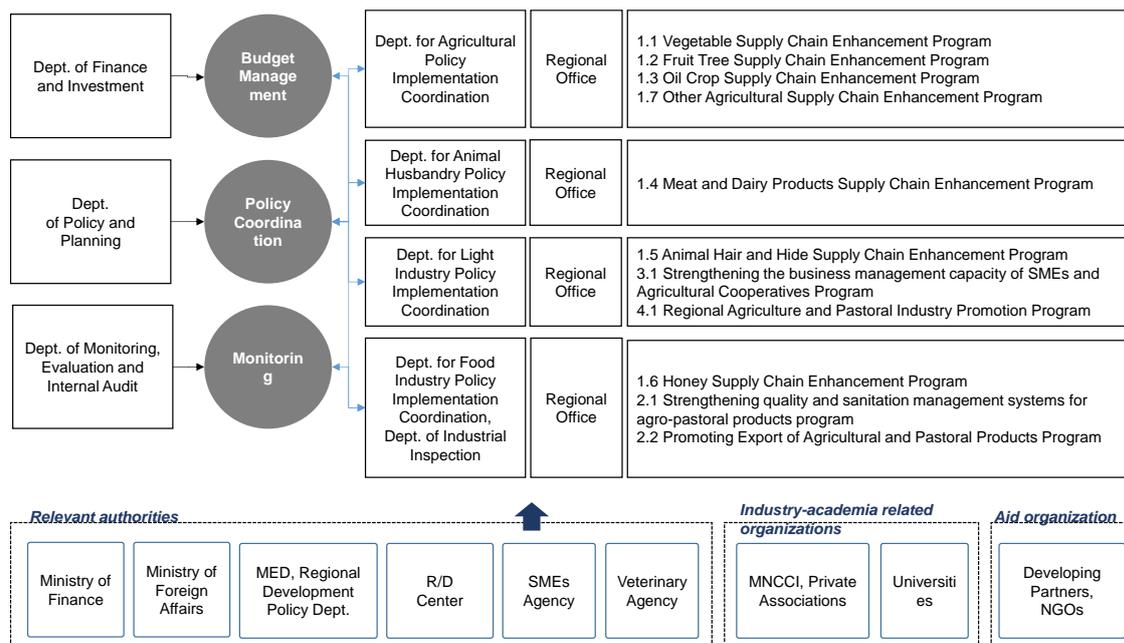


Figure 4.1 Jurisdictional organization and management structure for each development program

Source: JICA Project Team

## 4.2 Priorities of Action Plans

In the process of preparing this Master Plan, workshops were held for officers of the relevant development programs to identify the priorities of the action plans for each department, using the Analytic Hierarchy Process (Table 4.1). As shown in the results, 12 action plans were selected as the top three priority plans for each responsible department at the time of formulating this Master Plan; however, it should be noted that these are action plans that are deemed to be prioritized from the perspective of each policymaker. During the budgeting process, it is necessary for the Department of Policy Planning to make adjustments in terms of the priority of each action plan, considering consistency with higher-level national plans and requests from private companies and organizations.

Table 4.1 Priorities for Each Action Plan

Development Program	Action Plan	Degree of relative priority	Priority plan
<b>Dept. for Agricultural Policy Implementation Coordination</b>			
• 1. Vegetable Supply Chain Enhancement Program	1-1. Action Plan on expanding vegetable supply period through the introduction of excellent seeds and forcing cultivation	2.593	✓
• 1. Vegetable Supply Chain Enhancement Program	1-2. Action Plan on promoting market-oriented agriculture	2.221	
• 1. Vegetable Supply Chain Enhancement Program	1-3. Action Plan on establishing agricultural products distribution system by agricultural cooperatives	2.395	✓
• 1. Vegetable Supply Chain Enhancement Program	1-4. Action Plan on implementing various training and awareness-raising activities related to simple vegetable processing and consumption	2.127	
• 2. Fruit Supply Chain Enhancement Program	2-1. Action Plan on strengthening the supply chain based on the Fruit Tree Seedling Center	2.266	
• 2. Fruit Supply Chain Enhancement Program	2-2. Action Plan on disseminating appropriate cultivation techniques	2.366	
• 2. Fruit Supply Chain Enhancement Program	2-3. Action Plan on promoting export of sea buckthorn products	2.524	✓
• 3. Oil Crop Supply Chain Enhancement Program	3-1. Action Plan on strengthening of domestic production of rapeseeds	2.264	
• 3. Oil Crop Supply Chain Enhancement Program	3-2. Action Plan on rapeseed production technology development and production support	2.329	
• 3. Oil Crop Supply Chain Enhancement Program	3-3. Action Plan on improving trading system of rapeseeds	2.077	
• 3. Oil Crop Supply Chain Enhancement Program	3-4. Action Plan on increasing consumption of rapeseed oil	2.025	

Development Program	Action Plan	Degree of relative priority	Priority plan
•7. Other Agricultural Supply Chain Enhancement Program	7-1. Action Plan on promoting research and dissemination of mushroom production technology	2.312	
•7. Other Agricultural Supply Chain Enhancement Program	7-2. Action Plan on establishing national standards for mushroom production	2.132	
•7. Other Agricultural Supply Chain Enhancement Program	7-3. Action Plan on enlightening of mushroom consumption	2.188	
•7. Other Agricultural Supply Chain Enhancement Program	7-4. Action Plan on developing fish processing facilities aimed at promoting fish diets	2.065	
<b>Dept. for Animal Husbandry Policy Implementation Coordination</b>			
•4. Meat and Dairy Supply Chain Enhancement Program	4-1. Action Plan on establishing a system for livestock breed improvement	3.000	✓
•4. Meat and Dairy Supply Chain Enhancement Program	4-2. Action Plan on promoting younger livestock fattening business	2.661	✓
•4. Meat and Dairy Supply Chain Enhancement Program	4-3. Action Plan on introducing meat grading system based on market needs	1.577	
•4. Meat and Dairy Supply Chain Enhancement Program	4-4. Action Plan on slaughterhouse modernization	2.068	✓
•4. Meat and Dairy Supply Chain Enhancement Program	4-5. Action Plan on promoting pet food business by using by-products from livestock	1.277	
•4. Meat and Dairy Supply Chain Enhancement Program	4-6. Action Plan on improving quality raw milk collection system	1.039	
<b>Dept. for Light Industry Policy Implementation Coordination</b>			
•5. Animal Hair and Hide Supply Chain Enhancement Program	5-2. Action Plan on strengthening the supply chain of raw wool, cashmere, and raw hides based on the herders' cooperatives	2.433	✓
•5. Animal Hair and Hide Supply Chain Enhancement Program	5-3. Action Plan on establishing a sustainable textile and leather production system	2.303	
•5. Animal Hair and Hide Supply Chain Enhancement Program	5-4. Action Plan on developing industrial cluster in textile sector	2.433	✓
•10. Strengthening the business management capacity of SMEs and Agricultural Cooperatives Program	10-1. Action Plan on preparatory study to introduce value chain financing system	2.275	
•10. Strengthening the business management capacity of SMEs and Agricultural Cooperatives Program	10-2. Action Plan on preparatory study to introduce warehouse receipt system	2.065	
•10. Strengthening the business management capacity of SMEs and Agricultural Cooperatives Program	10-3. Action Plan on strengthening business management capacity of SMEs	2.325	
•10. Strengthening the business management capacity of SMEs and Agricultural Cooperatives Program	10-4. Action Plan on strengthening the business management capacity of agricultural cooperatives	2.422	✓
•11. Regional Agriculture and Pastoral Industry Promotion Program	11-1. Action Plan on developing institutional system to support industrial clusters	2.236	
•11. Regional Agriculture and Pastoral Industry Promotion Program	11-2. Action Plan on strengthening industry-academia collaboration to improve market competitiveness	2.201	
•11. Regional Agriculture and Pastoral Industry Promotion Program	11-3. Action Plan on promoting One Village, One Product movement	2.322	
<b>Dept. for Food Industry Policy Implementation Coordination, Dept. of Industrial Inspection</b>			
•6. Honey Supply Chain Enhancement Program	6-1. Action Plan on developing capacity of beekeeping veterinarians and technology for pest and disease-resistant beekeeping	2.193	
•6. Honey Supply Chain Enhancement Program	6-2. Action Plan on strengthening market competitiveness of honey products through the introduction of proper quality assurance system	2.022	
•6. Honey Supply Chain Enhancement Program	6-3. Action Plan on promoting honey exports through honey cluster strengthening	2.171	
•6. Honey Supply Chain Enhancement Program	6-4. Action Plan on promoting beekeeping industry in collaboration with other industries	1.967	
•8. Strengthening quality and sanitation management systems for agro-pastoral products program	8-1. Action Plan on strengthening the capacity of food safety administration	2.459	✓
•8. Strengthening quality and sanitation management systems for agro-pastoral products program	8-2. Action Plan on strengthening export inspection capacities	2.077	
•8. Strengthening quality and sanitation management systems for agro-pastoral products program	8-3. Action Plan on preparatory survey for post-harvest reduction	2.270	✓
•8. Strengthening quality and sanitation management systems for agro-pastoral products program	8-4. Action Plan on training human resources in sanitation and quality control	2.280	✓
•8. Strengthening quality and sanitation management systems for agro-pastoral products program	8-5. Action Plan on strengthening export competitiveness through acquisition of international certification	2.183	
•9. Promoting Export of Agricultural and Pastoral Products Program	9-1. Action Plan on optimizing trade procedures	2.226	
•9. Promoting Export of Agricultural and Pastoral Products Program	9-2. Action Plan on strengthening trade negotiation capabilities	2.114	
•9. Promoting Export of Agricultural and Pastoral Products Program	9-3. Action Plan on strengthening export support	2.248	

Source: JICA Project Team

# THE PROJECT FOR FORMULATION OF MASTER PLAN ON THE AGRICULTURAL VALUE CHAIN IN MONGOLIA

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## Abbreviation

Abbreviation	English
ADB	Asian Development Bank
A/P	Action Plan
BSE	Bovine Spongiform Encephalopathy
CAC	Codex Alimentarius Commission
C/P	Counterpart
EAEU	Eurasian Economic Union
EC	Electronic Commerce
EPA	Economic Partnership Agreement
EU	European Union
EU-TRAM	Trade Related Assistance for Mongolia
FADPG	Food and Agriculture Development Partner Group
FAO	Food and Agriculture Organization
FMD	Foot-and-mouth disease
GAP	Good Agricultural Practices
GASI	General Agency for Specialized Investigation
GAVS	General Authority of Veterinary Services
GDP	Gross Domestic Product
GHP	Good Hygiene Practices
GMP	Good Manufacturing Practice

<b>Abbreviation</b>	<b>English</b>
GVP	Good Veterinary Practice
HACCP	Hazard Analysis Critical Control Point
IFC	International Finance Corporation
ISO	International Organization for Standardization
ITC	International Trade Centre
IVM	Institute of Veterinary Medicine
JETRO	Japan External Trade Organization
JICA	Japan International Cooperation Agency
JPY	Japanese Yen
LPI	Logistics Performance Index
MASM	Mongolian Agency for Standardization and Metrology
MED	Ministry of Economy Development
MNAS	Mongolian National Authority for Accreditation
MNCCI	Mongolian National Chamber of Commerce and Industry
MNT	Mongolian Tugrug
MNS	Mongolian National Standard
MONET	Ministry of Nature, Environment and Tourism
MOF	Ministry of Finance
MOFA	Ministry of Foreign Affairs
MOFALI	Ministry of Food, Agriculture and Light Industry
MOH	Ministry of Health
MONMAP-AVC	Project For Formulation of Master Plan on the Agricultural Value Chain in Mongolia
M/P	Master Plan
NAMAC	National Association of Mongolia Agricultural Cooperatives
NGO	Non-Governmental Organization
OEM	Original Equipment Manufacturer
OIE	Office International des Epizooties
OJT	On the Job Training
OVOP	One Village One Product
PA	Pilot Activity
RCA	Revealed Comparative Advantage
SCVL	State Central Veterinary Laboratory
SDC	Swiss Agency for Development and Cooperation
SDGs	Sustainable Development Goals
SHEP	Smallholder Horticulture Empowerment & Promotion
SPS	Sanitary and Phytosanitary Measures
TBT	Technical Barriers to Trade

<b>Abbreviation</b>	<b>English</b>
TMREL	Theoretical minimum risk exposure level
TOR	Terms of References
TOT	Training of Trainer
UNDP	United Nations Development Programme
UNIDO	United Nations Industrial Development Organization
UPOV	International Union for the Protection of New Varieties of Plants
USD	United States Dollar
VC	Value Chain
WB	World Bank
WTO	World Trade Organization

**Currency Conversion Rate (as of November 1, 2023)**

	<b>MNT</b>	<b>USD</b>	<b>JPY</b>
<b>1MNT=</b>		0.00038	0.05737
<b>1USD=</b>	2,620		150.708
<b>1JPY=</b>	17.3825	0.00663	

Source: OANDA

# Chapter 1. Master Plan for Agro-Pastoral Value Chain Development

## 1.1 Background and Objectives of Master Plan Preparation

The agro-pastoral industry in Mongolia is the country's key industry, accounting for about 12.8% (in 2022) of Gross Domestic Product (GDP), second only to the mining industry, with about 30% of the working population engaged in this industry. In the manufacturing industry, the food and textile processing sectors accounted for approximately 22% of the total manufacturing industry sales in 2022. In recent years, Mongolia has aimed to move away from an economic base dependent on mineral resources. The agro-pastoral industry has attracted attention as a sector that will play a major role in the country's industrial diversification. However, in the livestock sector, the concentration of livestock in peri-urban areas, overgrazing due to an increase in the number of animals, grassland degradation, damage from snow (Dzud), and inadequate measures against infectious diseases such as foot-and-mouth disease have been pointed out as problems. In the agricultural sector, national policies have led to an increase in the planted area and subsequent harvests, and the domestic self-sufficiency rate is improving; however, a stable production/supply system for the cold season has not been fully developed. In processing and distribution, low levels of processing technology, inadequate logistics networks, including cold chains, and a lack of quality and sanitation management that meet international standards are obstacles, and the sector is not yet sufficiently competitive. Therefore, the Ministry of Food, Agriculture, and Light Industry (MOFALI) and the Ministry of Economic Development (MED) in collaboration, have developed a strategic agro-pastoral value chain plan that considers regional characteristics. The Japanese government was requested to cooperate in formulating a Master Plan (M/P) for the strategic promotion of the agro-pastoral value chain (VC).

## 1.2 Positioning of the Master Plan

This M/P is related to "Vision 2050", a long-term development plan of Mongolia, and "Five-Year Basic Development Policy" and "Government Action Plan", which are medium-term development plans. Therefore, while referring to "Vision 2050" as a long-term development perspective for the agro-pastoral sector, the policies and contents of the plan will be reflected in the "Five-Year Basic Development Policy" and "Government Action Plan" in the medium-term. On June 27, 2022, the Mongolian government approved Decision No. 36 of the National Assembly titled "Some Measures and Initiatives for the Establishment of Food Supply and Security". This Decision established specific development policies and plans for Mongolia's food supply and security, with a planning period of 2022-2026. This M/P has been prepared in accordance with the development policies and plans set forth in the Decision.

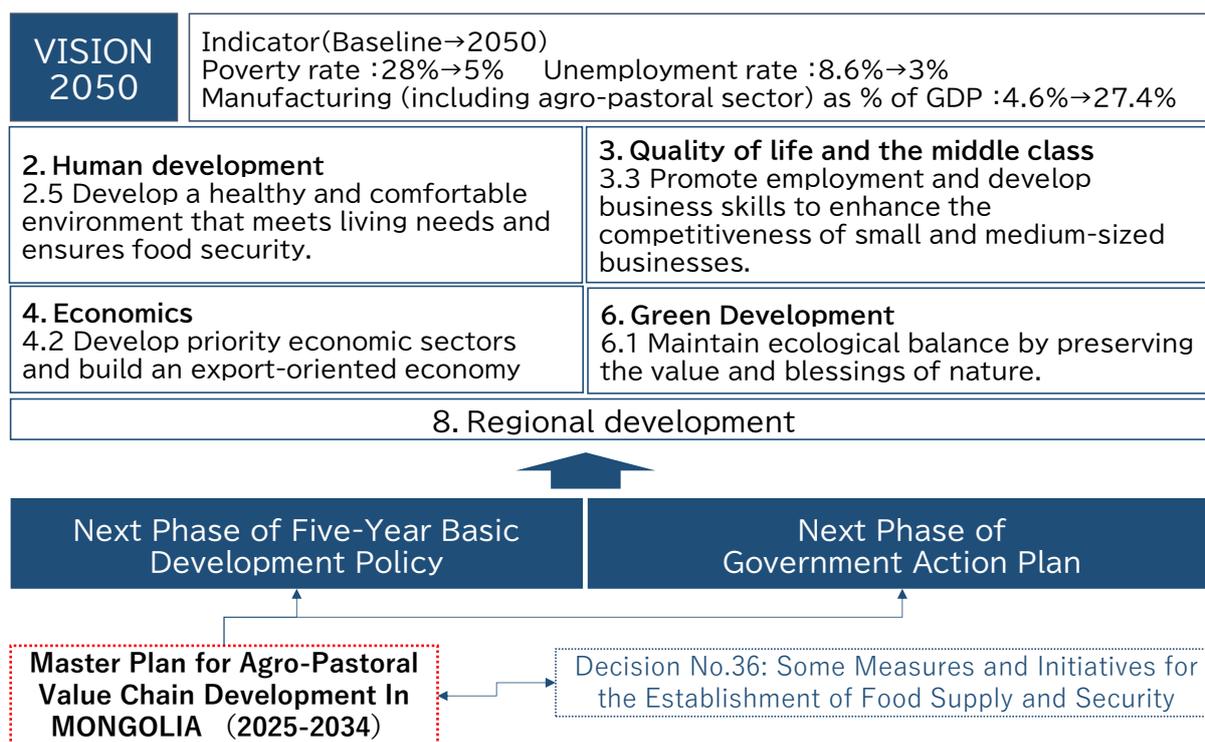


Figure 1.1 Positioning of the M/P

Source : JICA Project Team

### 1.3 Target area and period

This M/P is applicable to all of Mongolia. The target period is 10 years, from 2025 to 2034.

### 1.4 Composition of the Master Plan

This M/P consists of the following components.

Table 1.1 Composition of the M/P

Chapter	Title	Outline
Chapter 1	Master Plan for Agro-Pastoral Value Chain Development	This chapter describes the background to the preparation of this M/P, along with the current status of the agro-pastoral industry in Mongolia. It also presents the positioning of this M/P in relation to the national development policies and plans currently being formulated and implemented by the Mongolian government.
Chapter 2	Outlook for Agro-Pastoral Value Chain Development	This chapter summarizes the natural and socio-economic conditions in Mongolia. The major agricultural and livestock products in Mongolia and those with potential for development are discussed, and the current status and challenges of the supply chain and the direction of development are detailed for each product. Other perspectives required for agro-pastoral value chain development are also detailed by sector (trade, quality and sanitation, financial system, etc.).
Chapter 3	Development Strategy of the Mongolian Agro-Pastoral Industry	This chapter reviews the development of the agro-pastoral industry in Mongolia to date, analyzes the current situation, and discusses the basic concept of agro-pastoral value chain development. It also presents four development policies that should be prioritized in order to realize this concept.
Chapter 4	Agro-Pastoral Value Chain Development Program	This chapter presents a total of 11 programs and 43 Action Plans (A/P) devised based on the development strategies established in Chapter 3. Each A/P includes the issues to be addressed, project goals, project period, organizations in charge of the project, and project budget.
Chapter	Implementation	This chapter describes the implementation framework for the M/P. It presents the

Chapter	Title	Outline
5	Structure of Each Development Program	development indicators, implementation and monitoring systems, as well as the schedule and implementation costs for achieving the goals of each A/P. The implementation structure is based on the principle that MOFALI will play a central role in coordinating with relevant government agencies and developing partners, while the implementation costs will be shared between the government and the private sector.
Chapter 6	Conclusion and Recommendations	This chapter summarizes the main points of the M/P and provides recommendations for the realization of strategic Mongolian agro-pastoral value chain promotion.

Source : JICA Project Team

## Chapter 2. Outlook for Agro-Pastoral Value Chain Development

### 2.1 Socio-economic and Environmental Situation in Mongolia

#### 2.1.1 Economy

##### (1) Economic growth and contribution of the agro-pastoral sector

Mongolia is rich in mineral resources such as copper and coal, which are in high demand. Since the beginning of the 2000s, the mining sector has grown rapidly due to increased demand from China and other neighboring countries, and GDP per capita has increased accordingly (approximately 520 USD in 2000 to 4,280 USD in 2012<sup>1</sup>). However, the decade from 2012 to 2021 has not seen significant economic growth due to a global decline in mineral prices experienced in 2015-2016 and impact of the new coronavirus in 2020 (Figure 2.1). The share of the agro-pastoral sector's value addition to the GDP<sup>2</sup> has generally remained stable over the past decade. The current economic structure of Mongolia is heavily dependent on the mining industry, while the contribution of the agricultural sector has remained almost unchanged, over the past decade. To diversify and stabilize the Mongolian economy, it is essential to increase the contribution of the agro-pastoral sector.

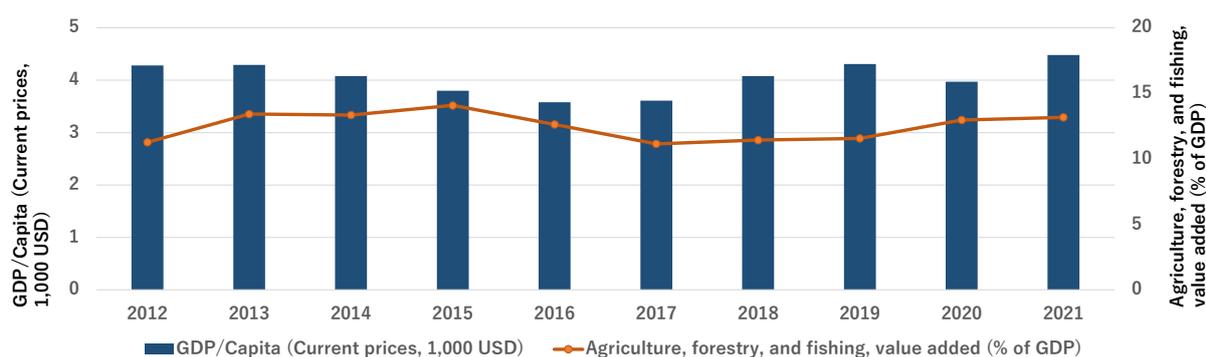


Figure 2.1 GDP per capita in Mongolia (1,000 USD) and agricultural sector value added (% of GDP)

Source : JICA Project team using data of World Bank (<https://databank.worldbank.org/reports.aspx?source=2&country=MNG#>)

##### (2) Scales of domestic and international market

To increase the contribution of the agro-pastoral sector to the economy, it is necessary to increase the share of Mongolian agricultural products in domestic and international markets. The population of Mongolia was approximately 3.4 million in 2022 and is estimated to increase to 4.51 million by 2050. However, the Mongolian market is extremely small compared to its neighbors, China (1,411 million in 2022) and Russia (145 million in 2022) (Figure 2.2). East Asia, including China, has the largest population in the world and is projected to decline by 2050; however, it remains a huge market. In other regions, the populations of Southeast and West Asia are expected to increase to approximately 800 million and 400 million, respectively,

<sup>1</sup> IMF (<https://www.imf.org/en/Countries/MNG#countrydata>)

<sup>2</sup> Agriculture and Pastoral Sector Value Added (% of GDP)" is an indicator of the contribution of agriculture, forestry, and fisheries to a country's economy. Value added here refers to the total economic output generated by these sectors minus the value of intermediate inputs such as raw materials purchased from other sectors.

by 2050 (Figure 2.3). While Mongolia must meet the food demand of its growing population from the perspective of food security and increase the contribution of the agro-pastoral sector to its economy, improving the competitiveness of Mongolian agro-pastoral products in the international market is crucial. In addition to the Chinese and Russian markets, Mongolian agro-pastoral products should also focus on Southeast and West Asian countries, where the market is expanding annually, by creating products that appeal to the needs of these countries. Competitiveness in the international market requires creating attractive products but is also dependent on other factors, such as trade negotiations and agreements between countries, speeding up export procedures, ensuring the safety and quality of commercial products, and establishing a logistics infrastructure that enables timely deliveries, all of which need to be improved individually. The above discussion is accepted as a matter of course by those involved in the agro-pastoral industry in Mongolia. However, in preparing this M/P, it is necessary to reaffirm the current situation of the Mongolian agro-pastoral industry while considering how to overcome these issues.

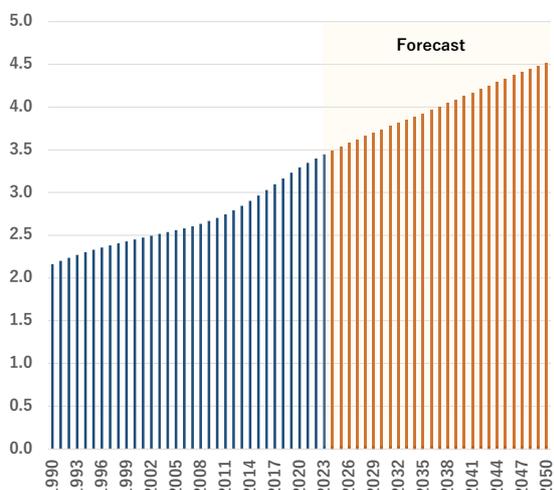


Figure 2.2 Mongolian population trends and projections (Million persons)

Source : UN Data Portal (2023)

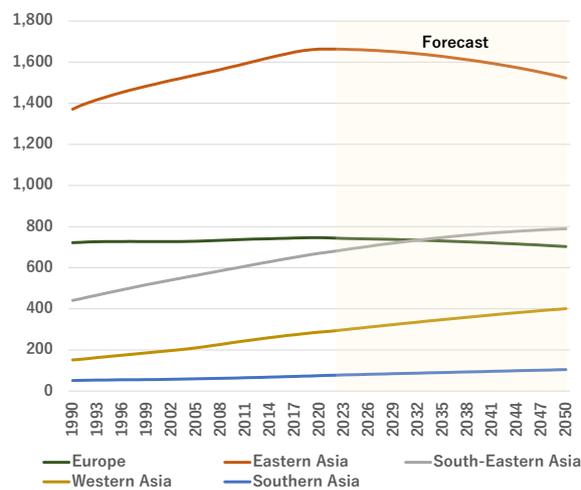


Figure 2.3 Population trends and projections by region (Million persons)

Source : UN Data Portal (2023)

### (3) Changing international market needs

Efforts to accurately identify international market needs and promote products reflecting these needs are extremely important for the country to develop its agro-pastoral sector. Currently, international market needs are strongly driven in one major direction: the demand for "green" products represented by terms such as sustainability and conservation. This shift in consumer purchasing behavior, known as ethical consumption<sup>3</sup> in Western countries and Japan, is a global trend, with the number of consumers searching for "sustainable products" increasing by 71% from 2016 to 2021. This shift in consumer awareness is expected to grow further in Asia, especially in India, Pakistan, and Indonesia<sup>4</sup>. The shift in global consumer purchasing behavior has also strongly influenced the investment criteria of individual investors: The IBM Institute for Business Value reported that 65% of individual investors surveyed expected to earn more financial returns by investing in

<sup>3</sup> Consumption activities in which each consumer considers the resolution of social issues for himself/herself and supports businesses that address such issues.

<sup>4</sup> The Economist, 2021, An Eco-wakening, Measuring global awareness, engagement and action for nature

companies that are more sustainable and environmentally conscious than those that are not<sup>5</sup>. It should be recognized that the value attached to a product is no longer limited to existing measures, such as safety, security, quality, price, and functionality, but also involves a new indicator: sustainability. Mongolia urgently needs to support its product manufacturing bearing this aspect in mind.

## 2.1.2 Society

### (1) Population distribution in Mongolia

As Mongolia has transitioned to a market economy, urbanization has progressed and many people have moved to the capital city of Ulaanbaatar in search of work, education, and medical care. In 2003, the residents of Ulaanbaatar accounted for 40% of the total population, but by 2022, this figure had increased to 49% (Figure 2.4). An examination of the percentages of urban and rural residents shows that the rural population has remained virtually unchanged over the past 20 years, and only the urban population has increased (Figure 2.5). The rapid urbanization and population concentration in Ulaanbaatar, has highlighted the lack of social infrastructure and poor living conditions in the area, causing various problems such as frequent traffic jams, air pollution, and the expansion of Ger areas with unsanitary conditions<sup>6</sup>. Therefore, the Mongolian government aims to improve the urban environment of Ulaanbaatar and disperse the population inflow by 1) improving Ulaanbaatar's urban infrastructure, 2) developing a regional core city, and 3) revitalizing local industries.

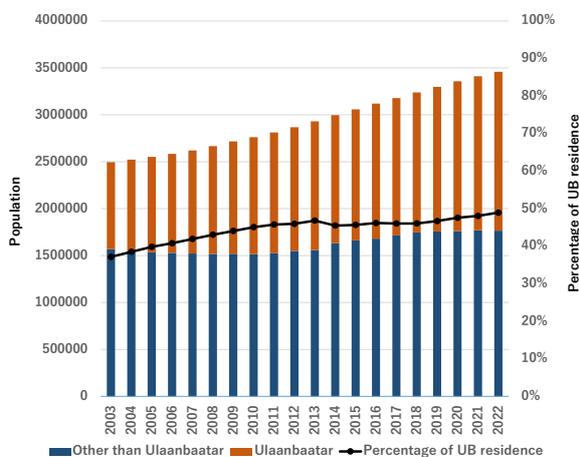


Figure 2.4 Ulaanbaatar residents as % of total population

Source : NSO Mongolian Statistical Yearbook 2022

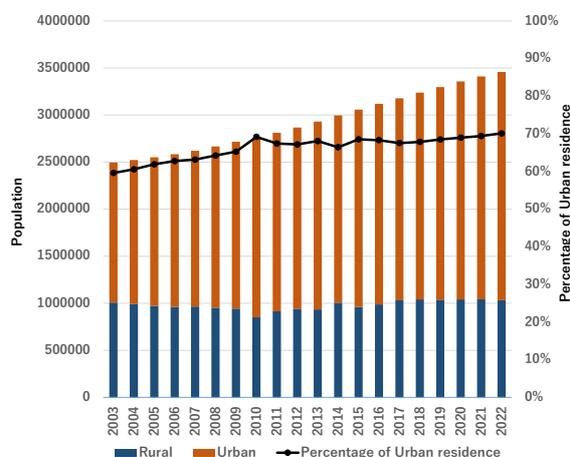


Figure 2.5 Percentage of urban and rural residents

Source : NSO Mongolian Statistical Yearbook 2022

On the other hand, from the perspective of the agro-pastoral sector, the concentration of the population in urban areas, including Ulaanbaatar, and the formation of a market of a certain scale have led to the widespread development of supermarket chains operated by major retailers, which in turn has created a need to establish new food supply chains, specifically, a new production and supply system for agro-pastoral products that can standardize, ensure food safety, and ship products in a timely manner. This is especially true in Ulaanbaatar,

<sup>5</sup> IBM Institute for Business Value, 2022, Balancing sustainability and profitability

<sup>6</sup> ADB, 2022, URBAN SECTOR FACT SHEET

but it is possible that similar changes will occur in regional hub cities.

## **(2) Farmers and Herders**

Agriculture developed on a large scale during the socialist era and, by the 1980s, production was large enough to be exported abroad<sup>7</sup>. However, after the transition to a market economy, agricultural production switched to meet market demand rather than centrally planned production, and the ease of importing food led to the abandonment of farmlands and a sharp decline in cultivated areas. However, in the Mongolian government's recent policies (the 1st-3rd Agricultural Reconstruction Plan), the cultivated area is approaching the level of the planned economy period; in 2021, it reached 678,232 ha, which is the highest value since the transition to a market economy. However, the number of agricultural producers and people practicing agriculture remained generally unchanged from 2014 to 2021, indicating that the cultivated area per producer has increased (Figure 2.6). Although cultivated areas are expected to expand against the backdrop of food demand from the growing population, it is essential to secure water resources and deal with the mechanization of agriculture.

The number of livestock in the socialist era ranged from approximately 20 to 25 million<sup>8</sup>. However, after the transition to a market economy, livestock herds that had been the property of the state were returned to the property of herders, and the sale and purchase of livestock were left to the discretion of each herder household. Due to strong inflation in Mongolia in the early 1990s, many nomads refrained from selling their livestock, accumulating them as savings. The total number of livestock has tripled since the collapse of socialism less than 30 years ago, despite two catastrophic losses of 20-30% of the herd due to dzud damage. The number of livestock continues to increase and is expected to reach 71.12 million by 2022. On the other hand, the number of herders managing livestock has remained stable over the past decade, and the number of livestock per herder has increased by 67%, from 158 to 233 heads per person (Figure 2.7). According to a Mongolian Commodity Exchange report<sup>9</sup>, before the transition to a market economy, the number of livestock per herder was approximately 50 heads/person, indicating a sharp increase in the burden of livestock rearing on herders. Herders do not have the labor to manage livestock herds as they did under socialism. This has led to a decline in the quality of livestock materials (animal hair, hides, and meat) and the spread of disease, making it urgent to improve productivity per livestock.

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<sup>7</sup> “History of Agricultural Development in Mongolia” Yuki Konagaya, 2010, National Museum of Ethnology Research Report 35 (1): 9- 138.

<sup>8</sup> Humphrey, C. 1978. Pastoral nomadism in Mongolia: the role of herdsmen’s cooperatives in the national economy. *Development and Change* 9: 133-160.

<sup>9</sup> Mongolian Commodity Exchange. 2021. Presentation slide on model soum development project.

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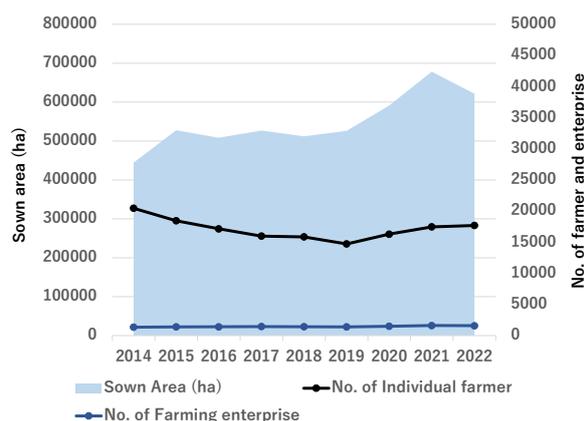


Figure 2.6 Total cultivated area and number of farmers and agricultural enterprises in Mongolia  
Source : NSO Mongolian Statistical Yearbook 2022

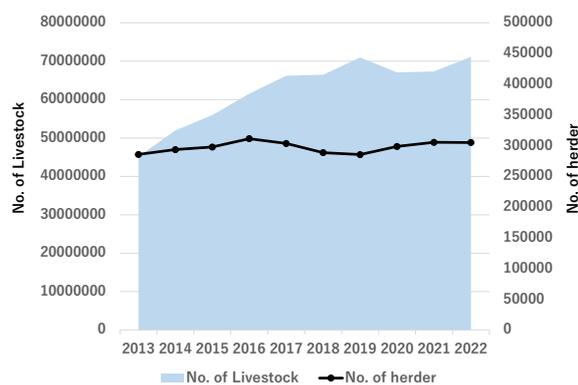


Figure 2.7 Total number of livestock and herders in Mongolia  
Source : NSO Mongolian Statistical Yearbook 2022

### 2.1.3 Logistics infrastructure

The export of agro-pastoral products is an important part of the development of the agro-pastoral sector in Mongolia, and one of the foundations for facilitating this is logistics infrastructure. As a landlocked country, Mongolia has limited air and land logistics, with road and rail being its main modes of transport. For air transportation, there are 18 airports in Mongolia. Genghis Khan International Airport, which is accessible from Ulaanbaatar, was constructed and opened in 2021 with a yen loan from the Japanese government's Official Development Assistance. Asian Highway No. 2 connects China, Ulaanbaatar, and Russia, and Asian Highway No. 4 connects China and Russia via Khovt. In addition, Asian Highway 32, connecting Ulaanbaatar and Khovt, opened in 2020. In addition to the north-south extension of Asian Highway 2, a railroad line connects Choibaisan in Dornod aimag to Borzya in Russia. The second and third Mongolia-China railroad lines were scheduled to have opened in 2022, connecting Tavantolgoi to Gashuunsukhait and Zuunbayan to Khang<sup>10</sup>. Furthermore, the Erdenet-Artssuuri route<sup>11</sup>, which connects Erdenet to the Russian border from east to west, is currently under construction<sup>11</sup>. From a broad perspective, it is of primary importance to utilize distribution routes to the two giant markets of China and Russia. The Mongolian government is rapidly developing east-west and north-south overland routes, while asphalt-paved roads are limited to the suburbs of Ulaanbaatar, and most of the trunk roads connecting aimag and soum are gravel roads. In addition, railroad line standards differ between Mongolia and China, and transshipment of cargo to the relevant line is required at the transit port<sup>12</sup>.

<sup>10</sup> <https://www.railjournal.com/freight/mongolia-opens-third-railway-to-chinese-border/>

<sup>11</sup> Ministry of Road and Transport Development, 2018, Transport Strategy of Mongolia

<sup>12</sup> World Bank, 2019, Mongolia Central Economic Corridor Assessment

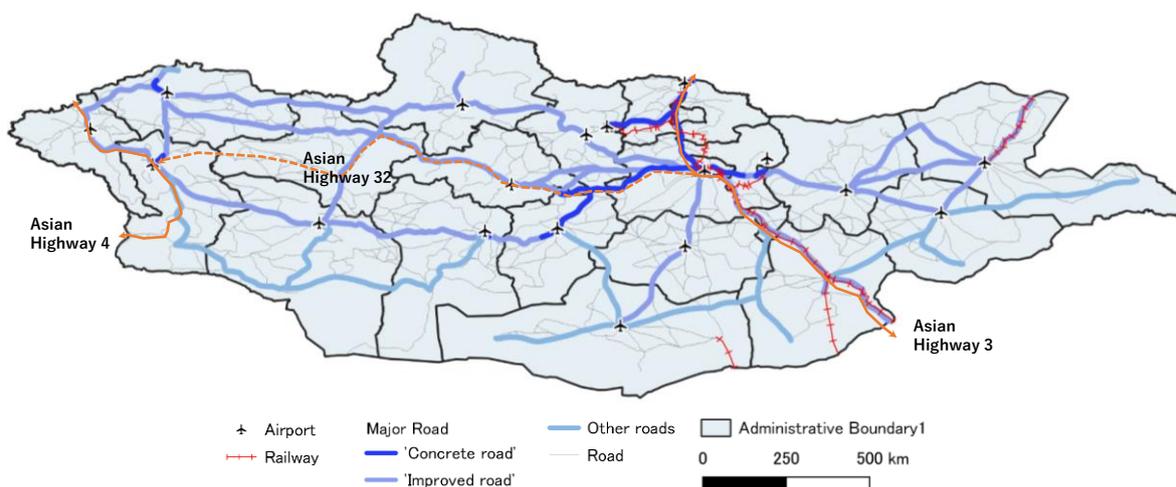


Figure 2.8 Transportation network in Mongolia

Source : JICA Project team using data of The Humanitarian Data Exchange

In logistics, not only infrastructure facilities, but also the functionality and speed of logistics services and procedures are important. According to the Logistics Performance Index (LPI)<sup>13</sup> published by the World Bank, Mongolia's global ranking increased from 135th in 2014 to 97th in 2023. However, in reality, the country's LPI score only increased by 0.1, with particularly low scores in logistics infrastructure, and logistics service (provider) capacity and quality. While the Mongolian government is steadily improving its logistics infrastructure, the overall logistics reliability is far from satisfactory and is a major impediment to the export of agro-pastoral products.

Table 2.1 Logistics performance index in Mongolia

	Rank	Score	Customs score	Infra-structure score	International shipments score	Logistics competence and quality score	Timeliness score	Tracking and tracing score
2014	135	2.4	2.2	2.3	2.6	2.3	2.5	2.1
2018	130	2.4	2.2	2.1	2.5	2.2	3.1	2.1
2023	97	2.5	2.5	2.3	2.5	2.3	2.7	2.4

Source : World Bank, The Logistics Performance Index and Its Indicators

## 2.1.4 Natural environment

### (1) Climate

Climate is the most limiting factor for the agro-pastoral industry in Mongolia. Farming is possible only from April to September, except for cultivation in greenhouse facilities. Another important factor for the livestock industry is the frequent mass mortality of livestock due to cold weather (dzud), especially from December to January when temperatures drop significantly. International aid organizations provide various types of assistance, including the establishment of greenhouses and harvest storage facilities for agriculture, early warning systems for weather-related disasters, and production and storage of animal feed for herders<sup>14</sup>.

<sup>13</sup> An index released every two years by the World Bank that measures each country's performance in logistics. The LPI is the average of six items evaluated on a five-point scale: (1) customs clearance, (2) infrastructure, (3) cost, (4) quality, (5) tracing, and (6) timeliness.

<sup>14</sup> Examples include the introduction of an SMS early warning system by Mersy Corp, and the development of agricultural storage facilities by the Swiss Development Agency (SDC) and ADB.

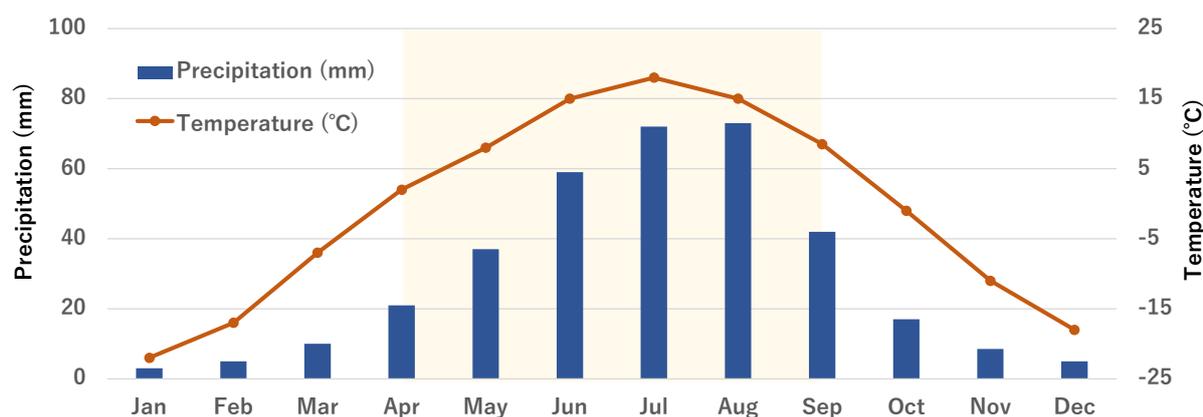


Figure 2.9 Average annual precipitation and temperature in Mongolia (Ulaanbaatar)

Source : JICA Project team using data of Climate-data.org

## (2) Pastureland

Bordered by Russia to the north and China to the south, Mongolia is landlocked with an area of 1,564,000 km<sup>2</sup>. Mongolia is approximately four times the size of Japan and is said to have 80% natural grassland, which has been used as a natural resource to nurture a nomadic culture for thousands of years. Mongolia is perceived as a "country of grasslands," but from the perspective of the agro-pastoral sector, the country has the following characteristics in terms of its livestock industry: Mongolia has the world's largest proportion of pastureland to total land area<sup>15</sup>, and is the only country in the world with nomadic pastureland and almost no reliance on grain-based feed. This differs from the sedentary and grain-fed intensive livestock production in Australia, New Zealand, Botswana, and Namibia. While this keeps feed costs low in the livestock industry, it is also vulnerable to dependence on pastures for the majority of livestock feed. The transition to a market economy and private ownership of livestock since 1992 have not only accelerated an increase in the number of livestock but have also brought about rapid changes in the spatial distribution of livestock that has been maintained for many years. This includes changes in livestock composition and the concentration of nomads in certain areas, with adverse effects on grassland ecosystems. In particular, an increase in the number of goats used for cashmere production has resulted in increased grassland degradation<sup>16</sup>. Figure 2.10 shows the change in the amount of vegetation biomass in Mongolia (comparison between 1982-1996 and 1997-2012), which indicates that the amount of vegetation biomass has decreased, except in some areas. The sustainability of grazing lands is the foundation of the livestock industry in Mongolia, and the impact of grazing land degradation must be faced directly, as "sustainability" itself is linked to the added value of livestock products.

<sup>15</sup> Miaki N. 1995a. Mongolia - The nomadic world (3): diverse vegetation supporting nomadism. *Journal of Livestock* 49: 834-838.

<sup>16</sup> Ministry of the Environment, Mongolia, Sustainable use and management of grassland by nomadic herders

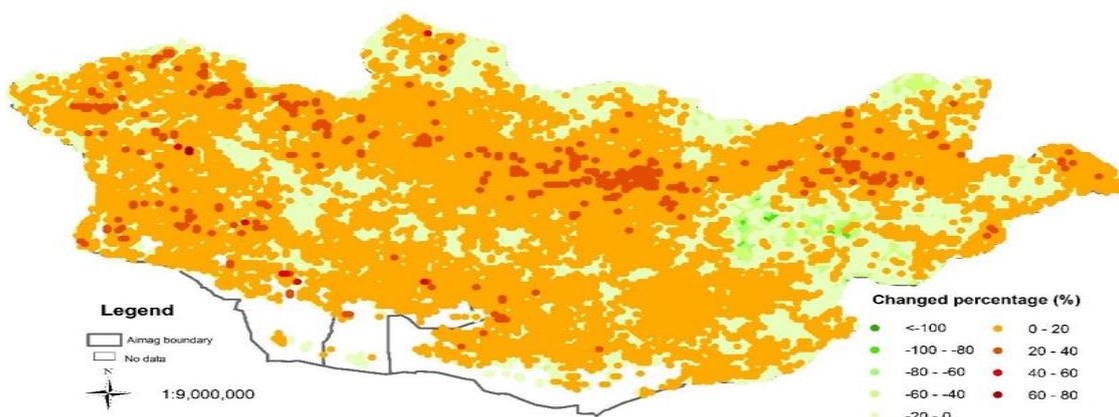


Figure 2.10 Change in average biomass from 1982-1996 to 1997-2012

Source : Mongolian Economic Research Institute, 2017, Pastureland Degradation and Livestock Taxation

### (3) Climate change

It is essential to consider the impacts of climate change on the future of agricultural and livestock industries in Mongolia. As shown in Table 2.2, many researchers and international organizations have made future projections of climate change in Mongolia. Despite differences in projections, the following impacts are generally considered, and mitigation measures should be applied accordingly.

- Temperatures may gradually increase, and precipitation may increase. While this may benefit agricultural production, it also increases the probability of drought due to increased evapotranspiration. Mitigation measures include the construction of reservoirs and the application of water-saving technologies such as drip irrigation.
- The number of areas unsuitable for grazing will gradually increase, and desertification is expected to progress. In addition, the probability of dzud outbreaks during winter will gradually increase. Mitigation measures include grass production and storage in summer, and the introduction of an early warning system for Dzud for herders.

Table 2.2 Future projections for the impacts of climate change in Mongolia

	Climate change	Impact on the agro-pastoral industry
Batjargal (2013)*	<ul style="list-style-type: none"> <li>• Increase in dry, hot summer periods and winter periods with increased snowfall.</li> <li>• Increased evapotranspiration exceeding increased precipitation</li> <li>• Doubling of the probability of drought by 2080</li> </ul>	<ul style="list-style-type: none"> <li>• Unsuitable areas for grazing will increase from 40% to 70% by 2050.</li> <li>• Climate change results in significant impediments to the development of the livestock industry, and these impediments will increase significantly over the next 80 years.</li> </ul>
JICA (2021)**	<ul style="list-style-type: none"> <li>• The potential for drought will expand in the southern, central, and eastern parts of the country.</li> <li>• Increased temperatures due to climate change will reduce snow cover across Mongolia around 2100, creating a risk of reduced snowmelt in spring and summer.</li> <li>• The probability of Dzud will decrease, but the risk of Dzud will not disappear in the southern, central, and eastern parts of the country.</li> <li>• Maximum monthly summer precipitation will increase in Ulaanbaatar, Altai, and Sainshand,</li> </ul>	

	Climate change	Impact on the agro-pastoral industry
	increasing the risk of flooding.	
Global Program on Climate Resilient Economic Development (2023)***	<ul style="list-style-type: none"> <li>• Temperature increase of 1.5°C~5.5°C by the end of the 21st century. This rate of increase is large compared to the world average.</li> <li>• Precipitation will increase by 8~14% by the end of the 21st century. Snowfall will also increase by 50-75%. Precipitation will increase, but evapotranspiration will also increase due to global warming.</li> <li>• Probability of drought and Dzud will increase. The probability of Dzud increases by 40% by the end of the 21st century.</li> </ul>	<ul style="list-style-type: none"> <li>• Increased temperatures may have a positive impact on agricultural production.</li> <li>• However, it is expected that there will likely be negative impacts as a result due to a decrease in available water, reduced soil fertility, reduced pasture productivity, and increased desertification.</li> </ul>

\* Noboru Fujita, Satoshi Kato, Eiichi Kusano, Ryosuke Koda (2013), Mongolia~ Collapse and regeneration of grassland ecosystem network~, \*\* JICA (2021), Project for Formulation of National Comprehensive Development Plan Final Report, \*\*\* Global Programme on Climate Resilient Economic Development (CRED) (2023), Economy-wide impacts of climate change and adaptation in Mongolia

## 2.1.5 Development plan and legislative system

### (1) Related development plans

Mongolia has a long-term development strategy, "Vision 2050," and based on this strategy, a medium-term plan, "Five-Year Development Policy" and "Government Action Plan" are formulated every five years. Recently however, as an exceptional measure, Resolution No. 36 of the National Assembly, entitled "Measures to Ensure Food Supply and Safety" has been approved. This provides institutional revisions in the agro-pastoral sector, a management system for policy implementation, and development directions and achievement targets related to agriculture, livestock, and food processing (Table 2.3). The resolution emphasizes on improving food safety and sanitation management systems, seen as an important measure to dispel public concerns about food and promote exports of domestically produced food products. The Mongolian government is rapidly reorganizing its system for food safety and sanitation management, including the dismantling of the General Agency for Specialized Investigation (GASI). However, concrete measures to establish food safety and thereby expand exports, continue to be a matter requiring further consideration, and is a theme that is deeply related to the contents of this M/P.

Table 2.3 Outline of resolution No. 36

Theme	Outline
1) Legal Environment	(1) Creation of laws and regulations to reduce dependence on imports and promote exports, (2) Development of various systems for food safety management (food standards, operation of traceability systems, etc.), and (3) Strengthening of subsidy provision and incentive programs in the food, agricultural and pastoral, and light industry sectors, etc.
2) Implementation and Management System	(1) Ensure compliance with standards and technical regulations in the pastoral, agricultural, food processing, storage, transportation, marketing, and food service industries, (2) Reorganize structures involved in food safety and strengthen management and inspection systems, (3) Improve the quality of education in universities and vocational training in the agricultural and pastoral sectors, train specialized personnel, and increase research budgets for universities and research institutions.
3) Agricultural Industry	(1) Expansion of farmland area, (2) Establishment of seed supply centers, (3) Increase in feed crop production, (4) Increase in greenhouse facilities, (5) Start of studies on establishment of domestic fertilizer production bases, (6) Promotion of stockpile storage facilities, (7) Cluster development to support supply chain actors' activities (Agro Park concept), (8) "Billion Tree" movement, etc.
4) Livestock Industry	(1) Adjusting the appropriate ratio of the number and type of livestock according to pasture-raising capacity and improving productivity per livestock, (2) Supporting the establishment and organization of model pastoral cooperatives, (3) Promoting intensive livestock farming and beekeeping, (4) strengthening veterinary laboratory services, etc.

Theme	Outline
5) Food Processing	(1) Promotion of domestic processing of raw materials that can be procured domestically and establishment of a financial support system for the establishment of processing plants for skimmed milk powder, etc.; (2) Promotion of domestic production of food packaging materials; (3) Establishment of a regulatory system for functional foods; (4) Revision of food safety standards and strengthening of quarantine stations and food laboratory facilities; (5) Implementation of training, advertising, and educational activities regarding proper diet and food use.

Source : JICA Project Team using data of resolution No. 36

## (2) Newly issued and revised legislation

The following is a summary of the legal and institutional changes that are expected to have a significant impact on the agro-pastoral sector in the future. The Seed Law was revised for the first time, 20 years after its effect in 1999, and new provisions have been established for protection of the intellectual property rights of plant varieties. Mongolia is in the process of joining the International Union for the Protection of New Varieties of Plants (UPOV)<sup>17</sup>. Moreover, as a result of the addition of provisions related to seed trade and the import/export of seeds, the Mongolian government now has a legal basis for establishing a national subsidy system for imported seeds of vegetables and other crops. Consequently, subsidies for vegetable seeds began in 2022. The Cooperative Law was revised for the first time since its enactment in 1998, expanding the rights of cooperatives and establishing their legal status to receive loans from banks and other institutions. The Livestock Tax Law, enacted in 2020, requires that tax be paid per head of livestock, and is expected to effectively curb the yearly increase in the number of livestock. The changes and possibilities that the revision and promulgation of these laws will bring to farmers and herders, should be given special attention in the preparation of the M/P.

Table 2.4 Legislation issued or revised in recent years in the agro-pastoral sector

Law	Outline
Seed law	Revised October 29, 2021. In addition to seed trade and import/export of seeds, there are new provisions for plant variety protection, etc., which now allow for the recognition of breeder's rights for plant varieties.
Cooperative law	Revised May 6, 2021. The rights of cooperatives were expanded to allow them to own, use, manage, transfer, rent, lease, or encumber movable and immovable property within the limits of the law. Loans and donations from citizens and corporations may be accepted, provided that they do not adversely affect the cooperative's operations. A Cooperative Development Fund was established and the Small and Medium Enterprise Agency was given jurisdiction over it.
Livestock tax law	Promulgated on November 13, 2020. This law regulates the taxation of the number of livestock in Mongolia. The amount of tax levied per head of livestock in a tax year ranges from 0-2000 MNT, and the unit amount of tax is determined for each soum. The use of the collected funds is also determined for each soum, but is limited to the use specified by law (e.g., for the introduction of superior breeds of livestock and other activities that contribute to the pastoral activities).

Source : JICA Project team using data of <https://legalinfo.mn/mn>

## 2.2 Overall Picture of the Mongolian Agro-pastoral Industry and Regional Characteristics

### 2.2.1 Agriculture

Agriculture developed on a large scale during the socialist era in the 1980s, and production was sufficiently large to be exported overseas<sup>18</sup>. The area under cultivation of agricultural crops has decreased significantly

<sup>17</sup> <https://www.upov.int/export/sites/upov/members/en/pdf/status.pdf>

<sup>18</sup> History of Agricultural Development in Mongolia," Yuki Konagaya, 2010, National Museum of Ethnology Research Report 35 (1): 9- 138.

from a peak of 837,868 ha in 1989, to 316,388 ha in 2010. However, in recent years, it has been on the rise, reaching 621,622 ha in 2022. Thus, arable agriculture has declined significantly since the transition to a market economy but has recently recovered through the Third Crop Rehabilitation Campaign and is approaching the level of the planned economy period<sup>19</sup>.

Figure 2.11 shows the spatial distribution of cultivated land in 2022. Most cultivated land is concentrated in central and northern Mongolia, but this distribution is largely due to climatic conditions. North-central Mongolia experiences relatively high precipitation and a large number of rainy days, and the average annual temperature is moderate. For example, the average annual precipitation in Selenge aimag is 284 mm, and the temperature is -22.6°C in January and 20.1°C in July. In contrast, the south-central region has relatively high temperatures but very little precipitation, making rainfed agriculture difficult.

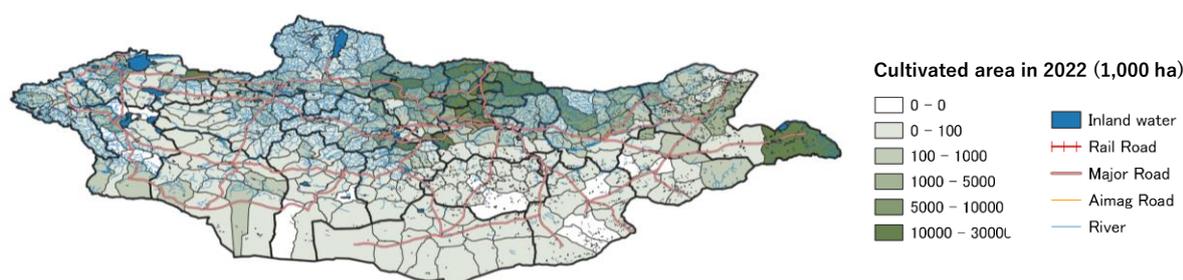


Figure 2.11 Spatial distribution of cultivated area (2022)

Source : JICA Project Team using data of NSO Mongolian Statistical Yearbook 2022

Figure 2.12 shows the spatial distribution of the cultivated areas of the major crops. Wheat is the most widely cultivated crop in Mongolia, with its distribution concentrated in central and northern regions. In this area, large-scale cultivation is conducted by agricultural corporations, and almost all farming operations are mechanized. Oilseed rape (not shown in the figure), which is cultivated as a rotation crop for wheat, tended to be distributed in the same manner. As for fruit tree production, berries are relatively common, with sea buckthorn accounting for approximately 90%. Sea buckthorn production is also flourishing in western Mongolia, especially in Uvs aimag, and in 2022, with the support of the German Chamber of Commerce and Industry, Uvs sea buckthorn has obtained EU Geographical Indication protection certification<sup>20</sup>. Potatoes and vegetables tend to be cultivated in the north-central part of the country, whereas other regions also cultivate on a small scale, unlike wheat and fruit trees. The distribution of cultivated areas of grass showed a similar trend (not shown in the figure), suggesting that these crops are widely cultivated on a small scale for private consumption and sale in nearby markets, in addition to large-scale cultivation in the north-central region.

<sup>19</sup> Hiroshi Komiyama (2016) *Agro-pastoralism in the Drylands of Northeast Asia: Focusing on Mongolia*, New Developments in International Regional Development, Tsukuba Shobo, 55-69

<sup>20</sup> <https://www.mongolchamber.mn/a/858>

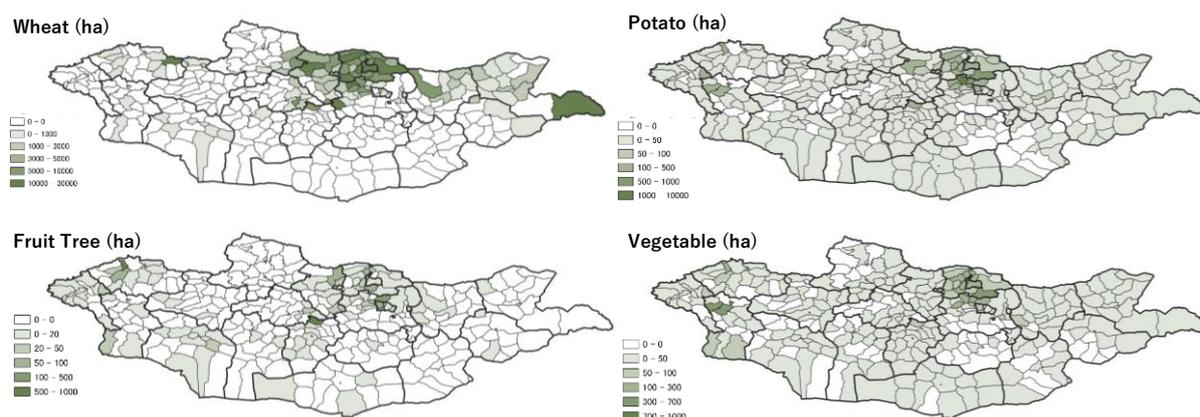


Figure 2.12 Spatial distribution of cultivated area of each major crop (2022)

Source : JICA Project Team using data of NSO Mongolian Statistical Yearbook 2022

Mongolian staple foods include meat, raw milk, and dairy products from livestock. Under socialism, arable agriculture developed and wheat became a widespread and major food product. Therefore, meat, dairy products, and wheat tended to be consumed at higher levels (Table 2.5). Subsequently, due to changes in dietary habits resulting from the shift to a market economy, vegetable consumption has increased in recent years. In particular, the consumption of vegetables in urban areas is approximately 50% higher than in rural areas. However, the consumption of meat and dairy products in urban areas is approximately 30% lower than that in rural areas, and approximately 50% lower for dairy products, indicating a marked difference in dietary habits between urban and rural areas<sup>21</sup>.

Table 2.5 Annual per capita consumption of agricultural products (2013-2022)

Commodities	Consumption Rate (kg/person/year)									
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Flour& bakery	121.2	127.2	126.0	122.4	122.4	121.2	121.2	123.6	115.2	110.4
Rice	21.6	22.8	21.6	21.6	21.6	21.6	22.8	22.8	21.6	22.8
Sugar	16.8	15.6	9.6	8.4	9.6	13.2	13.2	14.4	12.0	10.8
Potato	38.4	36.0	33.6	33.6	32.4	31.2	31.2	32.4	28.8	31.2
Vegetables	24.0	25.2	24.0	22.8	22.8	22.8	25.2	26.4	25.2	25.2
Fruits	8.4	9.6	8.4	7.2	7.2	7.2	7.2	7.2	6.0	7.2
Vegetable oil	6.0	6.0	6.0	6.0	6.0	4.8	6.0	6.0	4.8	4.8

Source : NSO Mongolian Statistical Yearbook 2022

### 2.2.2 Livestock production

Mongolia has almost 80% natural grassland; the nomadic culture that utilizes this as a natural resource has been nurtured for thousands of years. The constitution of the country is unique in stating that “livestock herds are the wealth of the people and are protected by the state,” and does not allow private ownership of grasslands. The cornerstones of Mongolian livestock farming are the five herds of livestock suitable for nomadic pastoralism: horses, cattle, sheep, goats, and camels, customarily referred to as the Five Mongolian livestock<sup>22</sup>. The main livestock products – meat, milk, wool, cashmere, and hides – are derived from these

<sup>21</sup> NSO Mongolian Statistical Yearbook 2019, p129

<sup>22</sup> In Mongolia, these five livestock are treated as representative livestock, and in statistical data, the total number of livestock is often treated without distinction. However, since the feed requirements of each animal are different, the "sheep equivalent" is sometimes used to represent other livestock in terms of head of sheep. In general, horses = 7 head, cattle = 6

five livestock. Of these, meat and milk, in particular, are staple products that support the national economy as well as the Mongolian people; their consumption is prominent in the Asian region. As shown in Table 2.6, the average daily consumption is high: more than double for meat and nearly triple for dairy products, compared to the average for the Asian region. In many developing countries, consumption of dairy and meat products tends to increase in response to rising incomes; however, in Mongolia, the consumption rate of livestock products has traditionally been high<sup>23</sup>. Also, as noted, urban areas with higher incomes and wealthier populations consume less meat and dairy products than rural areas<sup>24</sup>.

Table 2.6 Consumption of meat and dairy products in Asia (g/day/person)

Item	Mongolia	Asia	Japan	China	Korea
Meat	190	80	130	150	150
Dairy Products	400	140	210	80	70

Source : Nishino, Kusano (2013)<sup>25</sup>

Since the collapse of socialism, Mongolia's livestock population has truly exploded, exceeding 70 million for the first time in 2019. This change, expressed as a specific rate of increase, averaged 4.2% per year over the past 30 years. The global average for the same period was 0.7%, and the figure for the socialist years was 0.5%; this clearly shows rapid livestock population increase over a short period of time<sup>26</sup>. However, this increasing trend is not observed in all of the five Mongolian livestock breeds. The most notable increases occurred in sheep and goats, and the increase in goats, in particular, has been tremendous. During the socialist era, as well as in traditional Mongolian nomadic herding, the numbers of cattle, sheep, goats, horses and camels (the five livestock) were maintained at a ratio of 1:1:7:3:0.5, which was considered ideal for herd management<sup>27</sup>. However, this balance has been greatly disrupted. The most significant factor is cashmere. Cashmere is the animal hair of cashmere goats raised in frigid zones and is popular as a luxury material because it is extremely pleasant to touch and has excellent heat-retention properties. However, only few countries and regions produce cashmere. Mongolia, along with China, is one of the world's leading producers of raw cashmere and is the most important source of cash income for herders. It is one of the most important pastoral exports from the nation. The price of cashmere is strongly influenced not by the domestic but by the international market, and producer prices are also influenced. Only one of the five livestock species that has been on a downward trend is the camel, a phenomenon that is indicative of modernization sweeping over the traditional nomadic country. Although camels can be milked, their hair is highly prized, and they are eventually used for meat, their primary purpose for herders is as service animals or "vehicles" for transporting household goods. However, herders' families now own more real vehicles<sup>28</sup>, and the need to maintain camels

head, goats = 0.9 head, and camels = 5 head.

<sup>23</sup> Nishino, Izuru and Eiichi Kusano. 2013. Collapse and Regeneration of Mongolian Grassland Ecosystem Networks. Kyoto University Press.

<sup>24</sup> Nishino, Izuru and Eiichi Kusano. 2013.

<sup>25</sup> Nishino, Izuru and Eiichi Kusano. 2013.

<sup>26</sup> Calculated from FAOSTAT and Mongolian Statistical Yearbook.

<sup>27</sup> Of particular importance is the ratio of sheep to goats. These small and medium ruminants, especially goats, are less sensitive to cold than larger animals such as horses, cattle, and camels. For this reason, it is considered appropriate for goats to be kept together with sheep, which are protected from the cold by wool, as a wintering measure. In this case, a 2:1 ratio of sheep to goats is considered appropriate. (Humphrey, C. 1978. Op. cit.).

<sup>28</sup> In recent years, this trend has become increasingly stronger, with the vehicle ownership rate rising from about 27.8% in 2010 to about 51.2% in 2019 (Mongolian Statistical Yearbook, 2019).

has decreased<sup>29</sup>.

With the exception of camels, all livestock species have continued to increase, a phenomenon based on the reproductive physiology of livestock. However, in general, it is impossible to plan for an increase in intensive livestock production based on the physiology of livestock. This is because of cost barriers to expanding the scale of livestock production, such as increased feed costs and the need to secure barns. One reason for Mongolia's rapid increase in the number of livestock is that it has almost no feed or facility management costs. The Mongolian pastoral industry relies on the natural grasslands that cover the country. Although the use of this grassland for arable agriculture is extremely limited owing to harsh weather conditions, it is an ideal environment for raising livestock, and the movement of livestock allows the grasslands to exist as such<sup>30</sup>. However, when the number of livestock per unit area is too large, overgrazing occurs, leading to grassland degradation. In fact, this situation is already evident all over Mongolia and is the most serious problem caused by the rapid increase in the number of livestock in recent years<sup>31</sup>.

However, grassland degradation is not uniform across Mongolia. This problem is more severe in areas with high livestock density. Figure 2.13 shows the total number of livestock and their distribution by species. Livestock is most concentrated in the central and northern areas of the country. This is because of the good quality and high yield of grass<sup>32</sup> and its relative proximity to large markets in the central region, including Ulaanbaatar<sup>33</sup>.

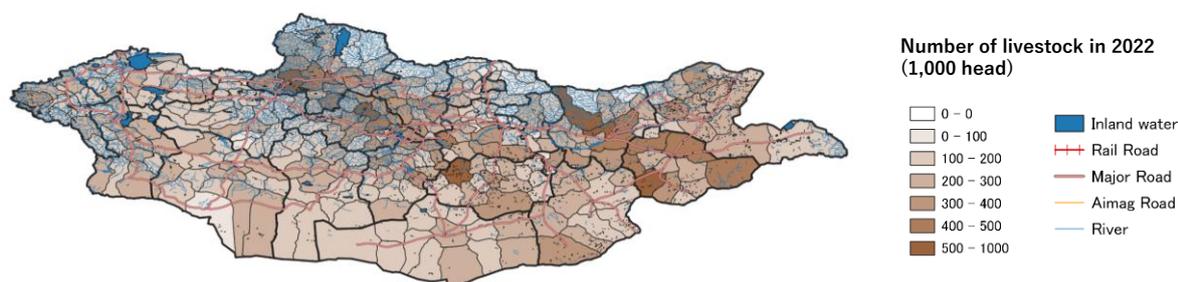


Figure 2.13 Spatial distribution of livestock numbers (2022)

Source : JICA Project Team using data of NSO Mongolian Statistical Yearbook 2022

Looking at individual livestock, the spatial distribution of horses, cattle, and sheep is similar to that of livestock as a whole, but for goats and camels, the distribution gradient of the number of animals is reversed, especially for camels (Figure 2.14). This indicates a relationship between the natural regional characteristics of Mongolia and the habits of these two types of livestock. Although the northern part of central Mongolia is a plateau and mountainous region with grasslands suitable for grazing, the southern part is adjacent to an arid region known as the Gobi Desert, which is unsuitable for grazing because of low grass yields and water

<sup>29</sup> Janzen, J. 2005. Mobile livestock-keeping in Mongolia: Present problems, spatial organization, interactions between mobile and sedentary population groups and perspectives for pastoral development. *Senri Ethnological Studies* **69**: 69-97.

<sup>30</sup> Humphrey, C. and Sneath, D. 1999. *The end of nomadism? : Society, state and the environment in Inner Asia*. Duke University Press, Durham, NC.; Loreau, M. 1995. Consumers as maximizers of matter and energy flow in ecosystems. *American Naturalist* **145**: 22-42.

<sup>31</sup> JICA. 2016. Information gathering survey on agro-pastoral industry in Mongolia.

<sup>32</sup> Miaki N. 1995b. Mongolia - The nomadic world (4): diverse vegetation supporting nomadism. *Journal of Livestock* **49**: 934-940.

<sup>33</sup> JICA. 2016. Information gathering survey on agro-pastoral industry in Mongolia.

availability. Therefore, among the five livestock species, the numbers of goats and camels that can tolerate poor diets and are efficient in water use, are high<sup>34</sup>.

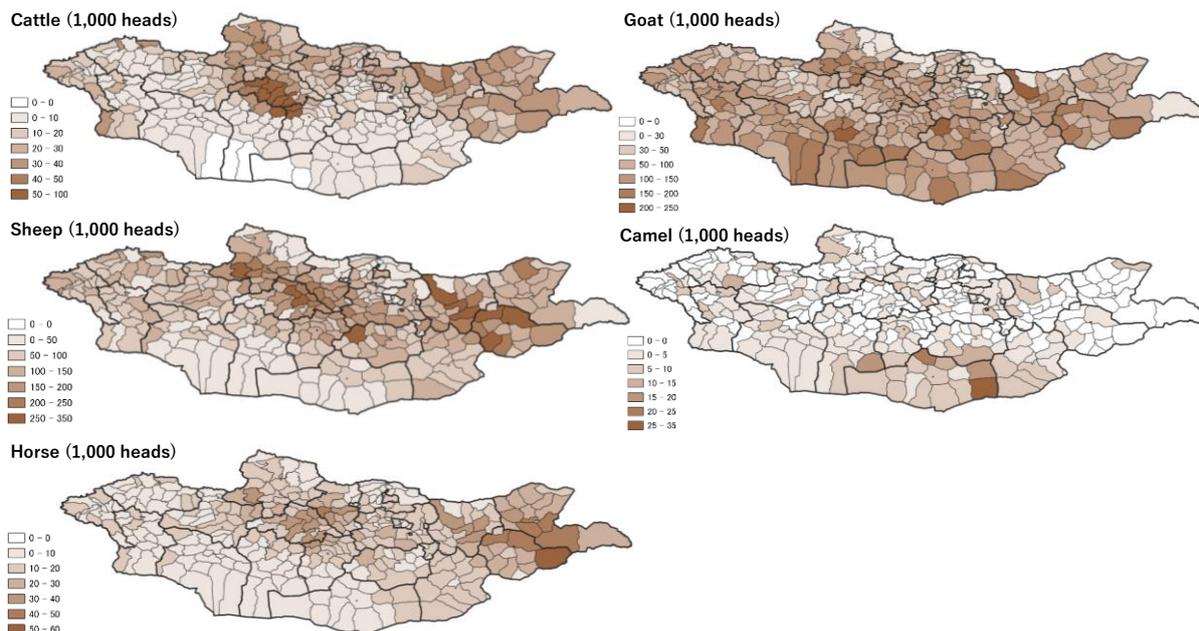


Figure 2.14 Spatial distribution of the five livestock (2022)

Source : JICA Project Team using data of NSO Mongolian Statistical Yearbook 2022

### 2.2.3 Agriculture related companies

Figure 2.15 shows the spatial distribution of agriculture-related enterprises. The number of agriculture-related enterprises was 11,354 in 2023, of which approximately 89% were engaged in the cultivation of annual crops such as wheat and vegetables. The distribution of these enterprises is similar to that of the cultivated areas of major crops and is concentrated in the north-central region of Mongolia. As of 2023, there were 16,559 manufacturing companies, with food manufacturing accounting for 33%, clothing manufacturing 12%, textile manufacturing 6%, and leather manufacturing about 4%<sup>35</sup>. These manufacturing enterprises are located in the vicinity of Ulaanbaatar, but they also tend to be located in the centers of densely populated aimags. These manufacturing enterprises are located in agro-pastoral raw-material concentration areas, which are the main hubs of the agro-pastoral supply chain.

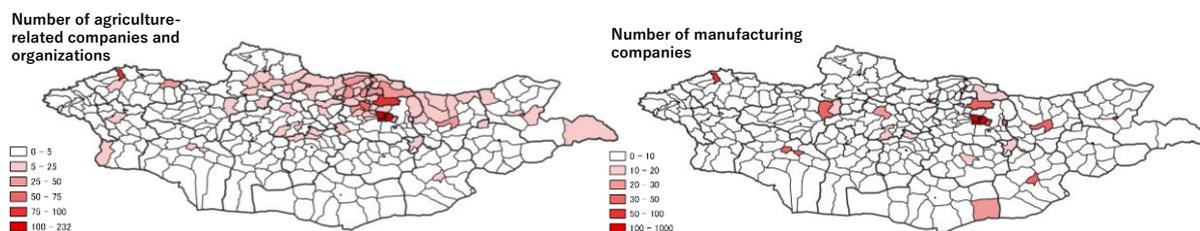


Figure 2.15 Spatial distribution of agricultural enterprises (2023)

Source : JICA Project Team using data of NSO Mongolian Statistical Yearbook 2022

<sup>34</sup> Mattiello, S. 2016. Husbandry practices and animal health *In* Non-bovine milk and milk production. Tsakalidu, E. and Papadimitriou, K. (eds.). Elsevier, UK.

<sup>35</sup> However, it should be noted that the number of agriculture-related companies and the number of manufacturing companies represent the actual number of registered companies, which is different from the number of "active" companies that are actually engaged in business activities.

## 2.3 Directions for the Development of Supply Chains for Major Agro-pastoral Products

### 2.3.1 Vegetables

#### (1) Current supply chain

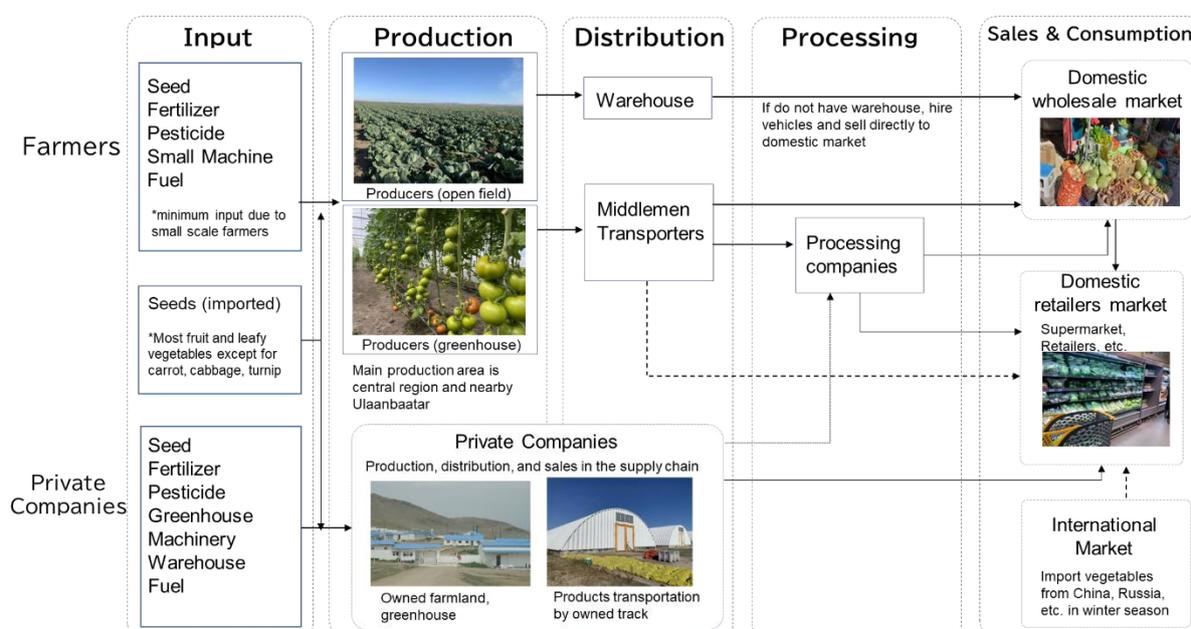


Figure 2.16 Vegetable supply chain in Mongolia

Source: JICA Project Team

The main vegetables in Mongolia are potatoes, carrots, cabbage, and turnips. However, in recent years, there has been an increase in the variety of onions, garlic, cucumbers, tomatoes, melons, and leafy vegetables, and both vegetable production and consumption have been increasing. As shown in

Table 2.7, the production of vegetables in 2022 was approximately 148,900 tons, and the main production area is the central region, which includes Selenge, Tuv, and Darkhan-Uul, accounting for more than 60% of the domestic production volume<sup>36</sup>.

Table 2.7 Major vegetable production (1,000 t)

Commodities	Thousand ton									
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Vegetables	101.8	104.8	72.3	94.4	82.1	100.7	99.5	121.2	121.7	148.9
cabbage	20.6	18.7	15.4	16.7	15.2	18.8	21.9	24.4	26.8	37.0
carrot	34.5	34.7	18.5	31.0	21.7	26.3	28.9	33.8	26.6	40.0
turnip	22.4	23.9	17.6	21.2	16.6	24.1	21.5	21.6	19.7	24.4
onion	9.3	9.4	6.7	10.0	12.1	14.1	9.5	11.4	20.4	17.3
garlic	1.0	1.0	0.7	0.7	0.4	0.5	0.8	1.4	1.5	1.6
cucumber	4.3	4.7	3.8	3.7	3.9	3.8	4.7	3.1	3.5	1.6
tomato	2.5	2.4	1.9	2.2	2.0	1.9	1.9	2.3	2.0	2.2
watermelon	5.4	6.3	6.5	7.2	8.8	9.6	9.1	10.2	10.5	8.6

Source: JICA Project Team based on the NSO Mongolian Statistical Yearbook 2022.

In recent years, middlemen, known as “changes,” have been increasingly involved in the distribution and

<sup>36</sup> NSO Mongolian Statistical Yearbook 2021

processing stage of vegetables. In the suburbs east and west of Ulaanbaatar, large 1,000-ton class warehouses with major changes have been established to store domestic and imported vegetables and fruits. Recently, the number of warehouses equipped with freezing and refrigeration equipment has increased. Regarding greenhouse vegetables, there are cases in which producers deal directly with supermarkets and retailers, and with processing companies, which is a new form of contract farming. However, vegetables grown outdoors are commonly traded between producers and the local changes.

The national average per capita monthly consumption of vegetables is 2.1 kg/person/month, with 2.5 kg/person/month in urban areas and 1.5 kg/person/month in rural areas<sup>37</sup>. Although significantly lower than the global average, the per capita consumption is on the rise, especially in urban areas.

## (2) Market situation

The production and import volumes of vegetables are shown in Figure 2.17; demand is notably increasing. Although the vegetable self-sufficiency rate fluctuated from one year to the next due to climatic changes, it has steadily increased from approximately 58% in 2012 to 65% in 2021. Meanwhile, the market is expected to expand in the future because of demographic trends and the aforementioned increase in per capita consumption. Therefore, domestic production measures for import substitution of vegetables are desirable.

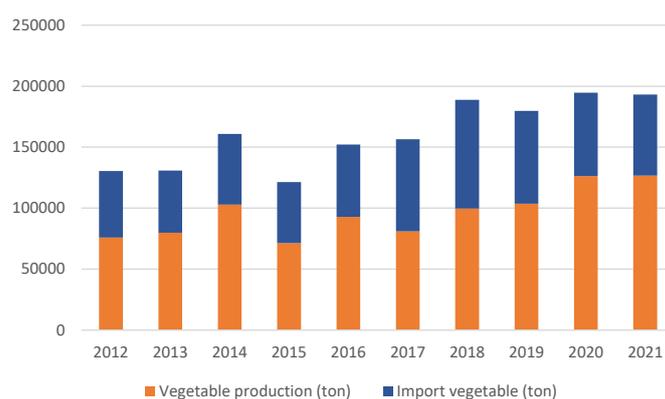


Figure 2.17 Change of vegetable production and import (2012-2021)

Source: JICA Project Team using data of NSO Mongolian Statistical Yearbook 2021

## (3) Issues and countermeasures

Table 2.6 shows the issues and countermeasures at each stage of the vegetable supply chain. The main issues are as follows: despite a need for domestically produced vegetables, production is unable to meet the demand, and self-sufficiency has not been achieved; production season is limited due to the cold continental climate with low rainfall, high production costs, high distribution costs, and low price competitiveness due to underdeveloped logistics; vegetable consumption is low compared to the world average; and the theoretical minimum risk exposure level (TMREL) is much lower than the world average, having a negative impact on health risk<sup>38</sup>. In addition, the government's per capita healthcare cost is expected to increase from 256 USD

<sup>37</sup> NSO Mongolian Statistical Yearbook 2021

<sup>38</sup> Theoretical minimum risk exposure level (TMREL) is the amount of intake that minimizes the risk of disease

in 2015 to 508 USD in 2040, suggesting a need for national efforts to improve people's dietary habits.

The measures taken to address these issues are presented in Table 2.8. The government, private sector, and donors have already implemented measures, such as subsidies for vegetables, support for winter cultivation, financing through public offerings by processing and manufacturing companies, and strengthening growers' organizations; these are steadily bearing fruit.

Table 2.8 Issues and countermeasures in the vegetable supply chain

	Issues	Countermeasures
Input	<ul style="list-style-type: none"> <li>• Dependence on imports for most agricultural inputs, including seeds</li> <li>• Poor seed production system for vegetables other than potatoes.</li> </ul>	<ul style="list-style-type: none"> <li>• Establish a domestic seed production and supply system for major vegetables.</li> </ul>
Production	<ul style="list-style-type: none"> <li>• High cost of cultivation and sales due to environmental conditions (cold climate, large tracts of land, etc.).</li> <li>• Insufficient organization of farmers</li> <li>• Weak agricultural extension system</li> </ul>	<ul style="list-style-type: none"> <li>• Policy on subsidies for vegetables</li> <li>• Promote organization of farmers into groups and cooperatives.</li> <li>• Improve agricultural extension system (staffing, budget allocation, etc.)</li> <li>• Promote efficient distribution and primary processing by organizing farmers into groups and cooperatives.</li> </ul>
Distribution /Processing	<ul style="list-style-type: none"> <li>• Inefficient and inadequately organized farmers</li> <li>• Most of the distribution is dependent on change (middleman).</li> <li>• Lack of storage facilities and high transportation costs</li> <li>• Difficulty in accessing financial services</li> </ul>	<ul style="list-style-type: none"> <li>• Promote market-oriented agriculture and contract farming based on market needs (actual consumers), not just change</li> <li>• Infrastructure development such as storage facilities, traffic networks, etc.</li> <li>• Processing and manufacturing companies raise funds through public offering of shares, etc.</li> </ul>
Sales/Consumption	<ul style="list-style-type: none"> <li>• Low per capita vegetable consumption</li> <li>• Imported vegetables such as those produced in China are distributed and sold during the winter season.</li> </ul>	<ul style="list-style-type: none"> <li>• Support for domestic vegetables and nutritional improvement</li> <li>• Support for greenhouse cultivation</li> </ul>

Source: JICA Project Team

#### (4) Direction of development

Figure 2.18 shows the direction of development of the entire supply chain, based on a cross-SWOT analysis. Broadly speaking, the direction of development from a broad perspective can be attributed to increasing vegetable production by promoting the introduction of inputs such as, subsidy programs and excellent seeds to meet demand, and improve profitability of farmers and companies by promoting farm management, contract farming, and strengthening farmer organizations, based on market needs.

Vegetable Supply Chain SWOT Analysis		External Environment	
		Opportunity	Threats
Internal environments	<p><b>Strong Point</b></p> <ul style="list-style-type: none"> <li>• A seed production system for potatoes and other major vegetables has been established.</li> <li>• The use of pesticides and herbicides is low, and vegetables are produced and shipped more safely than in neighboring countries.</li> <li>• Infrastructural facilities such as a public market and storages are being established in Ulaanbaatar.</li> <li>• Vegetable processing companies and association organizations exist.</li> <li>• Food safety systems such as Mongolian GAP are developed. There are domestic certification organization and relatively research and development organization.</li> </ul>	<p><b>Opportunity</b></p> <ul style="list-style-type: none"> <li>• Domestic demand for vegetables is on the rise, with the Ministry of Health promoting increased per capita consumption.</li> <li>• Population is increased continuously, and the population structure is dominated by young people.</li> <li>• Increased consumer awareness of food safety and other issues will also increase the need for domestic agricultural products.</li> <li>• Environmental conditions in summer are suitable for vegetable production.</li> <li>• Infrastructure to China and Russia is well developed.</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Production period is limited due to the cool continental climate. The impact of climate change is also a factor of concern.</li> <li>• Price competition with inexpensive Chinese and other imported vegetables is unrealistic.</li> <li>• Mongolia is landlocked country and sandwiched between China and Russia, two major agricultural countries.</li> </ul>
	<p><b>Weak Point</b></p> <ul style="list-style-type: none"> <li>• Dependence on imports for most agricultural inputs, including seeds. Access to inputs is difficult, especially in rural areas. Inadequate irrigation system in some areas.</li> <li>• Vegetable production is limited and unevenly distributed. High cost of winter greenhouse cultivation.</li> <li>• Insufficient organization of farmers.</li> <li>• Weak on agricultural extension system.</li> <li>• Dependence on “changes” for most of the distribution. Lack of storages and technology, and high transportation costs.</li> <li>• Difficulty in accessing financial services.</li> <li>• Lack of domestically produced ingredients and partial dependence on imports. Low processing plant utilization rate and high production costs.</li> </ul>	<p><b>Strong Point</b></p> <p><b>×Opportunity</b></p> <ul style="list-style-type: none"> <li>• The flow of import substitution is significant, and the import substitution will continue to be promoted through the continuation of the subsidy policy.</li> <li>• Promote the stimulation of domestic vegetable consumption and improvement of nutritional status through educational activities related to domestic vegetable consumption and the introduction of simple vegetable processing techniques.</li> </ul>	<p><b>Strong Point</b></p> <p><b>×Threats</b></p> <ul style="list-style-type: none"> <li>• Plan to establish an agricultural product distribution system by agricultural associations and support them.</li> <li>• Aim to improve the quality of domestically produced vegetables, including food safety, and to differentiate them from imported vegetables such as those produced in China.</li> </ul>
		<p><b>Weak Point</b></p> <p><b>×Opportunity</b></p> <ul style="list-style-type: none"> <li>• To expand vegetable production and supply period by promoting introducing excellent seeds and varieties from domestic and foreign countries, as well as techniques such as forcing cultivation.</li> <li>• To promote farmers' shift to market-oriented agriculture, and to stabilize and improve the profitability of agricultural management.</li> </ul>	<p><b>Weak Point</b></p> <p><b>×Threats</b></p> <ul style="list-style-type: none"> <li>• Plan to establish an agricultural products distribution system through agricultural associations.</li> <li>• Manufacturing companies and others will raise funds by offering stock.</li> <li>• The functions of agricultural exchanges and wholesale markets will be strengthened, and the distribution system will be improved to strengthen the supply chain.</li> </ul>

Figure 2.18 SWOT analysis of the vegetable supply chain

Source: JICA Project Team

## 2.3.2 Wheat and oilseeds

### (1) Current supply chain

Wheat is the largest crop in Mongolia, accounting for 394,000 of the 417,000 tons of grain produced in 2022. Selenge aimag has the largest area under cereal cultivation at approximately 137,000 ha, followed by Tuv and Bulgan aimags. In the southern region, where rainfall and aridity are low and high, respectively, crop cultivation is not actively implemented.

Farmers harvest the wheat crop and ship it to private processors, and receive a government subsidy for the amount shipped. Some major agricultural companies have their own flour mills and sell their products under their brand names. In the past, flour was the dominant product; however, processed products such as bread, dried noodles, and confectioneries are also now available. On the other hand,

from the perspective of food security and securing quality seeds, the government's Agricultural Support Fund aids stockpiling of wheat. As of late November, when more than half of the 2022 wheat crop had been sold, 59% had been shipped to private flour mills, 11% to the government national reserve, 12% for seeds, and 10% for feed, among other uses.

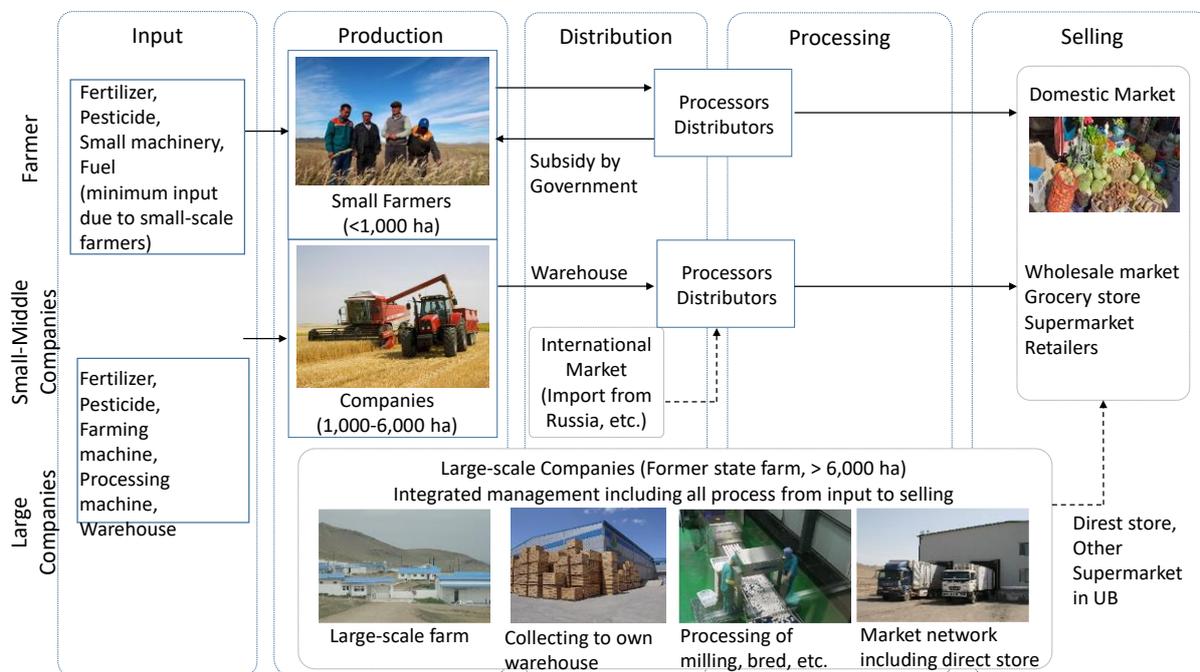


Figure 2.19 Wheat supply chain in Mongolia

Source: JICA Project Team

Wheat cultivation is generally practiced in a rotation system that combines oilseeds, including rapeseed and mustard, and fodder crops such as barley, oats, and alfalfa. The planned oilseed area for 2023 is 66,410 ha. Currently, growers prefer mustard seeds because of their better marketing conditions. There are no official statistics distinguishing rapeseed and mustard production; however, it is estimated that approximately 70-80% of oilseed is mustard, while 20-30% is rapeseed.

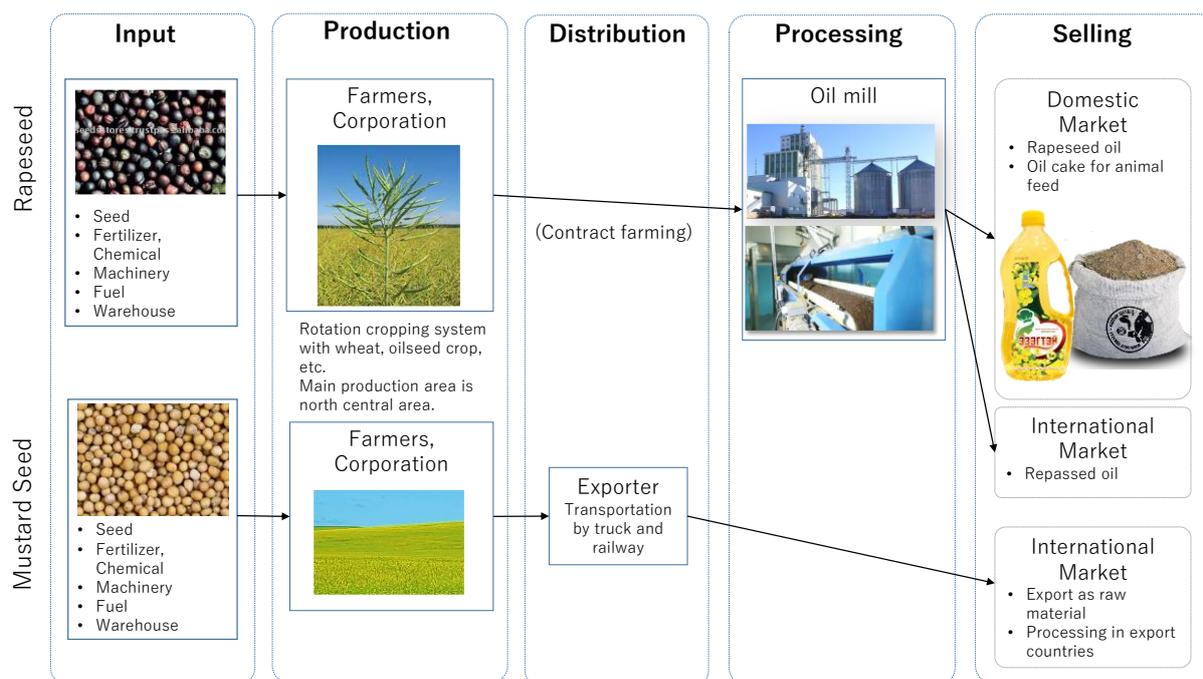


Figure 2.20 Oilseeds supply chain in Mongolia

Source: JICA Project Team

In addition, there is a demand for buckwheat as grain in Mongolia, which is imported from Russia and sold in the domestic market; however, its domestic production is limited. In response, a Japanese company has been promoting buckwheat production since 2014, with the aim of exporting it to Japan. As a result of these efforts, the planted area increased rapidly to 22,500 ha, and production volume to 33,000 tons in 2021 (FAOSTAT).

## (2) Market situation

Wheat is a staple food in the country, and its domestic demand is almost entirely met through local production. Recently, the stability of wheat supply has been required in terms of quantity and price through government purchases. As for rapeseed, the raw material for edible oil, the current government seeks to replace imports of edible oil. A modern oil mill sufficiently large to meet Mongolia's domestic demand for edible oil was established in 2014. Mongolia relies on imports from China, Russia, and other countries for most edible oil, with imports amounting to approximately 25,000 tons, in recent years. By type, sunflower oil accounted for 40%, soybean oil for 30%, palm oil for 24%, and rapeseed oil for only 1% of the imports.

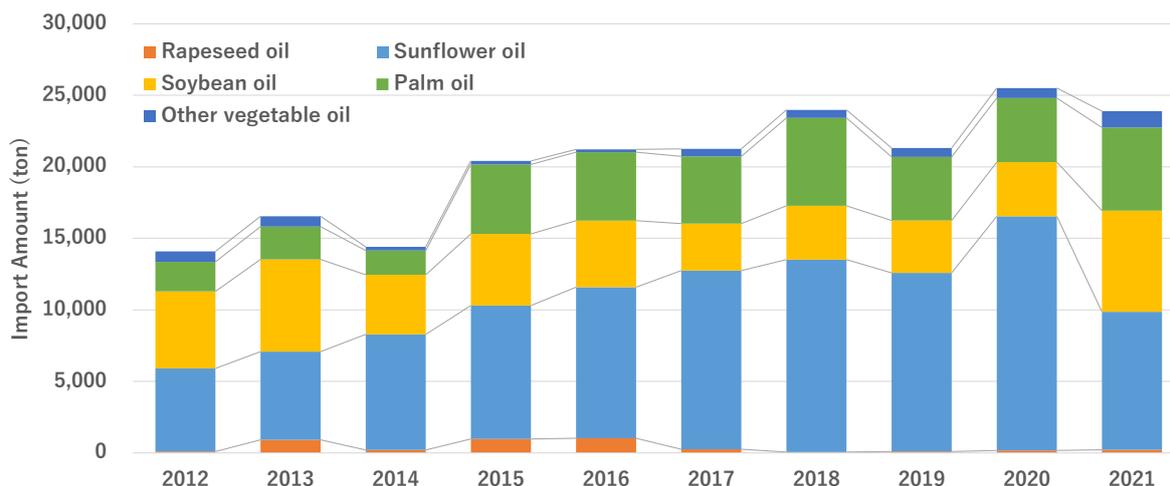


Figure 2.21 Import trends of vegetable oils

Source: JICA Project Team using data of FAOSTAT

The total production of oilseeds, including rapeseed and mustard, has fluctuated between 20,000 and 60,000 tons, averaging approximately 40,000 tons over the last three years. Assuming that 25% of this is rapeseed, it is estimated that 10,000 tons were harvested, which is equivalent to approximately 3,000 tons of edible oil. Compared with imports, this is only a little more than 10% of the total.

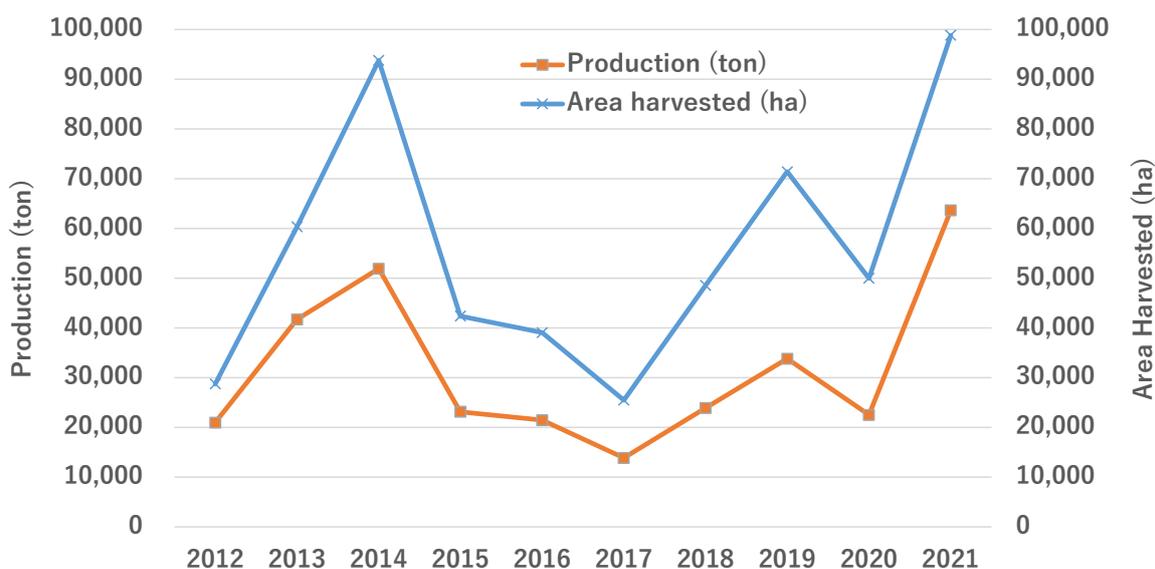


Figure 2.22 Trend of rapeseed production in Mongolia

Source: JICA Project Team using data of FAOSTAT

### (3) Issues and countermeasures

This section describes the issues and measures to be taken in the rapeseed supply chain.

Table 2.9 Issues and countermeasures in the rapeseed supply Chain

	Issues	Countermeasures
<b>Material: Seed</b>	<ul style="list-style-type: none"> <li>Certified seeds of rapeseed are dependent on imports, which are unstable to procure and expensive.</li> </ul>	<ul style="list-style-type: none"> <li>To date, two varieties of rapeseed have been registered, and a system will be established to expand their domestic production and provide them appropriately to growers.</li> </ul>

	Issues	Countermeasures
<b>Production: Techniques</b>	<ul style="list-style-type: none"> <li>Rapeseed production is relatively new in Mongolia, and producers do not have sufficient cultivation technology, resulting in low productivity. Mongolian average yield is about 0.6 ton/ha, while world average is about 2.0 ton/ha,</li> </ul>	<ul style="list-style-type: none"> <li>In order to improve productivity, it is necessary to establish proper cultivation techniques for rapeseed and strengthen technical guidance to growers.</li> </ul>
<b>Distribution: Prices</b>	<ul style="list-style-type: none"> <li>Rapeseed price is determined from the price of edible oil, which keeps it low compared to the purchase price of mustard seeds for export. In addition, the trade conditions of rapeseed is relatively rigid.</li> </ul>	<ul style="list-style-type: none"> <li>It would be useful to introduce a contract farming system, in which the terms of trade are discussed and agreed upon in advance between the rapeseed producer and the oilseed miller.</li> </ul>
<b>Processing: Extraction</b>	<ul style="list-style-type: none"> <li>The edible oil production technology of a large-scale factory is of a sufficient level. But it is practically monopolistic, and the principle of competition does not work.</li> </ul>	<ul style="list-style-type: none"> <li>In the long run, government support for the entry of new oil processing firms will also be considered.</li> </ul>

Source: JICA Project Team

#### (4) Direction of development

A crop rotation system that combines wheat, oilseed, and fodder is commonly used in Mongolia. Among these, wheat has almost achieved self-sufficiency, and current policies include a procurement support system for wheat production materials such as seeds and fuel, subsidy for wheat production, and a national stockpiling system. The following SWOT analysis was conducted to examine the strengthening of the rapeseed supply chain with the goal of increasing food oil self-sufficiency as part of the Food Revolution movement, launched in 2022.

		External Factors	
		Opportunities	Threats
<b>Oilseeds Supply Chain SWOT Analysis</b>		<ul style="list-style-type: none"> <li>Oil mill of sufficient size and quality in the county</li> <li>Government support for procurement of production equipment and materials</li> <li>Rapeseed researchers in the country for effective technical guidance</li> <li>Existence of agricultural producers association</li> </ul>	<ul style="list-style-type: none"> <li>Production of mustard for export to China has higher sales prices and better payment terms than rapeseed for domestic use.</li> <li>Rape seed sales are limited to one monopoly.</li> <li>Prices of production materials such as fertilizer have skyrocketed.</li> </ul>
		<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>A well-established crop rotation system that includes rapeseeds</li> <li>No additional investment in agricultural machinery</li> <li>Constant production even without irrigation</li> <li>Two varieties of rapeseeds certified</li> </ul> <p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>Little experience and low technical skills of rapeseed growers</li> <li>Seeds are dependent on imports and are not easily procured.</li> <li>Harvest time overlaps with grain, making proper harvesting difficult.</li> <li>Lack of specialized rapeseed harvesters results in high losses.</li> </ul>	<p><b>Strengths × Opportunities</b></p> <ul style="list-style-type: none"> <li>Maintain or expand support measures for rapeseed production materials.</li> <li>Implement rapeseed production programs in farmers associations comprised of major rapeseed producers.</li> </ul> <p><b>Strengths × Threats</b></p> <ul style="list-style-type: none"> <li>Establish a subsidy program for rapeseed production to close the price gap with mustard.</li> <li>Maintain or expand support for rapeseed production materials.</li> </ul> <p><b>Weaknesses × Opportunities</b></p> <ul style="list-style-type: none"> <li>Organize seminars and events on rapeseed and domestic rapeseed oil.</li> <li>Prepare and distribute guidelines for rapeseed cultivation.</li> <li>Establish a support system for domestic production and distribution of seeds.</li> </ul> <p><b>Weaknesses × Threats</b></p> <ul style="list-style-type: none"> <li>Promote contract farming between growers and millers to improve trade conditions of rapeseeds.</li> <li>Continue the policy of VAT exemption for oil millers.</li> </ul>

Figure 2.23 SWOT analysis of rapeseed supply chain

Source: JICA Project Team

### 2.3.3 Fruits

#### (1) Current supply chain

Mongolia's fruit and berry production was 2,357 tons (2021) of cultivated species harvested, a significant increase of more than 50% from 1,488 tons (2017) five years ago. About 90% of production is from sea buckthorn. In addition, the harvest of wild species is larger than that of cultivated species. The main production area for cultivated species is the Uvs aimag, accounting for 58% (1,369 tons, 2021) of the total production of cultivated species in the western region. In terms of the supply chain, small and medium-scale farmers focus on the production side, supplying raw materials to distributors, processors, and others for trade in the local market. Conversely, some large companies own farms and factories, and operate integrated production, distribution, processing, and marketing systems.

The average per capita monthly consumption of fruits and berries is 0.5 kg/person/month, with urban and rural areas consuming 0.7 kg/person/month and rural areas 0.4 kg/person/month<sup>39</sup>. Consumption is trending flat and low compared with the global average.

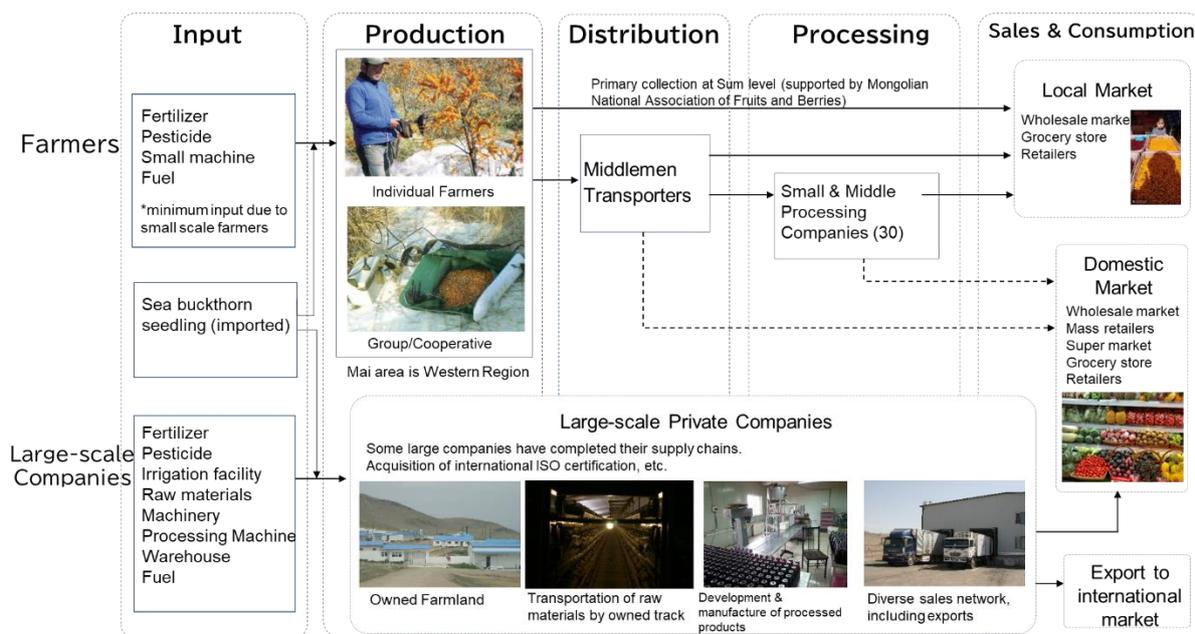


Figure 2.24 Fruits and berries supply chain in Mongolia

Source: JICA Project Team

#### (2) Market situation

The market for fruit trees (fruits) and berries shows a gradual increase in demand (Figure 2.25). Because of Mongolia's cool continental climate, the number of fruits and berries that can be grown is limited, with sluggish yields when grown. The self-sufficiency rate has slightly increased from approximately 3.9% in 2012 to 4.8% in 2021, but fluctuated from 4.0% to 6.0%, year to year, due to climatic conditions. Although per capita consumption has leveled off, demographics suggest that demand is expected to increase moderately, and the market is expected to grow. Therefore, a production promotion policy to replace the import of fruit and berries is desirable.

<sup>39</sup> NSO Mongolian Statistical Yearbook 2021

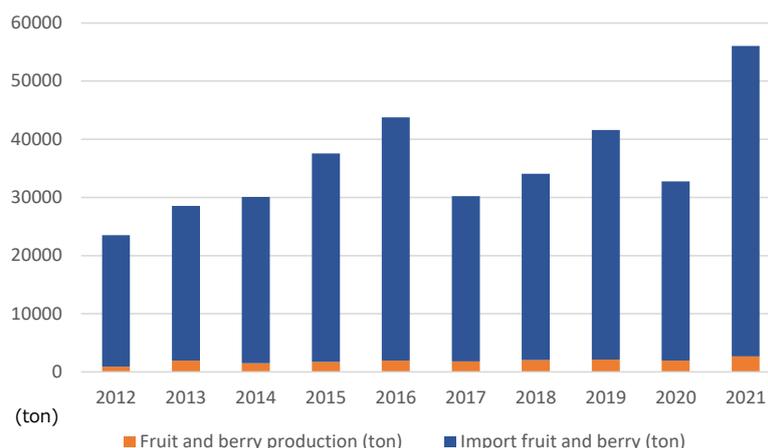


Figure 2.25 Production and import of fruits (2012-2021)

Source: JICA Project Team using data of NSO Mongolian Statistical Yearbook 2021

### (3) Issues and countermeasures

Table 2.10 shows the issues and countermeasures in the fruit and berry supply chain. The main issues are the high demand for domestically produced fruits and berries, low production not keeping up with demand and the country not achieving self-sufficiency; mixing of varieties in the input and production stages not allowing product differentiation and branding at the processing and marketing stages; and low per capita fruit and berry consumption. The government and development partners have already taken measures to address these issues, as shown in Table 2.10, such as encouraging the construction of seedling centers to produce quality seeds and varieties and developing clusters with industry-government-academia collaboration to promote the export of sea buckthorn and other fruits.

Table 2.10 Issues and countermeasures in the fruit and berry supply chain

	Issues	Countermeasures
Input	<ul style="list-style-type: none"> <li>Insufficient seed production systems for excellent varieties</li> </ul>	<ul style="list-style-type: none"> <li>Establish a domestic seedling production and supply system for major fruits such as sea buckthorn.</li> </ul>
Production	<ul style="list-style-type: none"> <li>High cost of cultivation, distribution, and marketing due to environmental conditions (cold climate, large land area, etc.)</li> <li>Mixed varieties among both cultivated and wild varieties</li> <li>Room for improvement in yield due to bird damage during harvest season and difficulty in accessing irrigation systems.</li> <li>Insufficient organization of farmers.</li> </ul>	<ul style="list-style-type: none"> <li>Subsidy policy for fruits and berries.</li> <li>Appropriate production of each variety from the production stage.</li> <li>Identification and development of bird damage prevention equipment and techniques, as efficient and effective cultivation techniques.</li> <li>Rehabilitation of irrigation system and appropriate use of water resources.</li> <li>Promote grouping and cooperative of farmers.</li> </ul>
Logistics Processing	<ul style="list-style-type: none"> <li>Lack of storage facilities and high transportation costs</li> <li>Difficulty in product differentiation and branding due to mixed varieties at the time of raw material procurement.</li> <li>Room for improvement in the factory utilization rate (high production costs).</li> </ul>	<ul style="list-style-type: none"> <li>Infrastructure development such as storage facilities and road rehabilitation.</li> <li>Classify varieties when procuring and processing raw materials, and process and manufacture products with focus on product differentiation.</li> <li>Increase the efficiency of post-harvest processing and primary processing by constructing storages and strengthening the organization of farmers to increase factory utilization rates.</li> </ul>
Sales Consumption	<ul style="list-style-type: none"> <li>Per capita consumption of fruit and berries is low.</li> </ul>	<ul style="list-style-type: none"> <li>Stimulation of domestic fruit and berry consumption.</li> <li>Cluster development, industry-government-academia collaboration.</li> </ul>

Source: JICA Project Team

**(4) Direction of development**

Figure 2.26 shows the direction of development for the entire supply chain, based on a cross-SWOT analysis. The direction of development can be broadly categorized as follows: the introduction of high-quality seeds and other inputs, establishment of a seedling production system to meet demand and increase fruit and berry production, development and production of products based on domestic and international market needs, introduction of specific varieties from the input and production stages to meet those needs, and promotion of internationally competitive fruit and berry product exports. The promotion of exports of internationally competitive fruit and berry products is essential.

Fruits Supply Chain SWOT Analysis		External Environment	
		Opportunity	Threats
Internal environments	<p><b>Strong Point</b></p> <ul style="list-style-type: none"> <li>• The cool natural environment produces unique fruit trees and berries. Sea buckthorn is one of the few exported fruits.</li> <li>• Processing and manufacturing companies and associations related to fruits and berries exist.</li> <li>• Infrastructural facilities such as a public market and storage facilities are being developed in Ulaanbaatar.</li> <li>• Food safety systems such as Mongolian GAP are developed. There is a national certification body, as well as research and educational institutions.</li> </ul>	<ul style="list-style-type: none"> <li>• Large domestic demand for fruit relative to production volume.</li> <li>• Increased momentum due to the Billion Tree National Movement and other related policies.</li> <li>• The population is expected to continue to increase, with a large number of young people in the population structure.</li> <li>• Growing consumer awareness of food safety and other issues will contribute to high demand for domestically produced products.</li> <li>• Infrastructure for China and Russia is well developed.</li> </ul>	<ul style="list-style-type: none"> <li>• Difficult natural environment with a cool continental climate. Impact of climate change is also a concern.</li> <li>• Unrealistic price competition with inexpensive imported fruits and berries from China and other countries.</li> <li>• Landlocked and sandwiched between China and Russia, two major agricultural countries.</li> </ul>
	<p><b>Weak Point</b></p> <ul style="list-style-type: none"> <li>• Dependence on imports for most agricultural inputs, including seeds</li> <li>• Insufficient domestic seed production and supply system, productivity is 2-3 tons/ha, which is less than ideal yield, due to difficulty in accessing irrigation, bird damage, etc.</li> <li>• Insufficient differentiation and branding at the processing stage due to mixed varieties at the time of raw material procurement (even at farmland).</li> <li>• There is room for improvement in factory utilization rate, and production costs are high.</li> <li>• There are cases where pesticide residues are detected in manufactured products, and there is room for improvement in the production and processing stages.</li> <li>• Insufficient storages and technology, and high transportation costs.</li> </ul>	<p><b>Strong Point</b> <b>×Opportunity</b></p> <ul style="list-style-type: none"> <li>• Continue to promote import substitution in anticipation of increased production and distribution of domestic fruit.</li> <li>• Plan to promote export of sea buckthorn products that meet international standards.</li> <li>• Continue export negotiations with the EU and other countries to expand sales channels.</li> </ul>	<p><b>Strong Point</b> <b>×Threats</b></p> <ul style="list-style-type: none"> <li>• Promote unique and safe domestically produced fruit and differentiate them from imported fruits such as those from China, after establishing system of research and development.</li> <li>• Strengthen collaboration and traceability among industry, government, and private sector to ensure stable supply of domestically produced fruit and raw materials.</li> </ul>
		<p><b>Weak Point</b> <b>×Opportunity</b></p> <ul style="list-style-type: none"> <li>• Strengthen the supply chain based on the Seedling Center in order to enhance the production system of high-quality varieties in Japan and abroad.</li> <li>• Plan and implement dissemination of appropriate cultivation techniques to increase productivity and improve quality.</li> </ul>	<p><b>Weak Point</b> <b>×Threats</b></p> <ul style="list-style-type: none"> <li>• Manufacturing companies and others will raise funds by offering stock.</li> <li>• The functions of agricultural exchanges and wholesale markets will be strengthened to improve logistics systems and share market information.</li> </ul>

Figure 2.26 SWOT analysis of the fruit and berry supply chain

Source: JICA Project Team

### 2.3.4 Meat and milk

#### (1) Current supply chain

Meat and milk are two of the most important food staples in Mongolia. According to the latest statistics available (2021)<sup>40</sup>, livestock accounts for more than 80% of agricultural GDP, and is significantly associated with the nation’s tradition, namely, nomadism. Thus, the Mongol meat and milk supply chains have a long history. However, this does not imply that these chains are ideally developed. Rather, they fall short of expectations in various aspects. For instance, the amount of dressed meat processed in modernized slaughterhouses, as well as the amount of raw milk collected through the cold chain are both approximately 10% of the total amount of the production<sup>41</sup>. Figure 2.27 gives an overview of the meat and milk supply chains in Mongolia.

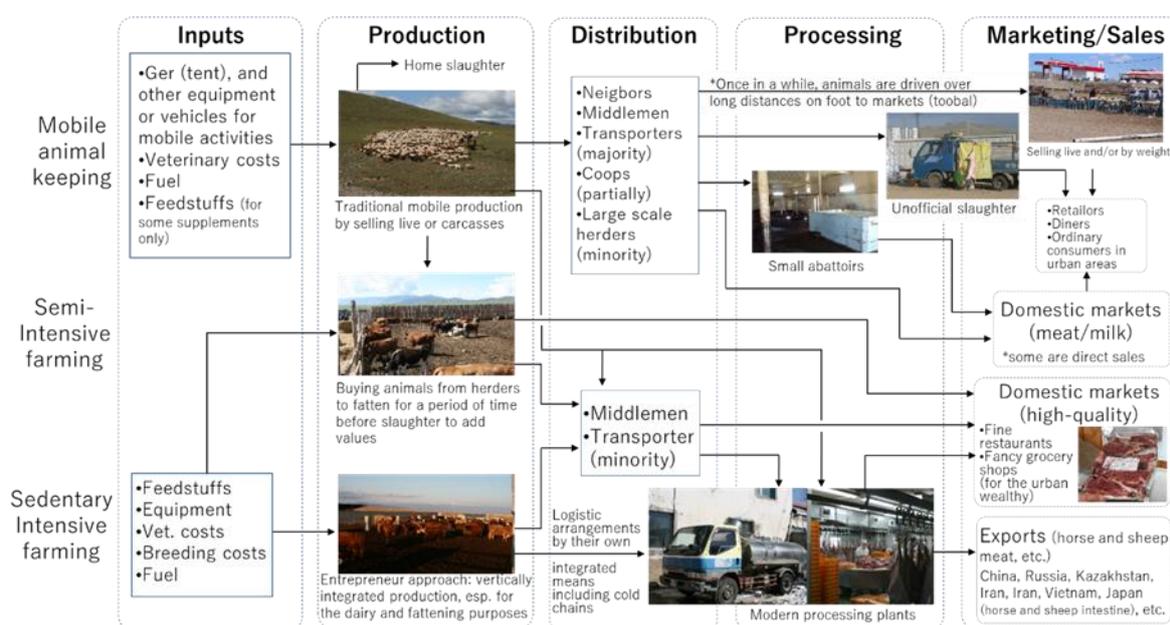


Figure 2.27 Meat and milk supply chains in Mongolia

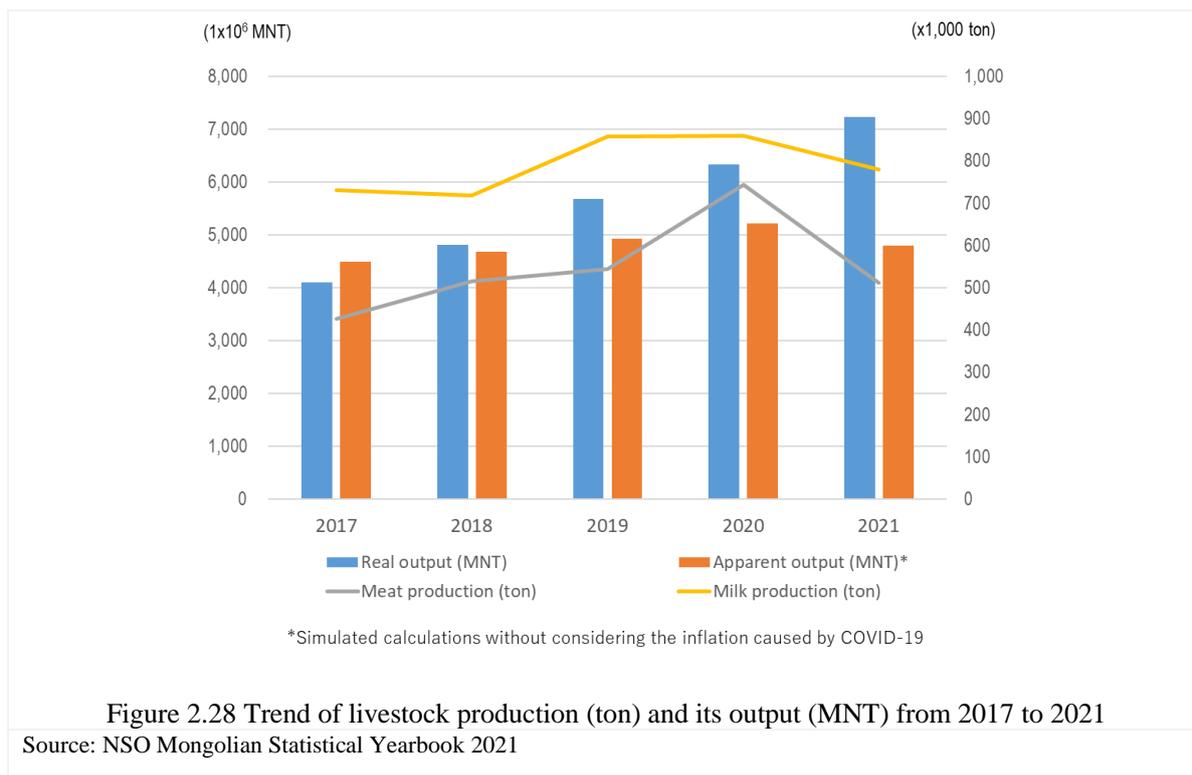
Source: JICA Project Team

#### (2) Market situation

The meat and milk value chains in Mongolia have suffered the consequences of recent social upheavals such as COVID-19 and the Ukraine conflict. One of the most noticeable changes was the rising inflation witnessed during the pandemic (Figure 2.28).

<sup>40</sup> Mongolian Statistical Yearbook, 2021.

<sup>41</sup> From a hearing at Mongolian Meat Association and major dairy factories in Ulaanbaatar.

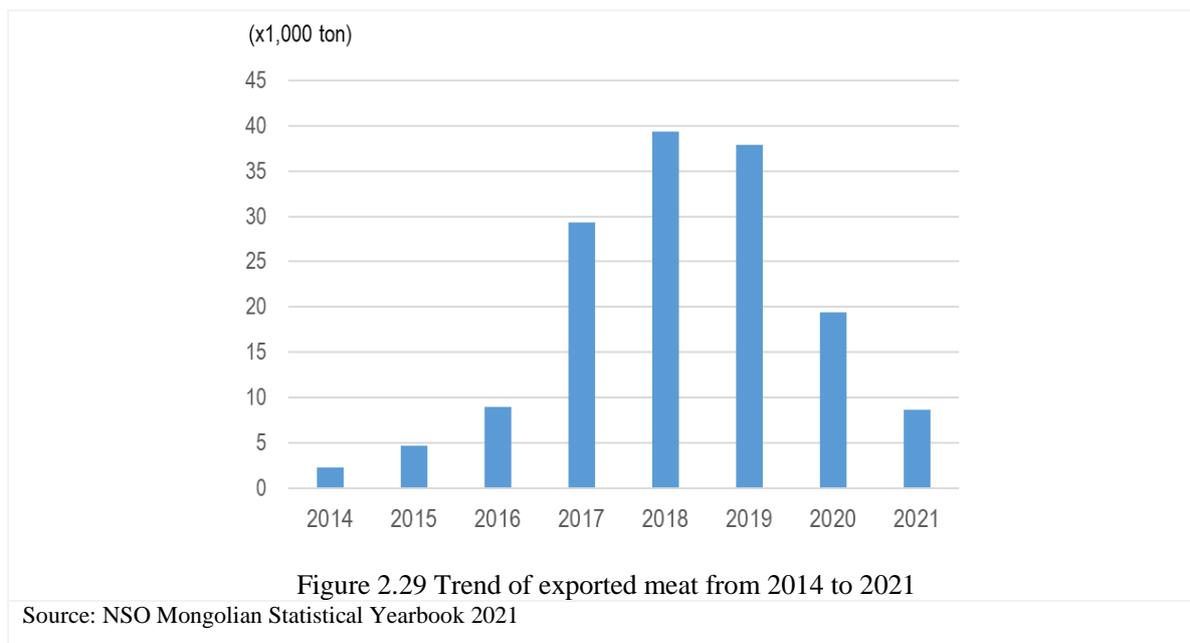


This figure shows the data from before COVID-19 to the pandemic years. The whole production (meat and milk) dropped noticeably immediately after COVID-19 started in 2020 (See the broken lines). In contrast, the real outputs of both meat and milk are steadily increasing. This paradoxical phenomenon can be explained by the rapid increase in almost all transaction costs, including livestock production-related materials<sup>42</sup> such as feedstuff, fuel, and transportation, thereby causing unprecedented inflation; although the production amount decreased, the total outcome increased overall. The apparent output in the same figure, calculated without considering the inflation caused by COVID-19, provides further clarity.

For export of livestock products, particularly, processed meat, the trend is similar to that mentioned above (Figure 2.29). After the massive loss of livestock due to the 2010 dzud, meat exports rose from 2014 to 2018, reaching a record high since socialism. In 2020, however, due to the COVID-19 pandemic, it dropped abruptly. Also important, is the fact that the government banned meat exports to China in 2022, after which it was lifted in early part of 2023. According to the managements at large meat companies, meat exports are expected to increase in the near future<sup>43</sup>.

<sup>42</sup> Mongolian traditional mobile livestock keeping has its own benefit such as low production costs since it depends on natural grasslands. In reality, however, since their products are being processed at modernized plants, even for Mongolia’s livestock industry some production materials such as packages and reagents are indispensable and since almost all of them are imported, during the pandemic the production dropped considerably (information from officers of a large dairy company).

<sup>43</sup> Hearing from major meat processing company in April 2023



Among countries importing meat, mainly horse meat (82%) and some sheep and goat meat, China accounted for more than 80% of the share followed by Iran (approximately 16%), for instance in 2019, when the total exports reached 130 million USD. Other importers, though negligible, include Korea, Vietnam, Russia, and Kazakhstan<sup>44</sup>. Noticeably, Iran almost exclusively buys a rapidly growing young stock of sheep (18 to 24 months of age).

Other factors that may have a direct or indirect influence on the meat and milk value chains are as follows:

**[Livestock tax]** A taxation system<sup>45</sup> by which herders are collected according to the number and species of animals they keep was enacted by Parliament on June 11, 2009, under the General Law of Tax. However, this regulation was ineffective. Thus, based on experience and lessons, a modified stipulation became effective on January 1, 2021. A striking feature is that revenue will be under the control of local public institutions, namely *soums* for the benefit of the community. Nevertheless, enforcement of this rule was considerably delayed because of the pandemic. Thus, it is early to comment on the effectiveness of this new trial. However, because of its revolutionary aspects, *soum* administrators should take advantage of these laws.

**[Meat processing regulation]** During the COVID-19 pandemic, to make matters worse, a food adulteration issue caused devastating damage to the meat industry of Mongolia. A chemical substance<sup>46</sup> not permitted for use as a food additive was allegedly mixed with processed meat and subsequently detected. The health authorities, reacted strictly, investigating meat supply chains thoroughly, especially meat processors, with virtually all these companies losing business for months. Considering these situations, new guidelines were introduced for processing meat, paying due attention to food hygiene issues. As a first step, all processed meat designated for hospital and school meals must be dealt with at slaughterhouses authorized by the

<sup>44</sup> UNCTAD. 2021. Survey on the Domestic and Export Meat Value Chain in Mongolia. United Nations Conference on Trade and Development, Switzerland.

<sup>45</sup> According to the Mongolian “Sheep” formula; a horse and a cow are equivalent to 5 sheep, a camel 2 sheep, and a goat 1.5 sheep, the total number of livestock will be calculated. Then, depending on where a herder stays the total amount of tax to be paid will be known (50 to 100 MNT). Currently, a tax price per head is at the most 2,000 MNT.

<sup>46</sup> Allegedly, it is sodium tetraborate decahydrate or formaldehyde.

government, hoping this will positively change the industry.

[Younger sheep fattening business] Mongolian lamb is now in demand in the sheep industry. Strictly speaking, lamb refers to sheep meat from a young stock that is under one year of age, but in Mongolia, this term includes younger sheep up to two years of age. According to information from a MOFALI officer, the number of farmers who are engaged in the younger sheep fattening business has been on the rise, especially after 2017 (Figure 2.30). These farmers practice a crossbreeding method by introducing and mating various sheep breeds from France to establish their own nuclear flock, from which they obtain feeder stock. Thus, the younger sheep fattening business appears to be one of the most promising.

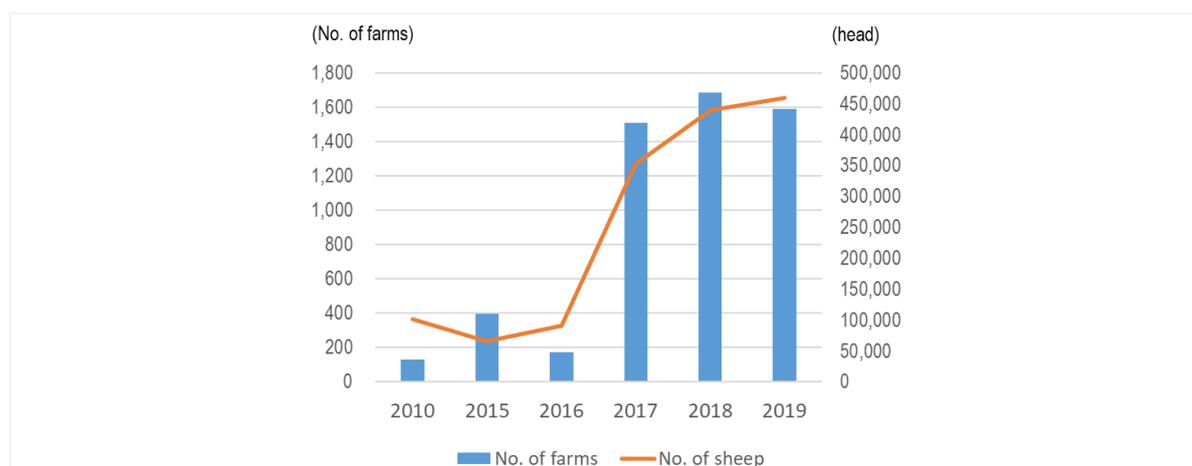


Figure 2.30 Trend of the number of sheep and sheep fattening farmers from 2010 to 2019

Source: MOFALI

[Farmers' self-help group activity for selling raw milk] The group activities mentioned here are mostly identical to those of agricultural cooperatives, namely, *khорshoo*<sup>47</sup> in Mongolia. However, these groups are not members of the National Association of Mongolian Agricultural Cooperatives. They are self-help groups working together with modern private dairy companies to sell harvested and collected raw milk. This cooperative relationship is interdependent and a win-win situation because farmers enjoy an assured market (selling place), while dairy companies ensure the bulk buying of raw milk. Since all farmers working with self-help groups sell their milk to modernized plants equipped with a cold chain system, they are entitled to receive a subsidy<sup>48</sup> provided by MOFALI. In 2020, the first self-help group selling raw milk opened its doors to farmers in Tuv (Figure 2.31). To date, there have been 12 such groups available in various communities. According to the managers of the dairy company, it is planning to open approximately 20 more sites a year, 2023 onwards.

[Pet food industry in Mongolia] It is remarkable how the pet food industry has flourished recently in terms of its diversification as well as quality. In Japan, for instance, many types of products are available in the market using byproducts that would have never been used in the past as pet foods, such as tendons, hooves, or horns. Almost all of these are considered “human grade” including some which were formulated for allergy

<sup>47</sup> Zolzaya, Z. 2006. Current situation and necessity of agro-pastoral cooperative in Mongolia

<sup>48</sup> 450 to 500 MNT per liter of production.

prevention. Human grade indicates that the products meet legally recognized edible standards<sup>49</sup>. However, this type of business is uncommon in Mongolia. Nevertheless, according to a secretary general of one of the pet food-related associations in Japan, with international exposure, Mongolia is a highly promising candidate<sup>50</sup>. In fact, although only a minority, there are some budding pet food processors in Mongolia, and for the first time, in 2020, statistical data under the name of pet food appeared in the list of the Customs Service Office. As shown in Table 2.11, the values are not significant, but are increasing.

Table 2.11 Trend of the total amount of exported pet food from Mongolia

2020	2021	2022 (first half)
69,252 kg	106,310 kg	85,287 kg

Source: MOFALI



Figure 2.31 Milk collecting and chilling point (L) and inauguration of the point (R)

### (3) Issues and countermeasures

As mentioned earlier, meat and milk supply chains in Mongolia are strongly related to people’s traditions and culture; thus, it would be inappropriate to discuss the drawbacks in these supply chains only from a business perspective. For instance, grassland degradation is a direct result of the livestock explosion; however, a majority of livestock keepers, namely herders, are overwhelmingly dependent on natural grassland, which is extremely important and crucial to the meat and milk supply chains as well. In reality, however, this highly overarching and cross-sectional topic should not be mingled with other technical issues, such as lack of processing machinery or milk hygiene issues. It is also unreasonable to impose a ban on traditional slaughtering methods to keep processed meat clean in the supply chain. Therefore, we discuss the factors to be addressed here, paying special attention not to subsistence but to the minds of entrepreneurs. Table 2.12 shows the problems and their countermeasures (measures with (\*) are included as components in the enforcement program (See Chapter 5))

Table 2.12 Issues and countermeasures in the meat and milk supply chain

Inputs	Issues	Countermeasures
	<ul style="list-style-type: none"> <li>• Lack of appropriate logistics of moving the</li> </ul>	<ul style="list-style-type: none"> <li>• Creation of self-help organization to</li> </ul>

<sup>49</sup> Information source: Japan Pet Food and Supplies Wholesalers Association.

<sup>50</sup> Information source: Japan Pet Food and Supplies Wholesalers Association.

	Issues	Countermeasures
	<ul style="list-style-type: none"> <li>input providers to herders, esp. in remote areas</li> <li>Grassland degradation, esp. in the areas near large cities.</li> <li>Instability of provision for production, esp. for intensive farmers who are highly dependent on imported materials.</li> </ul>	<ul style="list-style-type: none"> <li>purchase inputs together*</li> <li>Fortification of communal grassland management led by the government</li> <li>Establishment of domestic production system of various production materials.</li> </ul>
<b>Production</b>	<ul style="list-style-type: none"> <li>Highly skewed seasonality as well as high dependency on the weather, esp. in the case of herders</li> <li>Immature logistic system of production transportation between herders and processors.</li> <li>Lack of proper techniques to deal with carcasses and by-products</li> <li>Low productivity, esp. in the case of intensive and semi-intensive farming such as cattle or sheep fattening and dairies</li> </ul>	<ul style="list-style-type: none"> <li>Establishment of uniform supply of livestock products throughout the year through assurance of storage systems*</li> <li>Creation of farmers' group with other institutions such as coops or private companies for finding a stable market*</li> <li>Technical training of new practices in cooperation with the government and/or donors when necessary*</li> <li>Genetic improvement of national herd as well as introduction of new management skills by experts of universities, research institutions, or private companies*</li> </ul>
<b>Processing</b>	<ul style="list-style-type: none"> <li>Limited manufacturing cycle due to the seasonality in production</li> <li>Low awareness in players of the supply chain of food hygiene and quality control, esp. in the case of long-distance value chains</li> <li>Only a few farmers and/or processors are technically ready for new production approaches such as Lamb fattening or pet food manufacturing.</li> </ul>	<ul style="list-style-type: none"> <li>Establishment of the cold chain including modernized storage systems*</li> <li>Enactment of regulations to control meat and milk hygiene and quality control including grading system of meat carcasses*</li> <li>Technical training of new practices in cooperation with the government and/or donors when necessary</li> </ul>
<b>Distribution</b>	<ul style="list-style-type: none"> <li>Lack of distribution system, esp. between large cities.</li> <li>High dependency on the local traders (changes) thereby making the transparency of trades low, esp. between them and herders.</li> </ul>	<ul style="list-style-type: none"> <li>Creation of farmers' group with other institutions such as coops or private companies for finding a stable market*</li> </ul>
<b>Marketing/Sales</b>	<ul style="list-style-type: none"> <li>On-going livestock population explosion, esp. in sheep and goats, by far more than necessary.</li> <li>Lack of opportunities in which Mongolian buyer meet their future partners, namely, sellers (so-called matching; it turns out that there are foreign traders interested in Mongolian livestock products)</li> <li>Lack of backup system conducted by the government and private companies to promote Mongolian livestock products, esp. for international markets.</li> </ul>	<ul style="list-style-type: none"> <li>Introduction of awareness-raising program for herders to elucidate sustainable management of livestock paying special attention to the appropriate number of animals.</li> <li>New business creation promoted by the government together with private companies, dealing with animals that are noticeably on the increase (sheep and goats)*</li> <li>PR promotion of Mongolian livestock products, led by the government with private companies, for instance, sending a mission to other countries where economic conditions seem favorable to Mongolia*</li> </ul>

Source: JICA Project Team

#### (4) Direction of development

As previously mentioned, this section is concerned with directions for establishing a business-as-a-business meat and milk supply chain or for further strengthening the existing supply chain. The results of the SWOT analysis, developed in line with this approach, are as follows.

<p style="text-align: center;"><b>SWOT analysis for supply chain reinforcement program: meat and milk (pet food included)</b></p>		External environment	
		Opportunities	Threats
Internal environment	<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>Abundance of livestock resources; both in population and species</li> <li>Relatively affordable prices</li> <li>Scarcity values in some livestock products such as camel milk and yak milk</li> <li>Availability of a huge amount of livestock by-products at almost no cost</li> </ul>	<ul style="list-style-type: none"> <li>A reasonable prospect that Mongolian grass-fed livestock products will be value-added since a growing number of people are becoming eco-friendly</li> <li>Availability of Mongolian lamb processed by the recently introduced technology</li> <li>Advantageous economic conditions both to some industries and Mongolia such as pet foods which need a lot of livestock by-products</li> </ul>	<ul style="list-style-type: none"> <li>Ban on livestock product export to some countries due to internationally feared diseases such as FMD</li> <li>Instabilities of both domestic and international markets due to unexpected reasons including the pet food industry</li> </ul>
	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>Highly skewed seasonality in production supply</li> <li>Difficulties in centralizing both distribution and collection logistics between herders and processors since herders are widely dispersed in the rural areas</li> <li>Only a few farmers and/or processors are technically ready for new production approaches</li> <li>Being found in endemic zone of internationally recognized serious diseases such as foot-and-mouth disease (FMD)</li> <li>Lack of proper techniques to deal with carcasses and by-products</li> <li>Lack of PR to promote "Made in Mongolia" products</li> </ul>	<p><b>Strengths vs. Opportunities</b></p> <ul style="list-style-type: none"> <li>Promotion of value-added livestock products by utilizing grass-fed animals</li> <li>Mass-production of high quality livestock products processed by newly introduced technology, esp. for export</li> <li>Contribution to the pet food industry by using abundant livestock resources</li> </ul>	<p><b>Strengths vs. Threats</b></p> <ul style="list-style-type: none"> <li>Innovation of processing plants by diversifying livestock products to meet the market needs</li> <li>Assurance of hygiene and quality of live animals and their products through zoning (=Compartmentalisation: physical separation of animal herds/flocks based on the endemic and disease-free areas)</li> </ul>
		<p><b>Weaknesses vs. Opportunities</b></p> <ul style="list-style-type: none"> <li>Establishment of uniform supply of livestock products throughout the year through assurance of storage system</li> <li>Provision of loans with low interest rates, tax exemptions for livestock business launching, or training program by the government</li> </ul>	<p><b>Weaknesses vs. Threats</b></p> <ul style="list-style-type: none"> <li>Enforcement of herders' group organization to work together with, for instance, soum coops, processors, meat or milk companies, led by the government (promotion of cluster approach)</li> <li>Promotion of institutionalizing a PR system for advertising more efficiently Mongolian livestock products through the cluster formed by the government and private companies</li> </ul>

Figure 2.32 SWOT analysis of meat and milk supply chain

Source: JICA Project Team

Based on the SWOT shown in Figure 2.32, the guiding principles for improving the meat and milk supply chains are listed below.

1. Towards mass-production of high quality and clean meat and raw milk through modernized processing plants

Quality control of meat and raw milk, for domestic consumption or international markets, is one of the most crucial issues, especially in the case of long and anonymous supply chains. The geographical distances between producers and consumers tend to be greater in Mongolia. Thus, increasing the amount of meat and raw milk processed by qualified modern processing plants is urgent, especially in the case of export products, for which the aforementioned requirements must be met. In light of this situation, it would be ideal if a system

for incentivizing herders is available in which they get subsidies for selling their produce to official channels, namely qualified modern processing plants. Currently, a subsidy for selling raw milk is available; this could be extended to meat. Other governmental incentives include tax exemptions or reductions on machinery or equipment for mass production.

2. Towards promotion of selective utilization of livestock species and products by subsidizing producers as well as processors

To maintain the ever-growing livestock population in a biologically and environmentally sustainable range<sup>51</sup>, utilization of some livestock species, such as goats and sheep, should be promoted, and producers and processors involved should be paid subsidies or privileges, such as bank loans with low interest rates. In addition, it is known that goats are kept longer for cashmere production, thereby worsening grassland degradation; their fibers get thicker with age. Selling goats older than four years, herders can be incentivized to get a higher price.

3. Towards creating more opportunities for technical training and awareness-raising programs:

In Mongolia, a great majority of herders still practice traditional mobile livestock keeping, which is the most suitable and sustainable method for harsh grasslands. However, this does not imply that herders do not require new techniques or knowledge. In fact, because of unanticipated issues in the past, such as livestock explosion or emerging and re-emerging diseases, knowledge on a number of topics should be transferred to them. Furthermore, new production methods, such as younger sheep fattening, including lamb or pet food manufacturing, require corresponding new production techniques not only for producers but also for processors. Thus, training courses should be organized and conducted periodically by MOFALI, together with the General Authority for Veterinary Services (GAVS), universities, research institutes, and related entities or private companies.

4. Towards promotion of PR activities for developing novel livestock products as well as advertising “Made in Mongolia” livestock products, especially for international markets:

As mentioned in the SWOT analysis, several livestock products in Mongolia seem to attract new livestock product spotters, especially in the international arena. These include grass-fed animals, yak milk, and camel milk, almost all of which are underutilized. In reality, however, this does not mean that these products are not attractive in international markets, but rather might be a consequence of a lack of public relations (PR), above all, advertising. In fact, at a Pet Fair in Japan in which Mongolian pet foods prepared using horse meat and horse by-products were displayed by a pet food association, various entrepreneurs expressed their interests. Currently, a contract between pet food distributors in Japan and pet food processors in Mongolia is being negotiated. Thus, the promotion of PR activities by government agencies, together with those of private companies, is crucial.

### **2.3.5 Wool**

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<sup>51</sup> During the Soviet era, the livestock population was in the range 20 to 30 million, and currently it has reached 70 million, which should be at most in the range 40 to 50 million.

### (1) Current supply chain

Wool is the lowest-unit-price livestock product produced by herders, significantly cheaper than cashmere and camel hair. Furthermore, the yield per head is extremely low in Mongolian sheep. The main reason is that Mongolian sheep are generally smaller and weigh less than dedicated wool breeds raised for intensive livestock production. While wool-focused breeds such as the Corydale breed can yield 4-6 kg per head<sup>52</sup>, the average Mongolian sheep can yield ±1 kg per head, which is very low. This figure is even lower than the 2.25 kg/head figure for the Southdown breed, a known meat breed, which is generally considered to have a low wool yield. In addition, Mongolian wool tends to be generally less marketable than wool-specific breeds, such as Merino, because of its thicker fibers<sup>53</sup>. It should be noted that wool is positioned as a by-product of sheep, which is mainly used for meat production, and this is very different from the relationship with cashmere in goats. As of today, the main purpose of goat raising in Mongolia, is not meat, but cashmere production. However, raising sheep solely for wool production is rare.

The current status of the wool supply chain is outlined below. Wool production in Mongolia increased from 17,486 tons in 2012 to 33,199 tons in 2021<sup>54</sup>. This is an increase of approximately 52%. Because the yield of raw wool per head remains unchanged at approximately 1 kg/head, the main factor for this increase is simply an increase in the number of sheep. Raw wool harvested by herders is generally transported to wool processors through brokers where it is sorted, washed, dried, carded, combed, and spun into finished wool products. There are approximately 360 wool-processing plants in Mongolia; however, the number of facilities capable of processing more than 1,000 tons per year is limited to approximately 10. Processed products range from yarns to felt, as materials for clothing, carpets, and shoes as finished products. In recent years, wool has been used for developing and producing insulation and construction materials, packaging materials for transportation, as well as organic fertilizers.

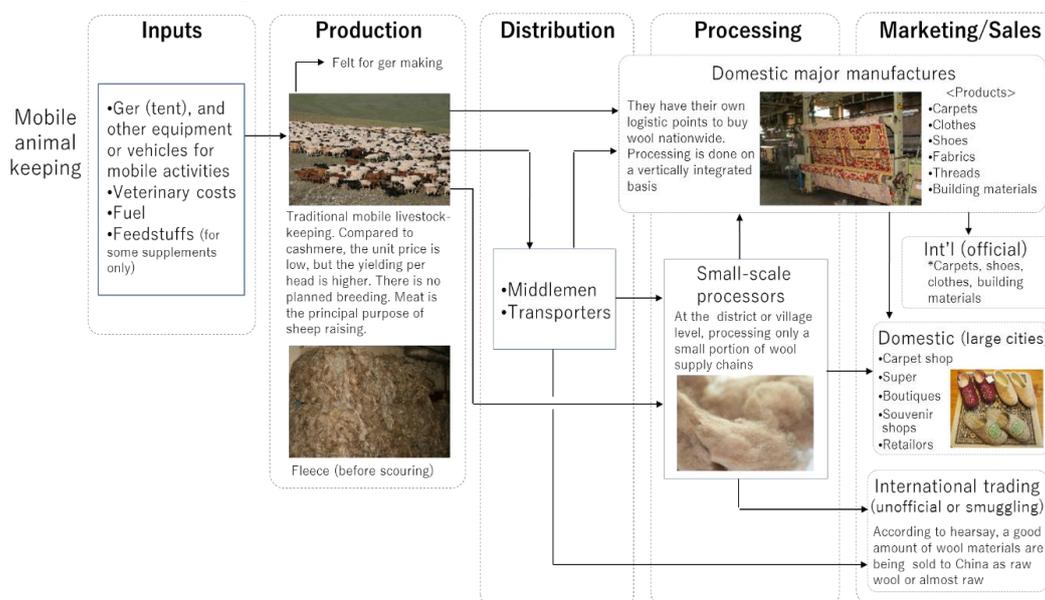


Figure 2.33 Wool supply chain in Mongolia

Source : JICA Project Team

<sup>52</sup> Yamamoto M. 2016. Survey on Fleece in Japan. Sheep Japan 18.

<sup>53</sup> Mongolia News Letter. 2019. No. 726. p. 5.

<sup>54</sup> NSO Mongolian Statistical Yearbook 2021

## (2) Market situation

As mentioned above, the production of raw wool in 2022 was approximately 34,900 tons. In general, the wool harvested by herders is transported to wool-washing companies through brokers, where it is sorted, washed, and dried. The yield of raw to washed wool is reported to be 55%<sup>55</sup>. According to this yield rate, approximately 19,195 tons of washed wool can be obtained from 34,900 tons of raw wool. In Mongolia, a large amount of washed wool is exported without carding or combing. By 2022, 17,569 tons<sup>56</sup>, or approximately 90% of the total, will have been exported, with the remainder being consumed domestically<sup>57</sup>. In addition, semi-processed products (carding, combing, spinning) and finished products (carpets, felt products, etc.), manufactured domestically are also exported; in reality, the Mongolian wool market is almost entirely dependent on foreign demand.

Table 2.13 summarizes the export values and destination countries for washed wool and other semi-processed products. It is evident that China is the destination country for almost all exports of washed and carded wool. The products spun after combing are exported mostly to Russia, followed by China. The average transaction value increases as the degree of processing increases. However, it should be noted that the value of washed wool, which has the lowest unit price, has the highest export value, indicating how low-value Mongolian wool is exported. The relative comparative advantage (RCA)<sup>58</sup> index shows that washed and carded wool have a comparative advantage because the value of RCA is 1 or higher; however, the value of RCA for combed and spun products is less than 1, indicating that there is no comparative advantage. In other words, Mongolian wool products are competitive only in low-processed products close to the raw material conditions, and their competitiveness in the market for high-value-added products is quite low.

Table 2.13 Total wool exports in Mongolia (5 years: 2017-2021) and destination countries

Commodity	HS Code	Total (Thousand USD)	1 <sup>st</sup> Partner (Thousand USD)	2 <sup>nd</sup> Partner (Thousand USD)	Average Unit Price (USD/kg)	RCA*
Wool, not carded or combed	5101	Total: 75,501	China: 75,040	India: 192	1.3	10.38
Wool; carded	510510	Total: 508	China: 508		4.8	6.08
Yarn of combed wool	5107	Total: 1,887	Russia: 1,598	China: 260	42.4	0.65

Source : JICA Project Team using data of UN Comtrade. \*Revealed Comparative Advantage.

## (3) Issues and countermeasures

Table 2.14 shows the challenges and measures taken in Mongolia's wool supply chain.

<sup>55</sup> Interviews with the Light Industry Research and Development Center and wool processors. The yield rate varied greatly depending on the region and producer, and in some cases, most of the procured raw wool was unsuitable for processing due to stains and variations in the length of the raw wool.

<sup>56</sup> Reference is made to HS5101. Although this code accurately includes unwashed wool, the statistical data is calculated based on the amount of raw wool procured by the washing factories, so the percentage of unwashed wool is considered to be small.

<sup>57</sup> Data from the Mongolian Customs Agency. Note that many wool processors have their own storage facilities, and in some cases, surplus wool from the procured raw wool is stored for the following year, so this quantity may include wool from the previous year.

<sup>58</sup> One of the indicators of export competitiveness. It indicates the export competitiveness of a specific item by comparing "the share of a specific item in a country's total exports" with "the share of a specific item in the world's total exports. Generally, a value of RCA of 1 or more is considered to indicate comparative advantage.

As mentioned above, the main focus of herders in sheep rearing is meat production, and their awareness of wool quality control is extremely low. Currently, the unit price of 1 kg of wool is approximately one-hundredth of the unit price of 1 kg of cashmere, and herders have little incentive to take the time and effort to control the quality of raw wool. Based on this premise, there is a need to improve the quality of raw wool to some extent, and it will be necessary to introduce superior breeds that can be used for both wool and meat, introduce shearing machines at the time of harvest in place of manual shearing, and provide technical training for this purpose.

A prominent issue is that wool is not sorted at the production sites, resulting in the distribution of a mixture of qualified and unqualified wool. This implies that commercially worthless raw wool is being transported unnecessarily, increasing the cost of wool distribution. To improve this situation, it is necessary to sort raw wool to some extent at production sites and to establish a system that allows cooperatives (or even logistics companies) to do this as a business. Many wool processors offer premium prices for sorted raw wool<sup>59</sup>; however, it is difficult to procure high-quality wool using a wool procurement system that relies on brokers.

The first issue in terms of processing and marketing is the difficulty in procuring high-quality raw wool. In addition, the raw wool procurement period is limited to June-August each year, and the competition to procure raw wool during this period is severe. In particular, middlemen, who are responsible for supplying the foreign market, have abundant funds to purchase from all over Mongolia, making it even more difficult to secure high-quality raw wool. In addition, the manufacturing of semi-processed products such as yarn and finished products such as carpets and felt products has not been able to meet the diverse needs of the market because of outdated processing equipment and a lack of industrial experts engaged in product development; OEM production overseas has often been unsuccessful. With the support of the Mongolian government<sup>60</sup>, wool processors have been upgrading their equipment in recent years; however, there is still a need to improve the quality of raw wool at the upstream stage, develop industrial human resources, and provide low-interest loans to wool processors<sup>61</sup>.

Table 2.14 Issues and countermeasures in the wool supply chain

Process	Issues	Countermeasures
Production	<ul style="list-style-type: none"> <li>• <b>Low quality of raw wool:</b> unsuitable breed for wool production or old livestock. Low unit price compared to cashmere, and therefore low awareness of wool management among herders. Uneven length of raw wool due to manual trimming.</li> </ul>	<ul style="list-style-type: none"> <li>• Breeding sheep with good raw wool quality</li> <li>• Providing technical training in raw wool treatments</li> <li>• Introduction of shearing machines and other equipment</li> </ul>
Distribution	<ul style="list-style-type: none"> <li>• <b>No sorting of raw wool:</b> Raw wool is transported by middlemen without sorting (part, color, etc.) at the production site, which increases sorting and cleaning costs for processors.</li> <li>• <b>High cost of transporting raw wool:</b> Raw wool with low value is also transported. There is no wool compressor, so transportation efficiency is</li> </ul>	<ul style="list-style-type: none"> <li>• Strengthen capacity of livestock cooperatives to collect, sort, and market livestock</li> <li>• Development of collection warehouses and introduction of wool compressors in livestock cooperatives</li> <li>• Provide training to livestock cooperatives on warehouse operation and management</li> </ul>

<sup>59</sup> According to interviews with wool processors, the general purchase price of raw wool by processors is 800-1,000 MNT/kg, depending on the market price at the time of trade, and the premier price is around 1,500-2,000 MNT/kg.

<sup>60</sup> The introduction of a subsidy system for producers who sell raw wool to designated traders and the reduction or exemption of import taxes when importing processing equipment from overseas.

<sup>61</sup> According to the Mongolian Wool Association, in the 10 years since 2012, combing processing capacity in Mongolia has increased nearly five-fold (from 552 tons/year to 3,289 tons/year).

Process	Issues	Countermeasures
	low.	<ul style="list-style-type: none"> <li>Strengthening of networks between wool buyers (cleaners and other processors) and livestock cooperatives</li> </ul>
Processing and Sales	<ul style="list-style-type: none"> <li><b>Difficulty in procuring quality raw wool:</b> The company is dependent on middlemen for procurement of raw wool and is unable to procure high quality raw wool. There are also factors such as competition in wool procurement and lack of funds for the procurement.</li> <li><b>Limited plant operation period:</b> The plant operation period is short due to factors such as limited raw wool procurement period, unstable demand, etc.</li> <li><b>Outdated processing facilities:</b> The processing facilities are outdated and unable to make products that meet the needs of the market, especially from the international market. As for spinning, there are few processors who can handle this in the first place.</li> <li><b>Lack of industrial human resources in the wool processing field:</b> There are few industrial human resources who can engage in the development of wool products suited to the trend. Short operating period of plants makes it difficult to retain workers.</li> </ul>	<ul style="list-style-type: none"> <li>Improve access to funds for procurement of raw wool</li> <li>Improvement of storage facilities and introduction of a warehouse receipts system, thereby ensuring a year-round supply of raw or cleaned wool.</li> <li>Diversify sales channels: promote the development of products (blankets, etc.) that utilize high-quality carded wool</li> <li>Promoting investment attraction in the wool processing sector</li> <li>Support wool processing companies to exhibit at overseas expositions</li> <li>Promote industry-government-academia collaboration on product development</li> <li>Expansion of low-interest loan programs for capital investment by wool processing companies</li> <li>Introduction of an educational support system in the field of textile processing at vocational training schools.</li> </ul>

Source : JICA Project Team

#### (4) Direction of development

Figure 2.34 shows the results of the SWOT analysis of the Mongolian wool supply chain. In general, Mongolian wool is not suitable for clothing because of its thick fibers; however, it is suitable for manufacturing felt products<sup>62</sup>. This feature is advantageous in the production of insulating materials for construction and packaging. However, wool processors who have upgraded their facilities should use carding/combing raw materials to produce high-quality products (e.g., blankets). Wool is a natural fiber and raw material that is highly compatible with Sustainable Development Goals (SDGs). Promoting the production of environmentally friendly products has the potential to increase competitiveness, even in high-priced markets. To promote wool product development, it is essential to strengthen the upstream supply chain, from raw wool production to distribution. The Mongolian government should encourage and support herders' cooperatives to gradually take over distribution from brokers, and to provide shearing, collection, and sales services to their members as a business.

<sup>62</sup> According to the Mongolian Light Industry Research and Development Center, 80-95% of Mongolian wool is coarse wool with a thick fiber diameter, and the rest is fine wool with a thin fiber diameter.

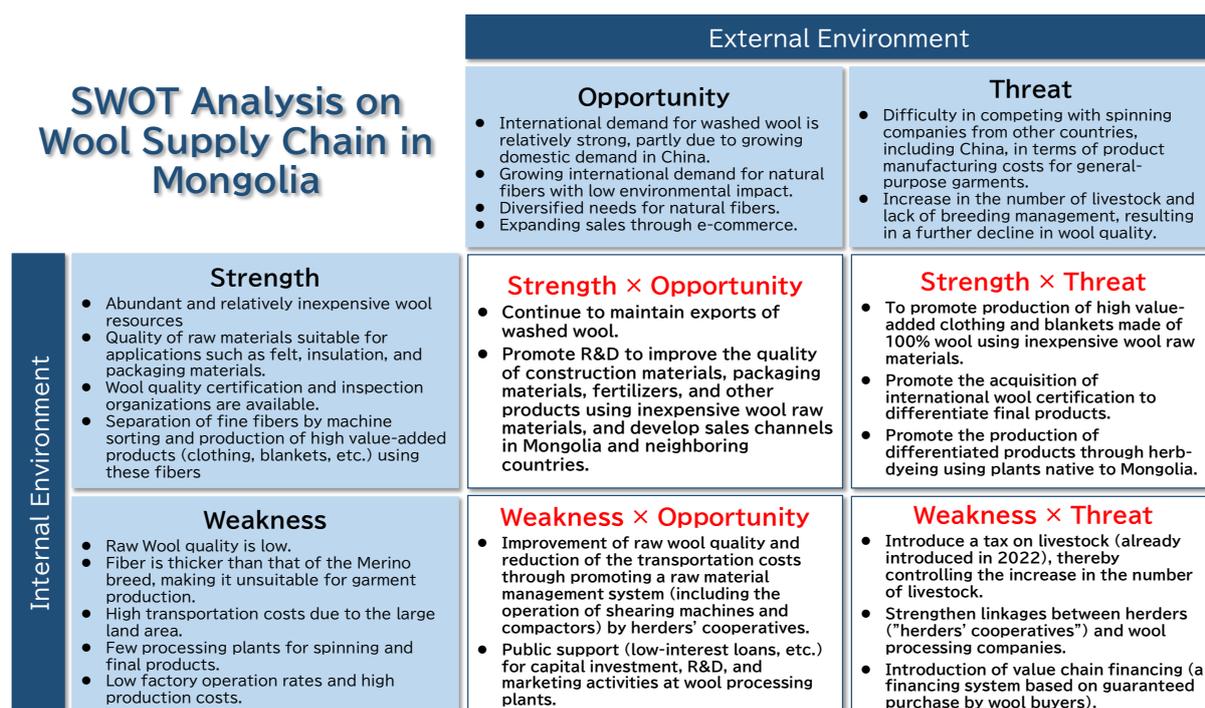


Figure 2.34 SWOT analysis of wool supply chain

Source : JICA Project Team

## 2.3.6 Cashmere

### (1) Current supply chain

Cashmere is the animal hair obtained from cashmere goats raised in frigid zones and is popular as a luxury material because it is extremely pleasant to touch and has excellent heat-retaining properties. However, the countries and regions in which it is produced are extremely limited and it is therefore very rare. Mongolia, along with China, is one of the world's leading cashmere-producing countries, and is the most important source of cash income for herders. It is one of the most important livestock export products from Mongolia, and the only livestock product that shows a significant impact on the trade balance. The fact that almost all raw material production is in the hands of the herders has made cashmere a special remedy for poverty alleviation<sup>63</sup>. The government has also promoted the cashmere industry and imposed a tax on exported raw cashmere to increase domestic value-added<sup>64</sup>. Although these measures have improved the profitability of the industry, the development of the cashmere industry has led to a dramatic increase in the number of livestock, which has led to a crisis in pastureland degradation, the foundation of livestock grazing. This is a critical issue in the development of a sustainable supply chain for cashmere.

Figure 2.35 shows the current status of the cashmere supply chain. Similar to wool, annual cashmere production increased from 6,326 tons in 2012 to 10,092 tons in 2021<sup>65</sup>. During this period, the number of

<sup>63</sup> World Bank. 2003. From goats to coats: Institutional reform in Mongolia's cashmere sector. Report No. 26240-MOG. Songwe, V. (ed.). World Bank Group.

<sup>64</sup> World Bank. 2003. *Op.cit.*

<sup>65</sup> NSO Mongolian Statistical Yearbook 2021

goats increased from 17,558 to 26,456, and the average yield per goat remained almost unchanged from 0.36 to 0.38 kg, indicating that an increase in the number of goats was driving the increase in cashmere production. The distribution of cashmere follows almost the same trade route as that of wool. The only difference is the initial sorting of raw cashmere by herders, which is mainly based on the color of the raw cashmere (white, black, or brown). This is because the trading price depends on the color of the raw cashmere, but may also be due to the fact that herders are willing to spend the time and effort to sort the raw cashmere, as it is more than 100 times more valuable than wool. Cashmere procured mainly through brokers undergoes the same process as wool to produce yarns and garments. Although the amount of cashmere products processed in Mongolia is small compared to raw cashmere, the cashmere industry is better equipped than wool in terms of logistics; and the availability of plants that can accept OEM orders is one of the strengths of the cashmere industry<sup>66</sup>.

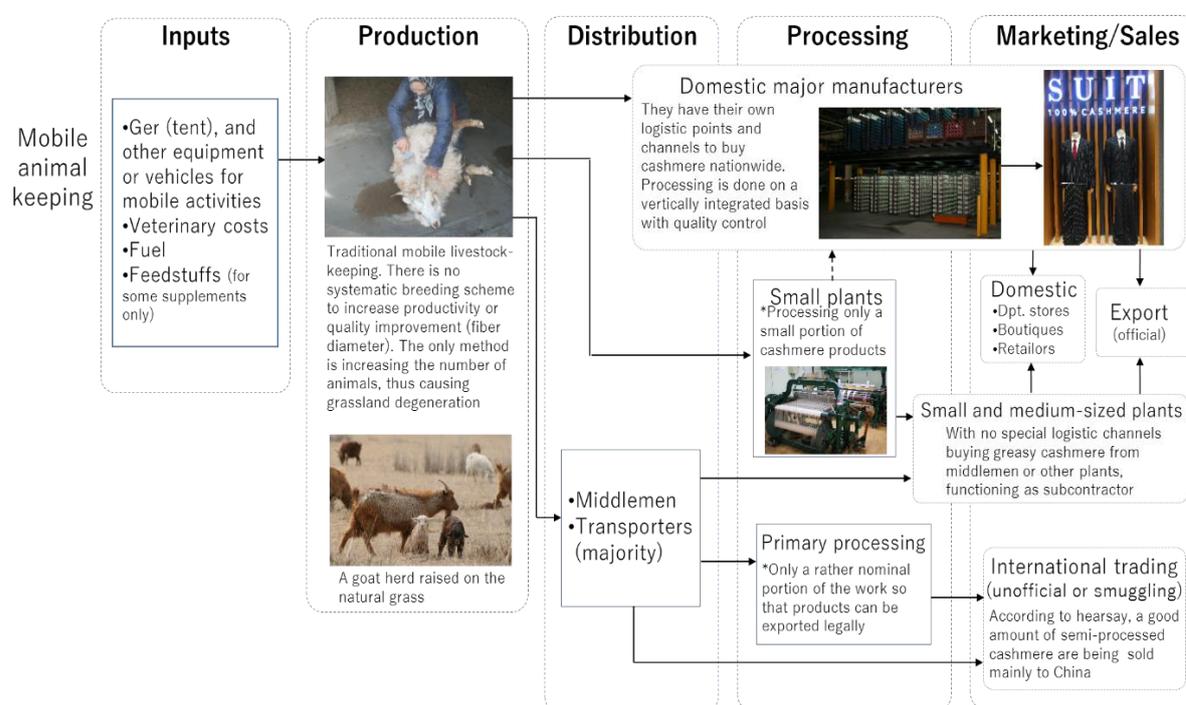


Figure 2.35 Cashmere supply chain in Mongolia

Source: JICA Project Team

## (2) Market situation

As mentioned above, the production of cashmere in 2021 was reported to be 10,092 tons, and the export of cashmere (HS 510211) from Mongolia in the same year was 9,129 tons<sup>67</sup>. This means that about 90% of cashmere is exported in a low-processed state. As with wool, semi-processed and finished cashmere products (e.g., clothing) are often exported, and the cashmere market is also dependent on overseas demand. Table 2.15 shows the total export value of major cashmere products (2017-2021) and the countries to which they are exported. The total export value of washed cashmere, which is the least processed, is the highest, with almost all of its export value ascribed to China. Carded or combed cashmere is exported to Italy, the U.K.,

<sup>66</sup> EVSEG, one of the industry's leading companies, is engaged in OEM production.

<sup>67</sup> Based on data from UN Comtrade. According to a cashmere trader, there are many illegal transactions of cashmere that are not included in the statistics, so the statistical data may be unreliable.

and other countries, while finished garments (jerseys, cardigans, etc.) are exported to the U.K. and Korea. The average unit price of washed cashmere is 31.1 USD/kg, which is literally an order of magnitude higher than that of wool (1.3 USD/kg); the unit price increases with the degree of processing<sup>68</sup>. The RCA for washed cashmere and carding/combing-treated cashmere is extremely high, which is not surprising, considering that 90% of washed cashmere traded in the international market comes from Mongolia (low-processed cashmere products are rarely exported from China, a major cashmere producing country). The RCA of finished products (jerseys, cardigans, etc.) also shows a high value of 17.5, indicating that cashmere garments are already internationally competitive.

Table 2.15 Total 5-year cashmere exports in Mongolia (2017-2021) and destination countries

Commodity	HS Code	Total (Thousand USD)	1 <sup>st</sup> Partner (Thousand USD)	2 <sup>nd</sup> Partner (Thousand USD)	Average Unit Price (USD/kg)	RCA*
Cashmere, not carded or combed	510211	Total: 1,278,432	China: 1,278,339	Germany: 22	31.1	2,230.8
Cashmere, carded or combed	510531	Total: 196,033	Italy: 161,892	UK: 18,570	77.9	1,749.1
Yarn of fine animal hair	5109	Total: 940	Russia: 314	Japan: 249	55.8	2.6
Jerseys, pullovers, cardigans, etc. made from cashmere	611012	Total: 60,024	UK: 11,809	Korea: 11,801	199.3	17.5

Source : JICA Project Team using data of UN Comtrade. \*Revealed Comparative Advantage

### (3) Issues and countermeasures

Table 2.16 shows the challenges faced by the cashmere supply chain in Mongolia and the measures taken to address them.

It is often pointed out that goat breeding should be conducted in cashmere production. In the case of cashmere, the key factors are the length and fineness of the fibers; the fibers from Mongolian goats tend to be thicker than those from goats from other countries. Therefore, it is necessary to improve the quality of cashmere through breeding<sup>69</sup>. In addition, cashmere is also harvested and shipped from old goats, which tend to have thicker fibers; the effective use of such low-productivity livestock must be re-considered.

As mentioned above, one of the distribution issues is that raw cashmere harvested from old goats is mixed with high-quality raw cashmere for shipment. Similar to the case of wool, distribution is dependent on middlemen, and it is necessary to establish a system that allows herders' cooperatives to collect and sort raw cashmere and ship and sell it to processors as a business; however, it should be noted that cashmere is much more difficult to handle than wool. This is because the unit price of cashmere is far higher than that of wool, and involvement in cashmere transactions requires adequate capital and credit, as well as the ability to be a "connoisseur" of cashmere quality. Therefore, herders' cooperatives must have strong partnerships with cashmere buyers (washers and other cashmere processors) to participate in the cashmere trade.

Notable issues in terms of processing and marketing are the low processing capacity and operation rate of

<sup>68</sup> Yarn of fine animal hair precisely includes raw wool other than cashmere, which makes the unit price per transaction lower.

<sup>69</sup> Restall, B. J. 2001. USAID cashmere breeding program evaluation: Mongolia. USAID.

processing plants. The number of processing plants capable of cashmere-combing is limited, and most of the raw cashmere is exported after washing. However, with the support of the Mongolian government's concessional loan program, a system capable of combing 10,000 tons of cashmere by 2023 will have been established in Mongolia<sup>70</sup>. The issue lies with the low operation rates, with annual factory operation rates ranging from 20-60%, depending on the processor<sup>71</sup>. This is due to several factors, including unstable order volumes, insufficient funds to purchase raw cashmere because of fierce competition in the raw cashmere market, and the inability to secure sufficient raw cashmere, which shortens the operating period of the plants. The reasons for the unstable order volumes vary from processor to processor; however, the main reason cited is the extremely high value of raw cashmere causing customers to leave when the market prices of cashmere rise, and the aging of spinning machinery, which makes it impossible to produce quality products that meet customer needs. Currently, the Mongolian government prohibits the export of raw cashmere, requiring at least "washed" cashmere for export; however, with the increase in combing processing capacity in Mongolia, the government is considering enforcing a system whereby only combed cashmere can be exported<sup>72</sup>. While efforts to increase the level of cashmere processing in Mongolia has been a long-cherished goal for those involved in the industry, there is also a need to promote the application of product development that incorporates changing international needs, particularly in terms of sustainability, environmental friendliness, and animal welfare, in addition to addressing the deterioration of raw cashmere.

Table 2.16 Issues and countermeasures in the cashmere supply chain

Process	Issues	Countermeasures
Production	<ul style="list-style-type: none"> <li>• <b>Unstable raw cashmere quality:</b> Breeding has not been done with consideration for raw cashmere quality. Older goat raw cashmere, which tends to have thicker fibers, is also harvested and distributed. This results in a mixture of raw cashmere with different fiber lengths, but currently there is almost no price gradient in terms of raw cashmere quality.</li> </ul>	<ul style="list-style-type: none"> <li>• Breeding of goats with good raw cashmere quality</li> <li>• Promoting the use of old goats with low productivity</li> <li>• Formation of a system for sorting or pricing raw cashmere according to the age of the goats</li> </ul>
Distribution	<ul style="list-style-type: none"> <li>• <b>Raw cashmere is not sorted:</b> Cashmere is shipped including raw cashmere harvested from old goats. Raw cashmere of different fiber lengths are mixed. Currently, there is almost no price gradient for raw cashmere quality.</li> <li>• <b>High cost of transporting raw cashmere</b></li> </ul>	<ul style="list-style-type: none"> <li>• Strengthening the capacity of herders' cooperatives on collecting, sorting, and marketing of cashmere.</li> <li>• Improvement of collection warehouses for herders' cooperatives</li> <li>• Provide training to herders' cooperatives on warehouse operations and management</li> <li>• Strengthening the network between cashmere buyers (washers and other processors) and herders' cooperatives</li> </ul>
Processing and Sales	<ul style="list-style-type: none"> <li>• <b>Difficulty in procuring quality raw cashmere:</b> The company is dependent on middlemen for raw cashmere procurement and is unable to procure raw cashmere of the desired quality. There are also factors such as competition with other middlemen from the same industry and other countries, and lack of funds for raw cashmere procurement</li> <li>• <b>Limited operation period:</b> The factory operation period is short due to factors such as limited raw</li> </ul>	<ul style="list-style-type: none"> <li>• Improve access to funds for procurement of raw cashmere</li> <li>• Improvement of storage facilities and introduction of a warehouse receipt system, thereby ensuring a year-round supply of raw cashmere.</li> <li>• Promote investment attraction in the spinning sector</li> <li>• Support for cashmere processing companies</li> </ul>

<sup>70</sup> <https://theubposts.com/mongolia-walked-one-step-back-from-advancing-cashmere-industry-development/>

<sup>71</sup> Hearing from officer in Dept. of light industry policy implementation and coordination, MOFALI

<sup>72</sup> <https://theubposts.com/mongolia-walked-one-step-back-from-advancing-cashmere-industry-development/>

Process	Issues	Countermeasures
	<p>cashmere procurement period, unstable demand, etc.</p> <ul style="list-style-type: none"> <li>• <b>Lack of industrial human resources in the cashmere processing sector:</b> Few industrial human resources are available to engage in the development of trend-setting cashmere products. Short operating period of plants and low retention of workers</li> <li>• <b>Sustainability/animal welfare conscious product manufacturing and marketing:</b> This needs to be taken into account when manufacturing final products and exporting, but there is a lack of human resources and initiatives in this area.</li> </ul>	<p>to exhibit at overseas expositions</p> <ul style="list-style-type: none"> <li>• Promote industry-government-academia collaboration on cashmere product development</li> <li>• Promotion of product development that incorporates an environmental/animal welfare perspective</li> </ul>

Source : JICA Project Team

#### (4) Direction of development

Figure 2.36 shows the results of the SWOT analysis of the cashmere supply chain in Mongolia. In addition to efforts to raise the profile of the Mongolian cashmere brand, further upgrading of equipment and expansion of production lines are necessary to increase the number of orders. Considering the increased processing capacity of spinning plants in recent years, efforts should focus on the production and export of semi-processed products (combing treatment and spinning). On the other hand, pastureland degradation by goats is a major weakness in view of the growing demand for environmentally friendly products, and to alleviate this situation, efforts should be made to control the number of livestock and increase productivity per animal. Additionally, it is essential to develop industrial human resources using technologies and knowledge related to manufacturing environmentally friendly products. To ensure the quality of semi-processed and finished products, a raw-cashmere supply chain must be established through a herders' cooperative that can handle raw cashmere quality control, rather than relying on its distribution by brokers.

		External Environment	
		Opportunity	Threat
<b>SWOT Analysis on Cashmere Supply Chain in Mongolia</b>		<ul style="list-style-type: none"> <li>• Strong international demand for raw cashmere, as cashmere itself is a rare resource.</li> <li>• Growing international demand for natural fibers with low environmental impact.</li> <li>• Diversified needs for natural fibers.</li> </ul>	<ul style="list-style-type: none"> <li>• Difficulty in competing with spinning companies from other countries, including China, in terms of manufacturing costs for general-purpose garments.</li> <li>• Increase in the number of livestock and lack of breeding management, resulting in a further decline in cashmere quality.</li> </ul>
		<ul style="list-style-type: none"> <li>• One of the world's leading producers of raw cashmere.</li> <li>• The quality of raw cashmere is very high.</li> <li>• There are spinning plants capable of producing semi-processed and finished products using cashmere, and the processing capacity is increasing with the support of the Mongolian government.</li> </ul>	<p><b>Strength × Opportunity</b></p> <ul style="list-style-type: none"> <li>• Promote activities to increase the visibility of the Mongolian cashmere brand.</li> <li>• Strengthen processing companies that can receive OEM orders as well as original brand products.</li> </ul>
Internal Environment	<ul style="list-style-type: none"> <li>• Raw cashmere is harvested and shipped from old goats and is not sorted based on raw cashmere quality.</li> <li>• Raw cashmere tends to deteriorate, resulting in thicker fibers.</li> <li>• Insufficient funds for processors to procure raw cashmere. Competition in raw cashmere procurement is fierce, making it difficult to procure high quality raw cashmere.</li> </ul>	<p><b>Weakness × Opportunity</b></p> <ul style="list-style-type: none"> <li>• Improvement of raw cashmere quality and reduction of raw material transportation costs through promoting raw cashmere management by herders' cooperatives.</li> <li>• Continued support for low-interest loans for raw cashmere procurement.</li> <li>• To produce environment-friendly and animal welfare products for adding market value.</li> </ul>	<p><b>Strength × Threat</b></p> <ul style="list-style-type: none"> <li>• Promote production of high value-added garments and blankets made of 100% cashmere.</li> <li>• Encourage the acquisition of international certifications to differentiate final products.</li> <li>• Increase the number of spinning plants and increase production and export of semi-processed products (combing and spinning).</li> </ul>
		<p><b>Weakness × Threat</b></p> <ul style="list-style-type: none"> <li>• Introduce a tax on livestock (already introduced in 2022), thereby controlling the increase in the number of livestock.</li> <li>• Strengthen linkages between herders ("herders' cooperatives") and cashmere processing companies.</li> <li>• Introduction of value chain financing (a financing system based on guaranteed purchase by cashmere buyers).</li> </ul>	

Figure 2.36 SWOT analysis of cashmere supply chain

Source: JICA Project Team

### 2.3.7 Leather

#### (1) Current supply chain

All leather products are made from tanned raw hides obtained from livestock slaughtered for meat. Raw hides are therefore, in surplus in the meat supply chain and are obtained from slaughterhouses where livestock are processed. However, Mongolia differs from other countries in this respect. Raw hides, the raw material for the leather industry, are generated not only from slaughterhouses but also from herder households. When herders ship their livestock, they sometimes sell the animals live; however, in other cases, they sell raw hides after slaughter. In addition, not all livestock shipped live are processed in regular slaughterhouses. In Mongolia, the percentage of livestock slaughtered outside slaughterhouses and processed irregularly is extremely high; in many cases, the primary treatment and storage conditions of surplus raw hides are not consistent, leaving them vulnerable to deterioration. As a result, the Mongolian leather industry tends to procure raw hides not only from formal livestock processing facilities but also from other sources; the quality of the hides tends to be unstable due to inconsistent handling.

Figure 2.37 shows the current status of the leather supply chain. Raw hides are transported to tanneries and processors of the final leather product through various channels, including herders, brokers, and slaughterhouses. The raw hides are then dehaired and sterilized before tanning. In Mongolia, mineral-tanning is common, and 70-75% of the raw hides are chromium-tanned to produce semi-processed wet-blue leather<sup>73</sup>. In addition to cases where wet-blue leather is exported in its raw state, there are cases where finished products such as wallets and bags are manufactured after dyeing, shaping, sewing, and other processes; however, raw state export is by far the largest.

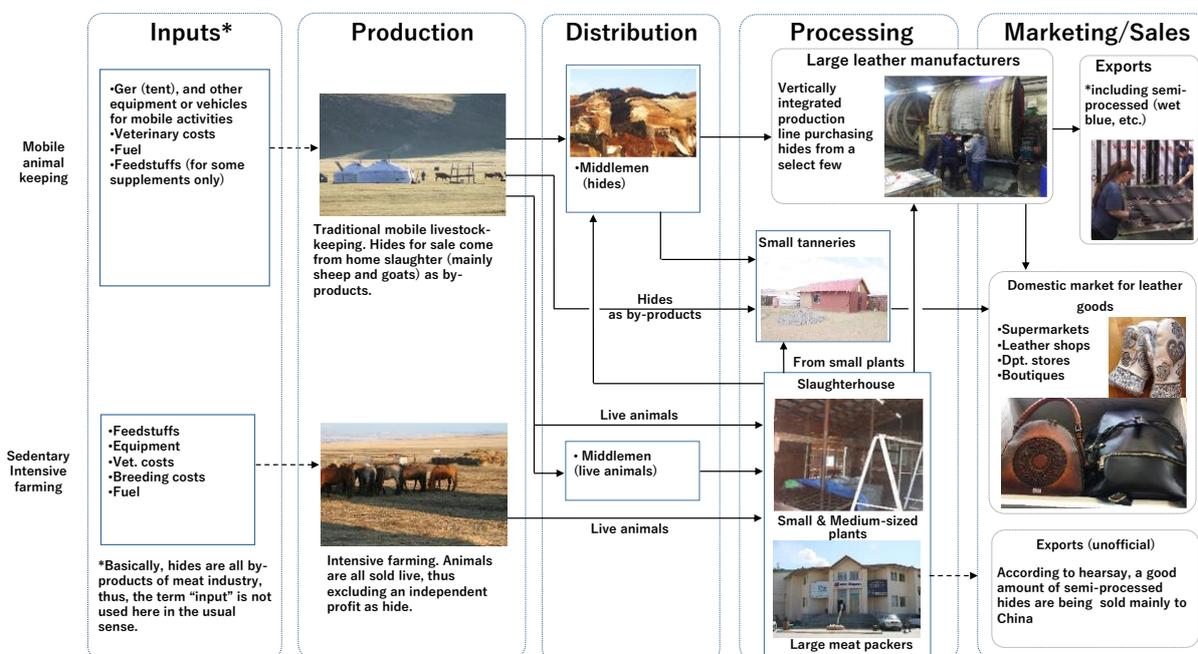


Figure 2.37 Leather supply chain in Mongolia

Source: JICA Project Team

<sup>73</sup> JICA, 2019, Report on the completion of the basic research project on the branding of leather using the lacette tanning technique, Mongolia

## (2) Market situation

As of 2012, 8.77 million pieces of raw hide were shipped from Mongolia, and this figure increased to 17.98 million pieces by 2021, more than doubling the country's production in 10 years<sup>74</sup>. Assuming the number of raw hides shipped equals the number of animals slaughtered, the number of horses, cattle, sheep, goats, and camels, in that order, is 633,000, 943,000, 9,653,000, 6,671,000, and 58,000 heads, respectively; even if the estimated amount of raw hide from each animal is 10, 10, 4, 4, and 12 kg, respectively, it would total to an approximate of 78,000 tons. However, only approximately 20,000 tons are actually processed. The average annual volume of raw hides and wet-blue leather exported during the five-year period from 2017 to 2021 was approximately 23,000 tons on a raw-hide weight basis<sup>75</sup>. The data used may be inaccurate, and it is not clear how realistic the above estimate is. However, this being the case, suggests that almost all hides are exported as raw hides or wet-blue leather. If we include the export of finished products such as wallets and bags, we can see that leather, like wool and cashmere, is a commodity specialized for the export market.

Table 2.17 shows total leather exports and export destinations for 2017-2021. Mongolia exports the largest amount of leather as raw hides and wet-blue leather, mostly to China. On the other hand, Japan and South Korea are the main export destinations in addition to China, for finished leather products. The unit price for raw hides to wet-blue leather is low, ranging from 0.3 to 1.8 USD/kg, and increases with the degree of processing. On the other hand, the RCA for finished products is extremely low, ranging from 0.01 to 0.04, indicating that the competitiveness of leather products in Mongolia is almost nonexistent.

Table 2.17 Total 5-year export value of leather in Mongolia (2017-2021) and export destination countries

Commodity	HS Code	Total (Thousand USD)	1 <sup>st</sup> Partner (Thousand USD)	2 <sup>nd</sup> Partner (Thousand USD)	Average Unit Price (USD/kg)	RCA*
Raw hides and skins of bovine and equine animals	4101	Total: 5,978	China: 5,967	Germany: 10	0.3	0.9
Raw hides and skins of other animals	4103	Total: 499	USA: 305	China: 70	1.4	0.6
Tanned or crust hides and skins of bovine and equine animals	4104	Total: 28,095	China: 19,415	Italy: 4,086	1.8	3.9
Tanned or crust skins of sheep and lambs	4105	Total: 9,780	China: 9,087	Netherland: 212	0.9	20.7
Tanned or crust hides and skins of other animals	4106	Total: 20,797	China: 9,343	Italy: 5,730	1.5	37.1
Leather further prepared after tanning or crusting	4107	Total: 57	China: 33	Korea: 19	7.3	0.00
Trunks; suit, camera, jewelry, cutlery cases of leather	4202	Total: 1,994	Japan: 1,066	China: 402	33.7	0.01
Articles of apparel and clothing accessories, of leather or of composition leather	4203	Total: 621	China: 546	Korea: 11	53.3	0.04

Source : JICA Project Team using data of UN Comtrade \*Revealed Comparative Advantage

<sup>74</sup> NSO Mongolian Statistical Yearbook 2021

<sup>75</sup> Estimated processing yield from raw hides to wet-blue leather for cattle, horses, and camels as 50%, and sheep and goats as 30%. UN Comtrade was applied for export volume data.

### (3) Issues and countermeasures

Table 2.18 summarizes the challenges in the leather supply chain and measures taken to address them.

The main issue in raw hide production is the low quality of raw hides. This is due to scratches and perforations caused by external parasites during the rearing process and during the cutting process at the slaughter stage, significantly reducing the commercial value of the hides. According to the head of the herders' cooperative that collects and sells hides in Khovd aimag, raw hides harvested by herders are subject to new scars during the cutting process. Because the hides are cut into small pieces, the unit sale price is only about 1,000 MNT per piece, making it difficult to find buyers for the hides<sup>76</sup>. To solve these problems, proper rearing management of livestock, slaughtering, and skinning by specialized human resources is necessary. However, many herders have difficulty accessing formal slaughterhouses, making it difficult to find a solution to this problem. At the very least, it is necessary to establish a system whereby herders' cooperatives can provide slaughter services with appropriate equipment when slaughtering livestock for their own consumption.

An important issue is the storage of raw hides. This is true not only for slaughtering by herders but also for small-scale slaughterhouses, where harvested hides are often piled out in open air. This causes sand, dust, insect infestations, and other problems that reduce the commercial value of raw hides. For effective utilization of abundant raw hides, it is necessary to establish intermediate logistics warehouses with proper management of the hides; in consideration of access by herders, it is desirable to have a system in which herders' cooperatives can manage these warehouses.

In terms of processing and marketing, it is difficult to procure high quality raw hides due to the production and distribution processes. In addition, 75% of raw hides in Mongolia are chrome-tanned; the current global trend favors environmentally friendly vegetable-tanning over chrome-tanning, particularly for exports<sup>77</sup>. Therefore, the Mongolian leather industry must promote environmentally friendly tanning techniques and develop human resources for this purpose.

Table 2.18 Issues and countermeasures in the leather supply chain

Process	Issues	Countermeasures
Production	<ul style="list-style-type: none"> <li>• <b>Poor quality of raw hides:</b> The rate of wear and tear of raw hides due to scratches caused by physical contact and perforation by external parasites is very high and significantly reduces the value of the product.</li> <li>• <b>Poor skin cutting technology and small pieces of raw hides:</b> Slaughtering and skinning by unprofessional herders often results in scratches on raw hides and small pieces of raw hides, which reduces the value of the product.</li> </ul>	<ul style="list-style-type: none"> <li>• Appropriate feeding management and parasite control</li> <li>• Ensure slaughtering by specialized contractors or establish a system whereby herders' cooperatives provide slaughtering services.</li> </ul>
Distribution	<ul style="list-style-type: none"> <li>• <b>Poor storage of raw hides:</b> Harvested hides are sometimes left in open piles for a certain amount of time, causing them to become covered in sand and dust and reducing their commercial value.</li> </ul>	<ul style="list-style-type: none"> <li>• It is desirable to develop an intermediate logistics warehouse for raw hides, which should be managed by herders' cooperative or logistics companies.</li> </ul>
Processing and Sales	<ul style="list-style-type: none"> <li>• <b>Difficulty in procuring quality raw hides:</b> Inappropriate raw hide management at the production</li> </ul>	<ul style="list-style-type: none"> <li>• Development of storage facilities and introduction of a warehouse receipt system,</li> </ul>

<sup>76</sup> If the skin is cut using appropriate equipment to avoid fragmentation, it can be sold for 15,000 MNT/piece, and it is very easy to find a buyer.

<sup>77</sup> JICA, 2019, Report on the completion of the basic research project on the branding of leather using the lacette tanning technique, Mongolia

Process	Issues	Countermeasures
	<p>and distribution stages makes it difficult to procure good quality raw hides.</p> <ul style="list-style-type: none"> <li>• <b>Low raw hide utilization rate:</b> Inadequate raw hide management during the production and distribution stages results in the discarding of hides that should have been produced.</li> <li>• <b>Low number of industrial human resources in the leather processing sector:</b> There are few industrial human resources who can engage in the development of trend-setting leather products. Factory operation period is short and worker attrition rate is high.</li> <li>• <b>Environmentally conscious/animal welfare-conscious product manufacturing and marketing:</b> This needs to be taken into consideration when manufacturing final products and exporting, but there is a lack of human resources and initiatives in this area.</li> </ul>	<p>which will ensure a year-round supply of raw hides.</p> <ul style="list-style-type: none"> <li>• Promote investment in the leather sector</li> <li>• Support for leather companies to exhibit at overseas expositions</li> <li>• Promote industry-government-academia collaboration on leather product development</li> <li>• Introduce a system to support students in the leather processing field at vocational training schools</li> <li>• Promote product development that incorporates an environmental/animal welfare perspective and secure industrial human resources for this purpose</li> </ul>

Source : JICA Project Team

#### (4) Direction of development

Figure 2.38 shows the results of a SWOT analysis of the leather supply chain in Mongolia. In recent years, the number of companies with large-scale livestock operations in the suburbs of Ulaanbaatar has increased, as has the number of livestock passing through formal slaughterhouses. It is of primary importance to strengthen cooperation between livestock enterprises, slaughterhouses, and leather processors and to promote the production of finished products using high-quality raw hides. However, to make effective use of the abundant raw hide resources without discarding them, it is essential to make herder cooperatives and logistics companies that provide slaughtering, collection, and sales services accessible to the herders by making necessary capital investments and building capacity. Overall, the leather industry needs to switch from chrome tanning to vegetable tanning at the earliest possible, and it is essential to develop the required human resources.

		External Environment	
		Opportunity	Threat
Internal Environment	<p><b>Strength</b></p> <ul style="list-style-type: none"> <li>• Abundant raw hide resources.</li> <li>• Large-scale livestock companies are increasing and can serve as a base for high-quality raw hides production.</li> <li>• Some private companies have formed leather clusters and are implementing coordinated efforts to promote exports.</li> </ul>	<p><b>Strength × Opportunity</b></p> <ul style="list-style-type: none"> <li>• Promote the production of high value-added products using high-quality raw hides produced under large-scale livestock operations.</li> <li>• Strengthen companies that can receive OEM orders as well as own-brand products.</li> </ul>	<p><b>Strength × Threat</b></p> <ul style="list-style-type: none"> <li>• Support leather clusters and promote the production of environmentally friendly semi-processed and finished products.</li> <li>• Strengthen the network between raw hide producers and processors, and create a system to ensure that better quality raw hides reach processors.</li> </ul>
	<p><b>Weakness</b></p> <ul style="list-style-type: none"> <li>• Low quality of raw hides: Pits and scars caused at the rearing and slaughter stages reduce the value of the product.</li> <li>• Poor storage conditions of raw hides at the distribution stage.</li> <li>• Delays in addressing sustainability, environmental concerns, animal welfare, etc., and environmental pollution issues due to the mainstream use of chrome-tanning.</li> </ul>	<p><b>Weakness × Opportunity</b></p> <ul style="list-style-type: none"> <li>• Establishment of a system of slaughter, collection of raw hides, and marketing by herders' cooperatives.</li> <li>• Promotion of vegetable tanning technology.</li> <li>• To produce products that are environmentally friendly and animal friendly, and to develop human resources in the leather industry.</li> </ul>	<p><b>Weakness × Threat</b></p> <ul style="list-style-type: none"> <li>• Introduce a tax on livestock (already introduced in 2022), thereby controlling the increase in the number of livestock.</li> <li>• Strengthen linkages between herders ("herders' cooperatives") and hide processing companies.</li> </ul>

Figure 2.38 SWOT analysis of leather supply chain

Source : JICA Project team

### 2.3.8 Honey

#### (1) Current supply chain

For a long time, mainstream honey distribution in Mongolia involved direct sales by beekeepers to consumers, with instant sales at events and by the roadside. Beekeepers were not concerned about quality standards and sanitation control, and they sold "what they could, when they could, and as much as they could" according to their own circumstances, resulting in an unstable supply. However, after COVID-19, imports of packaging materials became difficult, and shortages continued, while the global inflation trend and depreciation of the MNT caused packaging container prices to skyrocket. In addition, with the expansion of supermarkets, an increasing number of consumers are purchasing honey from supermarkets; however, supermarkets require a stable supply of honey. Because it is difficult for individual beekeepers to cope with this situation, distribution through honey companies is increasing. As wholesale distribution to companies grows, beekeepers appear to realize the benefits of lower marketing costs and stable sales revenues. In fact, the amount of honey procured by Company A in 2019 was 0.2 tons, and by 2022 it was 13.7 tons; during the same period, Company B's procurement also expanded from 2 to 5 tons. In addition, looking at Mongolian honey on supermarket shelves, there has been an increase in both the number of companies and variety of products.

Honey quality has also been improving, lately. Some roadside honey or that found in local markets has a low sugar content, but such honey has been drastically reduced in major supermarket sales. Several honey companies have acquired HACCP certifications (3 out of 15 companies in C supermarkets), indicating a growing awareness of sanitation management.

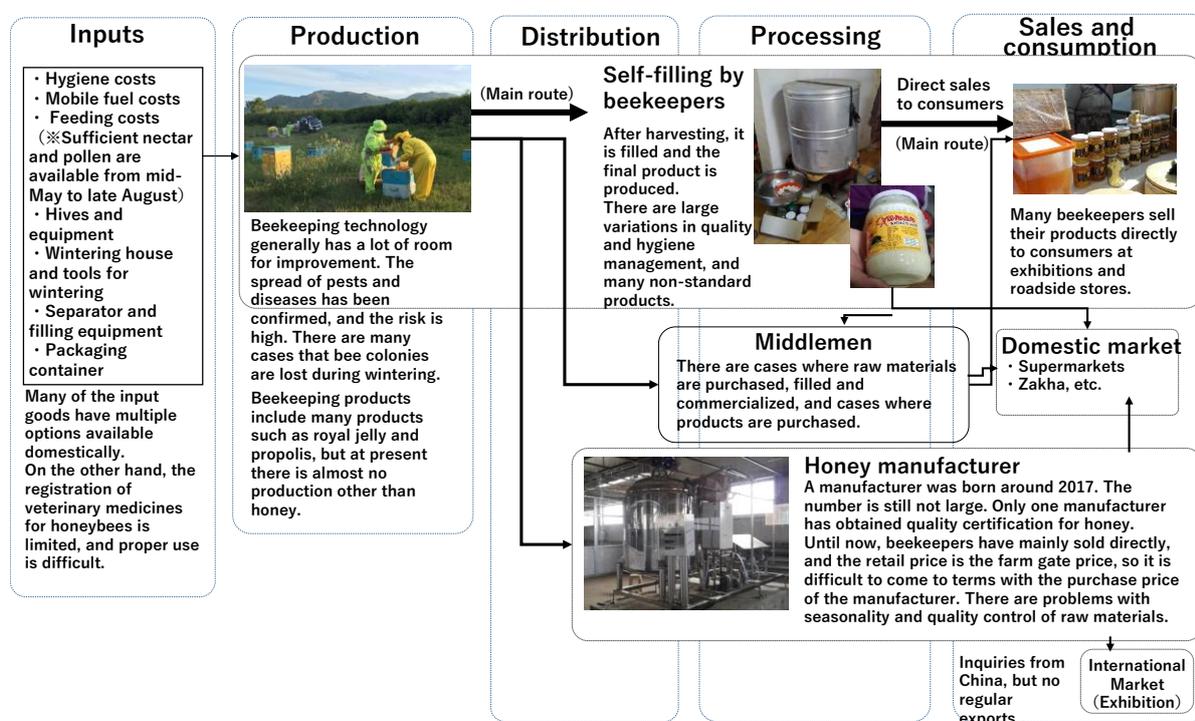


Figure 2.39 Honey supply chain in Mongolia

Source: JICA Project Team

**(2) Market situation**

Honey is currently focused on the domestic market but is expected to target international markets in the future. In the domestic market, consumption continues to be lower than the sum of production and imports (Figure 2.40). The 2020 and 2021 trends were strongly influenced by COVID-19, and it is assumed that many beekeepers had honey stocks on hand in 2020 because of the unavailability of packaging containers and strict cross-border restrictions in the country. The increase in production in 2021 must be subtracted from the impact of the previous inventory releases. The year 2020 also saw a sharp decline in honey imports, which returned to previous levels immediately after the COVID-19 convergence. COVID-19 presented an opportunity for import substitution; however, owing to restrictions in the production and distribution environment, it could not be fully exploited.

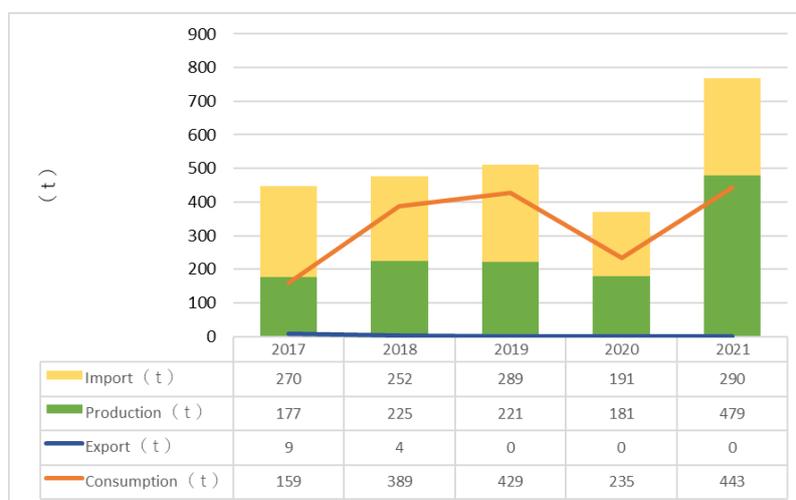


Figure 2.40 Mongolian honey production and market size

Source: Production was calculated by FAOSTAT, imports and exports by ITC, and consumption by FAOSTAT per capita annual honey consumption multiplied by population. Population is based on NSO Mongolian Statistical Yearbook 2021. All figures are accessed March 14, 2023.

There has been no change in the international market for honey since 2017, with China being the dominant player in the market, with an average unit price of approximately USD 3/kg and New Zealand honey at around USD 25/kg. The high New Zealand honey price is due to the unique functionality and management system of Manuka honey, which cannot be imitated overnight (Figure 2.41).

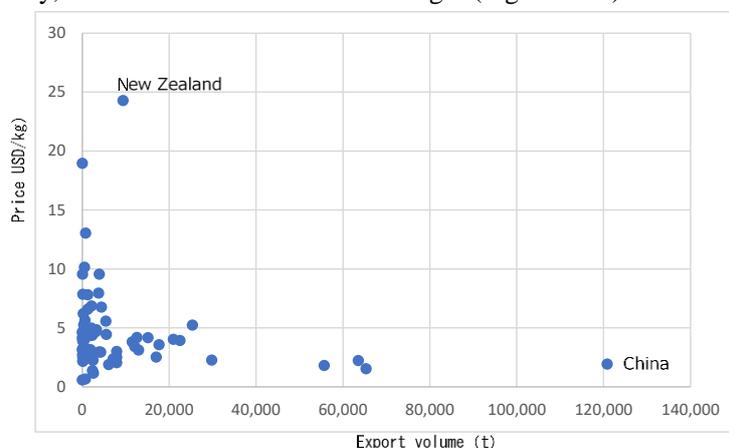


Figure 2.41 International honey market (2019)

Note: Calculated for 91 countries exporting 25 tons or more  
 Source: Compiled by survey team from ITC export data

Mongolian honey has a beekeeper's gate price of USD 4.5-5.7<sup>78</sup>. Although not price-competitive, the Mongolian honey industry must pick up its markets and see opportunities by adding value other than price, given the weak MNT.

### (3) Issues and countermeasures

There are three major challenges to Mongolian honey production: (1) unstable production, (2) unstable quality, and (3) high cost (Table 2.19). Inadequate quarantine and veterinary services can lead to pest infestations, reduced production, and threaten food safety. The limited production season, high variability of nectar sources, and low productivity of many small beekeepers are the major factors causing supply chain instability and high costs. In Mongolia, methodical techniques are only now being organized, and there is still great variation in the rearing and pest and disease control techniques of individual beekeepers. The fact that VC intermediary organizations responsible for processing, distribution, and sales, such as companies and beekeepers' cooperatives, have not been sufficiently nurtured greatly hinders supply and quality stability, leading to high costs. Furthermore, the market awareness of honey quality standards is low as is the consumption. Market pressure is required as it is most effective for upstream improvements, especially quality improvement and branding. In Ulaanbaatar, the main domestic market, 46% of consumers buy honey from supermarkets<sup>79</sup>. In supermarket sales, honey that meets the quality standards must be delivered without interruption. For export, it is necessary to ship honey in substantial lots and produce safe honey that meets international standards. Regardless of the target market, a stable supply in terms of both quantity and quality is of utmost importance.

Table 2.19 Issues and countermeasures in the honey supply chain

Process	Issues	Countermeasures
<b>Input</b>	<ul style="list-style-type: none"> <li>• <b>Lack of input materials and proper pest and disease control:</b> Improper use of bee chemicals in some cases. High risk of bee colonies being imported without proper quarantine, leading to the spread of pests and diseases.</li> </ul>	<ul style="list-style-type: none"> <li>• Expansion of domestic production of chemicals and the start of registration and handling of imported chemicals</li> <li>• Strengthening of quarantine</li> </ul>
<b>Production</b>	<ul style="list-style-type: none"> <li>• <b>Pests and diseases tend to spread:</b> Few veterinarians with expertise in beekeeping are available. Pest and disease control technologies are limited and not disseminated.</li> <li>• <b>Production is unstable:</b> Limited production season and large fluctuations in nectar sources due to climate. Beekeepers are small and there is a large variation in beekeeping technologies.</li> <li>• <b>High production costs:</b> Low productivity. Short production season. Limited access to finance makes it difficult to scale up production.</li> </ul>	<ul style="list-style-type: none"> <li>• Veterinary Training</li> <li>• Improvement of bee-rearing technologies</li> <li>• Stabilization of nectar sources through linkages with agriculture and nomadism</li> <li>• Strengthening beekeepers' financial capacity, developing and introducing new financial systems, networking with financial institutions</li> </ul>
<b>Distribution &amp; Processing</b>	<ul style="list-style-type: none"> <li>• <b>High Distribution &amp; processing cost:</b> Many small beekeepers. Excessive inventory burden on companies. Low utilization of filling plants.</li> <li>• <b>Unstable supply:</b> Many small beekeepers sell directly, production is concentrated at certain times of the year, and companies and distribution organizations are not well developed.</li> <li>• <b>Materials for goods depend on imports:</b> Commercial materials such as bottles are imported, which is a stumbling block to product development because there</li> </ul>	<ul style="list-style-type: none"> <li>• Expanding sales through organized marketing, fostering corporate and beekeeper organizations, and guaranteeing payment through organizations</li> <li>• Drawing customers to production areas through linkages with tourism</li> <li>• Introduction of a "KAIZEN" approach</li> <li>• Development and stabilization of nectar sources through cultivation</li> </ul>

<sup>78</sup> USD 1 ≙ MNT 3,536.39 (as of 15 March, 2023)

<sup>79</sup> MONMAP "Honey Market Survey" conducted in 2021.

Process	Issues	Countermeasures
	are few options.	<ul style="list-style-type: none"> <li>Strengthening the financial capacity of enterprises, VC financing</li> </ul>
<b>Quality Control</b>	<ul style="list-style-type: none"> <li><b>Quality control is not thorough:</b> Residue risk due to the fact that the chemicals used are described in a foreign language with unclear instructions for use and pesticide application information is not received; awareness of food hygiene and standards compliance is low.</li> <li><b>Quality is unstable:</b> Market demands and needs are not reaching beekeepers, processing technologies are poor and taste is inconsistent.</li> </ul>	<ul style="list-style-type: none"> <li>Enhancement of veterinary supervision</li> <li>Collaboration and information sharing with agriculture</li> <li>Introduce honey GAP and provide basic sanitation training</li> <li>Facilitate contracts between companies and beekeepers</li> <li>Conducting market needs surveys</li> <li>Promoting capital investment by beekeepers and companies</li> </ul>
<b>Sales</b>	<ul style="list-style-type: none"> <li><b>Lack of brand power:</b> Few sophisticated new products, consumers are unaware of honey, indifferent to differences in flavor, no product line in quality and price range for daily use, no product pyramid built, and distrust of fraudulent honey or fake production areas.</li> <li><b>Underdeveloped domestic market:</b> Low per capita consumption, low awareness of quality standards (consumers and beekeeping stakeholders), indifference to differences in honey (consumers and beekeeping stakeholders)</li> <li><b>Cannot export:</b> Lack of information on export markets, lack of progress in negotiations, private sector needs, issues, and current situation not communicated to government, complicated export procedures, many errors in documentation</li> </ul>	<ul style="list-style-type: none"> <li>Promotion of product development</li> <li>Publicity and educational activities by clusters</li> <li>Development of stable nectar sources with high flow, expansion of monofloral honey</li> <li>Introduction of honey GAP, ensuring traceability</li> <li>Organization of events to expand consumption, and link with tourism and food service</li> <li>Simplification of export procedures, one-stop service, formatting of all documents</li> </ul>

Source : JICA Project Team

### Challenges for honey companies

To stabilize the quantity and quality of honey, there are limits to the service by individual small beekeepers in processing and distribution, and actors that collect and process honey from beekeepers, such as honey companies (collectors), are important. In the MONMAP Pilot Activity (PA), two companies were monitored for honey procurement, and the situation suggests the large burden faced by collectors. A look at the monthly procurement trends for the 2022 season for PA participating company "A" shows that about 75% of the annual procurement volume is concentrated in the three months of August-October, with about 42% procured in September. This was sold over the year, with some fluctuations in sales. Note that year-end inventories amounted to more than 30% of the procurement volume, and in the month with the highest inventory, the company theoretically held the equivalent of 90% of total annual sales volume. Companies procure honey from beekeepers on a cash-on-delivery basis. Sales are most often made by selling on credit to large supermarkets, so the companies bear the difference between procurement and sales. Working capital requirements are excessive relative to profits, forcing the companies to borrow. Efforts should be made by all parties concerned to reduce the burden on companies by guaranteeing payment by clusters and other organizations, and by beekeepers' organizations to underwrite inventory. In Mongolia, where the production season is short, similar difficulties exist in industries where competition for procurement is intense. It is desired to examine how the legal system for inventory leveling, payment, and fund collection within the VC, as well as corporate support in the financial sector, are implemented across industries.



Honey sales ratio and procurement ratio of Company "A" by month (%)

(4) Direction of development

<b>SWOT analysis of honey supply chain</b>	<b>external environment</b>	
	<b>opportunities</b>	<b>threats</b>
<b>Internal environment</b>	<ul style="list-style-type: none"> <li>Chinese food imports remain strong.</li> <li>Tourist awareness of honey is on the rise. Mongolian government is increasingly focusing on tourism development</li> <li>There is a niche market for honey in developed countries</li> <li>Preferential tax rates in Japan-Mongolia EPA and EU</li> <li>Good image of Mongolia among domestic and foreign consumers</li> <li>Growing food safety and environmental awareness in the market</li> <li>Expansion of e-commerce and promotion of transportation network development</li> </ul>	<ul style="list-style-type: none"> <li>Severe natural environment (unstable flowering, short honey harvesting period, long and cold overwintering period)</li> <li>Intense competition from imports and foreign markets</li> <li>Pest and disease damage is increasing and becoming more serious</li> <li>Easy availability of cheap honey from neighboring countries, strong temptation to disguise production origin</li> <li>Free entry of bee colonies from neighboring countries (risk of pests and inappropriate chemicals)</li> </ul>
	<b>strengths</b>	<b>strengths×opportunities</b>
	<ul style="list-style-type: none"> <li>Growing trend in supply</li> <li>Development of honey traceability system and honey GAP</li> <li>Veterinary monitoring system in place</li> <li>Honey clusters established, public-private and industrial partnerships possible</li> <li>Honey Bee Health Research Laboratory exists to develop rearing technologies</li> <li>Existence of a laboratory registered with the Japanese Ministry of Health, Labor and Welfare</li> <li>Existence of nectar sources with a good image</li> <li>Possible linkage with nomadism and agriculture</li> </ul>	<ul style="list-style-type: none"> <li>Create safety and trust through traceability, honey GAP, and veterinary monitoring</li> <li>Branding through tourism</li> <li>Continue/start export negotiations with China and EU to expand sales channels</li> <li>Continue exports to Japan by utilizing EPA and registered inspection agencies</li> </ul>
	<b>weaknesses</b>	<b>weaknesses×opportunities</b>
<ul style="list-style-type: none"> <li>Limited opportunities for systematic learning of technologies</li> <li>High food safety risks (few registered chemicals, quarantine not functioning, information on pesticide application in the field not reaching beekeepers)Unstable supply in terms of quantity and quality, honey that does not meet international standards</li> <li>Inputs and commercial materials are almost exclusively imported, lack of/few options</li> <li>High production costs due to severe climate, high transportation costs due to large land area and landlocked country</li> <li>Lack of international branding (low interest in flavor, low product grade, lack of publicity)</li> <li>Many small and micro beekeeping operations, lack of access to finance, Difficult to expand scale</li> <li>Low domestic honey consumption, mainly table honey, monotonous market</li> <li>Production sites are insensitive to consumer needs</li> <li>Excessive administrative costs. Inadequate market information. Export procedures are complicated and inappropriate.</li> </ul>	<ul style="list-style-type: none"> <li>Increased food safety efforts due to market pressures</li> <li>Cooperation with the tourism industry (reduction of transportation costs by allowing tourists to purchase honey at beekeeping sites, acquisition of consumer needs through contact with tourists, possibility of providing products to be consumed on the spot to increase consumption and unaffected by the quality of commercial materials, no need for export procedures, development and cultivation of export destination customers)</li> <li>Utilization of personal imports through cross-border EC (no need for export procedures)</li> </ul>	
	<b>strengths×threats</b>	<b>weaknesses×threats</b>
	<ul style="list-style-type: none"> <li>Stabilize the nectar source and establish Mongolia's uniqueness by linking with agriculture and nomadism</li> <li>Strengthen veterinary monitoring system and development capacity of bee rearing technologies to cope with Mongolia's severe climate and expansion of pests and diseases.</li> <li>Increase added value through quality assurance.</li> </ul>	<ul style="list-style-type: none"> <li>Improve productivity and reduce production costs by strengthening technical capabilities</li> <li>Establishment of a quality assurance system by strengthening the collection function, strengthening access to markets and finance, and sharing market information</li> <li>Reduction of procurement costs for input materials and commercial materials through organization or strengthening of VC stakeholder relationships</li> <li>Improvement of environment for export promotion</li> <li>Preventing the spread of pests and diseases damage by strengthening quarantine functions, curbing inappropriate use of chemicals, and reducing disguised place of production</li> </ul>

Figure 2.42 SWOT analysis of honey supply chain

Source: JICA Project Team

The production volume for 2021 should be considered included in the release of the previous year's inventory; however, it is still increasing. Further industrial development can be realized by expanding the market. If a stable honey supply is achieved, the potential for market expansion increases. There is room for consumption expansion in the domestic market. Mongolia's annual per capita honey consumption is less than two-thirds of the world average and only one-sixth of that of Europe and the United States.<sup>80</sup>

Beekeeping is currently struggling with the spread of pests and diseases worldwide; therefore, Mongolia does not have to worry about bee diseases or pests invading other countries, such as foot-and-mouth disease in the case of even-toed ungulates. The high sugar content and stability of honey make it an easy food product for export. Honey is a luxury item, and the international market has a niche need for taste, rarity, and specialty that is good for health and has value beyond its price. However, the characteristics of honey make it susceptible to counterfeiting such as disguising the place of origin. Additionally, to meet the interests of the international market, food safety considerations are important, and quality assurance and traceability should be considered.

Beekeeping is not only a promising sustainable industry in rural areas, but also contributes to agricultural productivity and pastureland conservation. It also fits well with the current tourism industry, which is oriented toward "learning" and "sustainability." Securing a stable nectar source is especially important in the severe Mongolian climate; however, the problem of nectar sources can be alleviated by examining agriculture, nomadism, and the beekeeping industry.

**BOX : Honey Market Research (Survey conducted in 2021)**

According to the honey market survey conducted by MONMAP, the use of honey by Mongolian consumers is very simple: more than 90% of consumers said they dissolve it in hot water and drink it, but other uses include addition to tea (14.3%) and milk (12.2%), cooking (10%), and as an accompaniment (5%). More than 64% of consumers purchase their honey in supermarkets or nearby stores, with 46.1% of consumers choosing supermarket chains and 17.9% choosing supermarkets and neighborhood stores for purchase. Recently, several large supermarkets have opened in UB city. It is expected that the number of people purchasing honey at supermarkets will further increase in the future. The number of Mongolian honey products on supermarket shelves is increasing, indicating the industry's efforts to meet consumer needs. On the other hand, 55% of consumers buy for "quality" and 38% for "flavor," while 28% of consumers do not know how to choose "good honey". In Japan, beekeepers are offering recipes for honey flavors. They are also very diligent in disseminating information on the raising and managing of bees. Many beekeepers work with neighborhood patisseries and restaurants to have their honey used. Honey fairs are held in various regions and events are held to bring together various beekeepers and honey companies in Japan. There is still more that the Mongolian beekeeping industry can do to expand consumption.



Honey Cake by Kuroda Apiary

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<sup>80</sup> FAOSTAT 2019 (Accessed March 2023)

### 2.3.9 Other agricultural products (Mushroom, Fish)

#### (1) Mushroom

##### 1) Current Supply Chain

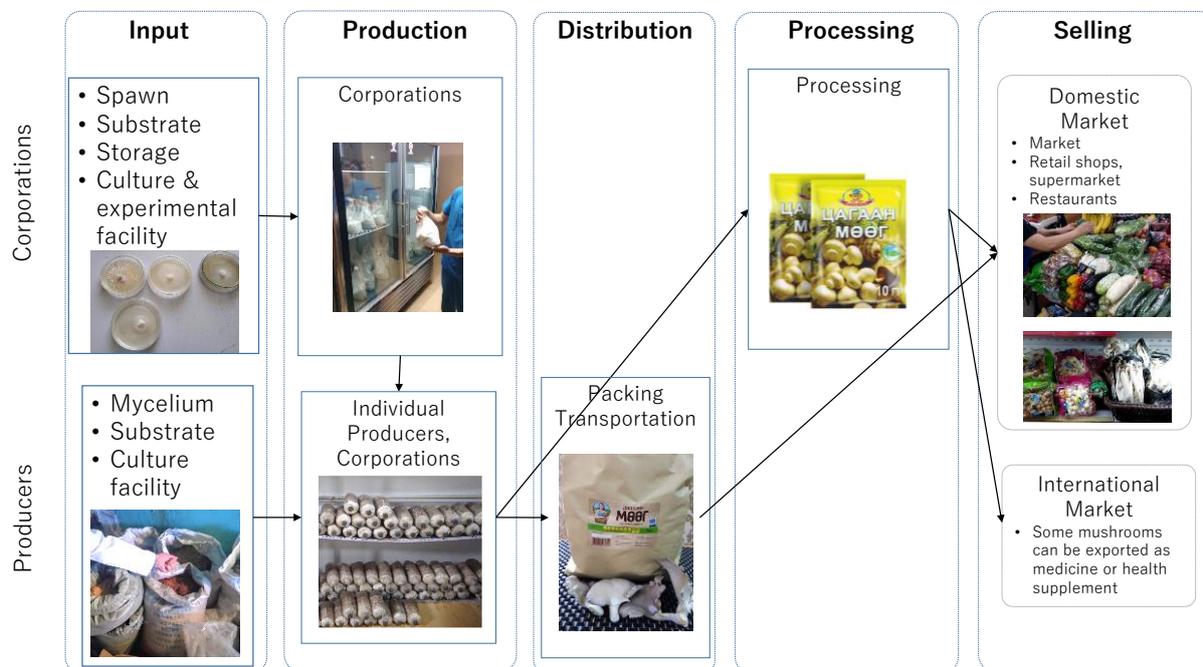


Figure 2.43 Mushroom supply chain in Mongolia

Source: JICA Project Team

Mushrooms such as shiitakes and champignons are commonly sold in Ulaanbaatar. Currently, most of these products are imported from China. As there is a certain demand for mushrooms among urban residents, there is room to consider the possibility of domestic production as a substitute for imports.

Recently, oyster mushrooms have been produced in Mongolia using the bed culture method. Domestic mushrooms are fresher and safer than imported products, and their demand in restaurants and other establishments is increasing. Mushroom production is promoted by a system in which small-scale companies involve ordinary producers. These individuals and companies have come together to establish a mushroom value chain association to expand production and consumption. In 2022, they produced 2.2 tons of oyster mushrooms and king oyster mushrooms. In addition, training is being conducted in Ulaanbaatar and other aimags, of approximately 20 persons per month, to increase the number of mushroom producers; thus, production is expected to expand. Other companies produce mushrooms besides the association, but their total production is currently estimated at less than 10 tons per year.

##### 2) Market situation

Most fresh and dried mushrooms sold in Mongolia are imported from China. The main varieties are shiitake, enoki, shimeji, king oyster, and champignon. They are sold in urban markets, retail stores, and supermarkets, and are prepared and served in restaurants and fast food shops. Other wild white

mushrooms, such as tsaganmog, are also consumed in urban and rural areas.

Mongolia's domestic demand for mushrooms remains low, with mushroom imports estimated at 270 tons per year in 2020. The average annual consumption per capita is only 0.1 kg, which is much less than that of Japan (13 kg). As Mongolia's economy grows and people become more health-conscious, dietary habits are expected to change, and the demand for mushrooms is expected to grow. Currently, PR strategies are being actively employed to promote the functionality and cooking methods of mushrooms to increase consumption. Simultaneously, surveys and research will be conducted to aid commercial production of shiitake mushrooms, which are in high demand.

### 3) Issues and countermeasures

Mushroom production involves three processes: spawn production, mycelial production, and mushroom production, which correspond to seed production, seedling production, and vegetable production in the case of vegetables. The other processes include the stages of sales and consumption, and the issues and measures to deal with them.

Table 2.20 Issues and countermeasures in the mushroom supply chain

Process	Issues	Countermeasures
<b>Fungal production</b>	<ul style="list-style-type: none"> <li>• Insufficient research on mushroom species and varieties suitable for Mongolia</li> <li>• Standards for fungal production are not yet in place</li> </ul>	<ul style="list-style-type: none"> <li>• Promoting mushroom research and development</li> <li>• Setting National Standards by MASM</li> </ul>
<b>Mycelial production</b>	<ul style="list-style-type: none"> <li>• Limited number of mycelial producers</li> <li>• Limited scale of mycelia production</li> <li>• Standards for mycelia production not yet in place</li> </ul>	<ul style="list-style-type: none"> <li>• Financial support for mycelium producers</li> <li>• Setting National Standards by MASM</li> </ul>
<b>Mushroom production</b>	<ul style="list-style-type: none"> <li>• Limited number of mushroom producers</li> <li>• Supply system of culture media and equipment necessary for mushroom production is not yet sufficient</li> <li>• Standards for mushroom production are not yet in place</li> </ul>	<ul style="list-style-type: none"> <li>• Provide training on mushroom production</li> <li>• Establishment of a supply system for mushroom production materials and equipment</li> <li>• Setting National Standards by MASM</li> </ul>
<b>Mushroom distribution</b>	<ul style="list-style-type: none"> <li>• Domestic consumption of mushrooms is very low</li> <li>• Inadequate processing and distribution system for domestic mushrooms</li> </ul>	<ul style="list-style-type: none"> <li>• Educational activities to increase consumption of mushrooms</li> <li>• Development of processing and distribution systems for domestic mushrooms</li> </ul>

Source: JICA Project Team

### 4) Direction of development

The SWOT analysis shows measures to promote the domestic production of mushrooms as one of the minor agro-pastoral products and substitution for imports. The development policy is based on the following three pillars: (1) promoting experimental research in cooperation with relevant research institutions; (2) conducting educational activities to increase consumption and develop sales channels; and (3) establishing and operating a national standard for mushroom production.

Mushrooms Supply Chain SWOT Analysis		External Factors	
		Opportunities	Threats
External Factors	<b>Strengths</b> <ul style="list-style-type: none"> <li>A mushroom production and marketing system has been established by the Mushroom Association.</li> <li>Private companies have begun mycelial production.</li> <li>The number of individual mushroom producers is increasing due to the training and guidance.</li> </ul>	<ul style="list-style-type: none"> <li>There are mushroom researchers and leaders and a growing number of students.</li> <li>A private company has been established to deal with equipment and materials.</li> <li>Food processors exist in the country.</li> </ul>	<ul style="list-style-type: none"> <li>Consumer preference for domestically grown mushrooms is low.</li> <li>Market and retail stores sell mostly imported mushrooms.</li> </ul>
	<b>Weaknesses</b> <ul style="list-style-type: none"> <li>Restrictions on substrate limit the types of mushrooms that can be grown.</li> <li>National standards and variety protection systems for mushrooms are not yet in place.</li> <li>For year-round production, it is necessary to prepare the cultivation environment for the winter season.</li> </ul>	<b>Strengths x Opportunities</b> <ul style="list-style-type: none"> <li>Enhance research and development of appropriate mushroom production techniques.</li> <li>Provide training and follow up to mushroom producers.</li> <li>Strengthen the collaboration in each process of mushroom production.</li> </ul>	<b>Strengths x Threats</b> <ul style="list-style-type: none"> <li>Strengthen public relations activities regarding mushroom nutrition and functions.</li> <li>Incorporate mushrooms into school lunch and other dietary education initiatives.</li> <li>Strengthen linkages between mushroom producers and retailers, restaurants, etc.</li> </ul>
		<b>Weaknesses x Opportunities</b> <ul style="list-style-type: none"> <li>Promote development of appropriate mushroom production technology.</li> <li>Establish and properly implement national standards for mushroom production.</li> <li>Establish standards for winter greenhouses for mushroom.</li> <li>Develop processed products to meet winter demand.</li> </ul>	<b>Weaknesses x Threats</b> <ul style="list-style-type: none"> <li>Promote safety of domestic mushrooms and differentiate them from imported mushrooms</li> <li>Consider necessary support systems to increase the price competitiveness of domestic mushrooms against imported mushrooms</li> </ul>

Figure 2.44 SWOT analysis of mushroom supply chain

Source: JICA Project Team

## (2) Fish

### 1) Current supply chain

Mongolia has more than 3,800 rivers, both large and small, with a total length of 67,000 km. There are also more than 3,000 lakes and marshes, six of which are larger than 500 km<sup>2</sup> and four of which are larger than 1,000 km<sup>281</sup>. These waters are home to more than 40 species of fish, including trout, *Tribolodon*, *Carassius*, carp, and *Lota lota* (burbot), as well as large fish that can grow up to 1 m in length, such as sturgeon, *Hucho taimen*, and pike<sup>82</sup>.

Russian-led commercial fishing began in various lakes in Mongolia in the mid-1950s. Most harvested fish are exported to Russia<sup>83</sup>. Since the transition to a market economy in the 1990s, fish resources have decreased significantly owing to the influx of many gill nets from China and fishing throughout rivers and lakes. Fishing is now prohibited in rivers and there are restrictions on commercial fishing in many lakes. International exports declined from a peak of 525 tons in 1999 to just 9 tons in 2018 (Table 2.22). Few companies are involved in the fishing industry, and the domestic market has not developed, partly because the business was initially started on the premise of exports. Even today, the volume of domestic fish in the

<sup>81</sup> Pre-evaluation Survey Report of “The River Basin Management Model Project for the Conservation of Wetland Ecosystem and its Sustainable Use in Mongolia”, JICA

<sup>82</sup> Major fish inhabiting Mongolia. (Altai osman, Amur pikes, Asian common carp, Bearded stone loach, Burbot freshwater cod, Flathead asp, Grayling, Gudgeon, Lenok, Mongolian redfin, Prussian carp, River perch, White culter, etc.)

<sup>83</sup> The main fishing areas in 1954-1993 were the lakes Buir, Ugii, and Tsagaan and the Darkhad depression, where working facilities were also established at various locations. (Institute of Biology, Mongolian Academy of Sciences)

market is low and frozen processed fish can only be found in large supermarkets in urban areas.

Residents around the lake also fish on a private scale, and the caught fish are sometimes smoked and sold on the street; however, most are consumed at home.

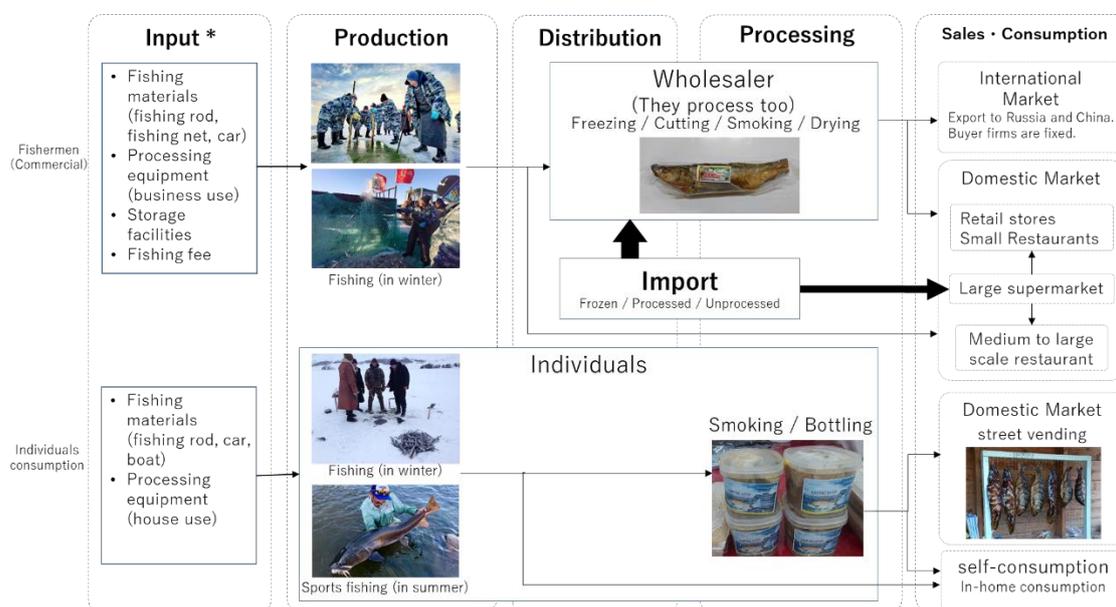


Figure 2.45 Fish supply chain in Mongolia

Source: JICA Project Team

## 2) Market situation

Mongolia is a long-standing nomadic country with an entrenched meat-eating culture dependent on livestock; however, fish consumption remains low even today. Annual fish consumption per capita is 0.18 kg and fish account for only 0.13% of protein intake. In Ulaanbaatar, consumption is higher than in rural areas, as fish is easily available because of imports by wholesalers and large supermarkets, as well as in foreign restaurants serving fish. Even so, the annual consumption per capita is only 0.28 kg.

Table 2.21 Annual fish consumption by region (kg/capita/year)

Ulaanbaatar	Central	Highlands	West	East
0.28	0.17	0.12	0.07	0.07

Source: Consumption of fish and fish products in the Asia-Pacific region based on household surveys, FAO, 2015/12

In recent years, however, the demand for fish has increased owing to growing health consciousness, especially among the younger generation, and the promotion of fish consumption under the national policy of the Healthy Mongolia Healthy Food Program. Past consumer surveys have shown that the main reason for Mongolians not buying fish is that they are not sold in the market, and that many consumers would prefer to buy fresh raw fish if available. Much of the seafood currently on the market is imported, but there is a good chance that fish consumption can be increased by establishing a supply system for fresh domestic fish.

Although export volumes in the international market have decreased over the years, there exists a certain

level of demand. For example, in Lake Buir, which straddles the border with China, export sales are timed to coincide with the Chinese New Year, when the demand for fish in China increases.

Table 2.22 Volume of production and import/export of fisheries resources in Mongolia

Year	Freshwater fish	Marine products	
	Production (t)	Import (t)	Export (t)
2014	49	1,319	61
2015	63	862	93
2016	15	922	31
2017	22	1,021	22
2018	25	1,251	9

Source: JICA Project Team using data of FAOSTAT

### 3) Issues and countermeasures

The three major challenges for the raw fish supply chain in Mongolia are: “Avoiding resource depletion”, “Acquiring knowledge and skills in the fisheries industry”, and “Underdeveloped domestic markets”.

Table 2.23 Issues and countermeasures in the fish supply chain

Process	Issues	Countermeasures
<b>Production/ fishing</b>	<ul style="list-style-type: none"> <li>• <b>Avoidance of resource depletion from overfishing</b> <ul style="list-style-type: none"> <li>• Inadequate resource quantity surveys.</li> <li>• Lack of nature conservation managers</li> </ul> </li> <li>• <b>Limited fishing period</b> <ul style="list-style-type: none"> <li>• Fishing only in winter risks overfishing</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Conduct regular resource quantity surveys</li> <li>• Develop human resources specializing in fisheries resources</li> <li>• Ensure resource management by securing Nature Conservation Officers</li> <li>• Develop and disseminate aquaculture</li> <li>• Review and revise laws on fisheries resource protection</li> </ul>
<b>Processing</b>	<ul style="list-style-type: none"> <li>• <b>Acquisition of knowledge and skills in the fisheries industry</b> <ul style="list-style-type: none"> <li>• Lack of equipment/facilities for processing</li> <li>• Insufficient/immature processing technology</li> <li>• Lack of variety of processed products</li> <li>• Insufficient knowledge of freshwater fish processing and hygiene</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Support for the development of processing facilities</li> <li>• Provide training on fish processing</li> <li>• Enhancement of products including cooked and processed products</li> <li>• Conduct market needs surveys</li> </ul>
<b>Distribution</b>	<ul style="list-style-type: none"> <li>• <b>Unstable supply</b> <ul style="list-style-type: none"> <li>• The lack of large refrigeration facilities makes it impossible to store raw materials and products for a long time.</li> <li>• Lack of cooling and freezing trucks makes it difficult to transport products long distances in the summer.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Support for the development of storage facilities and cold chains</li> </ul>
<b>Sales and Consumption</b>	<ul style="list-style-type: none"> <li>• <b>Underdeveloped domestic market</b> <ul style="list-style-type: none"> <li>• Low per capita consumption</li> <li>• Cooking methods are not known</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Dietary education activities at educational fields, restaurants, retail outlets, etc.</li> <li>• Promotion of cooking methods.</li> <li>• Cooperation with tourism and food service industry</li> </ul>

Source: JICA Project Team

Inland fisheries, on lakes and rivers, are more likely to deplete resources than marine fisheries because it is easier to catch fish in the former. In particular, winter fisheries in Mongolia are prone to overfishing because of ice formation, which narrows the fish habitat and makes it easier to catch fish. Regular resource quantity surveys are necessary to avoid resource depletion; however, insufficient surveys have been conducted owing

to a lack of research funds and experts. Regarding resource management structure, some areas have no nature conservation officers in charge of fishery resource management because of a lack of appropriate and willing staff. The obligation to increase the number of fishery products imposed on commercial fishers has not yet been implemented because of a lack of technology, human resources, and funds<sup>84</sup>. At present, fishing has not reached the quotas set by the Ministry of Nature, Environment, and Tourism for each aimag and lake. However, insufficient research and management systems for these resources do not allow for optimism.

Mongolia’s fishery industry was originally limited to fishing in a few lakes and rivers for food and tourism, with there being few facilities available in the country to process fish. There is also no accumulated knowledge on basic fish processing, hygiene management techniques, or measures against parasites specific to freshwater fish. Therefore, when promoting the domestic fishery industry, activities to strengthen processing knowledge and technology are needed, in addition to the development of processing plants.

The demand for fish is expected to increase in future owing to food diversification; however, the current per capita consumption of fish is very low (less than 200 g). Events and activities that stimulate consumption are essential to accelerate consumption. A certain number of consumers are interested in eating fish, but are hesitant to buy because of a lack of knowledge on cooking fish<sup>85</sup>. The key to increasing consumption is simultaneously promoting and disseminating cooking methods with the sale of fish. Another key point is to develop products that are pre-cooked and easy to prepare, thereby encouraging consumers to buy.

#### 4) Direction of development

Fish Supply Chain SWOT Analysis		External Environment	
		Opportunities	Threats
		<ul style="list-style-type: none"> <li>National promotion of healthy eating habits, through diversification of foodstuffs.</li> <li>Growing health consciousness, especially among the younger generation.</li> <li>Increased demand for fishery products due to food globalization.</li> <li>Existence of consumers demanding domestic and fresh fish.</li> <li>Necessity of catching large fish to protect small fish.</li> <li>Demand for fish in China and Russia.</li> <li>Location to purchase cheap materials from neighbouring countries.</li> <li>Rapid development of tourism and catering industry.</li> </ul>	<ul style="list-style-type: none"> <li>Depletion of fish stocks in lakes due to overfishing</li> <li>Chinese and Russian fish buying up of fish Inflow of processed (canned and frozen) seafood products from outside of Mongolia</li> <li>Increased enforcement and crackdowns on laws related to the protection of fishery resources</li> </ul>
Internal Environment	<b>Strengths</b> <ul style="list-style-type: none"> <li>Existence of unused fish resources that are not yet polluted by the environment due to undevelopment.</li> <li>Domestic fish brands and their rarity.</li> <li>Possession of large-scale fishing techniques from the socialist era.</li> <li>Existence of NGOs and associations which can carry out aquaculture and conducting studies.</li> <li>Agreement for aquaculture technical cooperation has been obtained from China.</li> </ul>	<b>Strengths × Opportunities</b> <ul style="list-style-type: none"> <li>Use of fishable fish stocks present in the country’s lakes.</li> <li>Dissemination of large scale fishing techniques appropriate for commercial use.</li> <li>Linkages with tourism and the food service industry.</li> </ul>	<b>Strength × Threats</b> <ul style="list-style-type: none"> <li>Development and dissemination of fish reproduction projects with the support of China.</li> <li>Drafting and enforcing legislation on the protection of fisheries resources, based on the appropriate implementation of reproduction projects and their envisaged effects.</li> </ul>
	<b>Weaknesses</b> <ul style="list-style-type: none"> <li>Insufficient/immature fishing and processing technology.</li> <li>Lack of cold storage/cold chain.</li> <li>Public unaware of fish processing and cooking methods.</li> <li>Limited fish resources.</li> <li>Lack of state support for aquaculture.</li> <li>Inadequate management systems for fisheries resources due to lack of manpower.</li> <li>Insufficient funds to carry out fish resource stock assessments.</li> </ul>	<b>Weaknesses × Opportunities</b> <ul style="list-style-type: none"> <li>Establishment of processing facilities ( Installation of equipment, warehouses for storing raw materials and products) around lakes where fishing is possible.</li> <li>Conduct training for processors on fish processing and hygiene management.</li> <li>Implement fish food promotion (nutrition education, advertising of cooking methods).</li> </ul>	<b>Weaknesses × Threats</b> <ul style="list-style-type: none"> <li>Training of professional staff in fisheries resources (protection and utilisation) and increase in the number of nature conservation officers.</li> <li>Limit exportable quantities of fish and set harvestable sizes by species for the protection of the resource.</li> <li>Conduct periodic resource quantity surveys.</li> <li>Introduce subsidy schemes for capital investment and aquaculture.</li> </ul>

Figure 2.46 SWOT analysis of fish supply chain

Source: JICA Project Team

<sup>84</sup> There are several organizations that try to carry out fish breeding and conservation projects under natural conditions. (To name, NGO "Jijiy gorhi", "Tul Ijy foundation", and "Chuluut Tul foundation", Tavan tolgoi (Selenge aimag Khushaat soum), Little river Company, Bee Nest company, Khilem Ost company, etc.).

<sup>85</sup> Consumer Survey in Mongolia, conducted by Dr Amit Morey, Auburn University.

In Mongolia, where fish consumption is low and much of the population is unfamiliar with the preparation of fish, the production and supply of processed foods that are accessible to consumers will encourage them to buy fish. In other words, development of processing facilities is the first step towards popularizing fish. The target area for the development of facilities should be around lakes that are recognized as nature reserves with no restrictions on fishery activities. Fresh fish can be processed while reducing the risk of resource depletion. For fish diet promotion activities, the first target area for dissemination should be the local area. Once the fish diet is locally established, fish can become a specialty in the area and a potential tourism product.

The avoidance of resource depletion is a major prerequisite for commercial fisheries. The most effective way to prevent resource depletion is to conduct highly accurate resource surveys regularly to ascertain resource levels and replenish resources through aquaculture. In the past, detailed resource surveys were carried out by Russia, and fisheries were established based on these results; however, since the transition to a market economy, surveys of the same scale have rarely been carried out. Although there are NGOs and associations studying aquaculture in Mongolia, it has not yet been put into practical use. Some domestic parties<sup>86</sup> have obtained agreements from China to cooperate in aquaculture technology, with the goal of realizing the project as soon as possible. Both resource surveys and aquaculture require high costs and professional human resources; therefore, a long-term attitude of acceptance is required to raise costs and obtain trained human resources.

## **2.4 Other Perspectives Required for Agro-pastoral Value Chain Development**

### **2.4.1 Trade agreements**

#### **(1) Trade negotiations**

Currently, there are 16 agreements available for Mongolia as an exporting country, and five agreements for which consultations have begun (Table 2.24). In particular, China, Korea, and the Eurasian Economic Union (EAEU) are potential export markets for agro-pastoral products. Terms and conditions of customs procedures, sanitary conditions, and other regulations for exporting to Russia are based on EAEU regulations, and Mongolia has accumulated experience regarding procedures for exporting to the EAEU. According to ITC analysis, among the countries with large differences between export potential and current levels, those without agreements include Taiwan, Thailand, Vietnam, and Iran.<sup>87</sup> However, regional and preferential trade agreements are very complicated in terms of content and procedures, with different agreements having different criteria and rules for recognizing for example, the certification of origin. Many agro-pastoral enterprises seeking to export, include small and medium-sized enterprises (SMEs), making it difficult for them to understand the agreements, select the most favorable terms, and follow the established procedures. Support programs readily available to SMEs in this area are needed. In intergovernmental negotiations, inquiries from a partner country are sometimes handled by the government without being confirmed by the private sector. There is a lack of coordination between government agencies, with poor communication about

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<sup>86</sup> B. Mendsaikhan, Division of Water Resources and Water Utilization, Institute of Geography and Geo-ecology, MAS

<sup>87</sup> ITC Export Potential Map (accessed March 2023)

the needs and issues of the private sector. Negotiations have not progressed well, partly because of the situation in the partner country and also because of a lack of coordination among the parties involved, including the private sector. The EPA with Japan is the only EPA currently issued by Mongolia; however, the advantage of agricultural and livestock products under this EPA in exports to Japan is limited compared to other WTO agreements and general preferences concluded by Japan. While there is an advantage for sheep intestines, buckwheat, pine nuts, and berries, this advantage is hazy compared with other regional agreements. Furthermore, the exports of dairy products and meat are limited owing to SPS measures, and this situation has not changed over the years. In the public-private joint study of the Mongolia-Japan EPA, the Mongolian side reportedly requested cooperation in the areas of SPS and TBT, "production of high value-added agricultural products" and "horticulture, livestock, and arable agriculture" with regard to food, agro-pastoral industries. However, exports of agro-pastoral products to Japan remain limited.

Table 2.24 Mongolian trade agreements

Agreement Name	Status	Year of entry into force/commencement
<b>Bilateral Agreements</b>		
EPA, Japan-Mongolia	In force	2016
FTA, Canada-Mongolia	Consultations started	2010
FTA, China-Mongolia	Consultations started	2010
FTA, Korea-Mongolia	Consultations started	2016
FTA, Cambodia-Mongolia	Consultations started	2020
FTA, EAEU-Mongolia	Consultations started	2020
<b>Regional Agreement</b>		
APTA (formerly Bangkok Agreement)	In force	2021
<b>Preferential Treatment</b>		
Australia for GSP Countries	In force	1966
Japan for GSP countries	In force	1971
Norway for GSP countries	In force	1971
New Zealand for GSP Countries	In force	1972
Switzerland for GSP Countries	In force	1972
Canada for GSP Countries	In force	1974
United States for GSP countries	In force	1976
Turkey for LDCs	In force	2002
EU for GSP+ Countries	In force	2005
Armenia for Developing Countries	In force	2015
Kyrgyzstan for Developing Countries	In force	2015
Belarus (EAEU) for Developing Countries	In force	2016
Kazakhstan (EAEU) for Developing Countries	In force	2016
Russian Federation (EAEU) for Developing Countries	In force	2016
UK for GSP Countries (Enhanced Framework)	In force	2021

Source: ITC

## (2) Trade procedure

Mongolian agro-pastoral products are expensive. This is largely due to the country's disadvantageous conditions, such as severe climate, a small population in a vast land area, and being landlocked. In addition, cumbersome export procedures involving many reworks and vertically divided administrations further contribute to high costs. Regarding trade logistics, the World Bank has conducted regular surveys since 2007 on the Logistics Performance Index (LPI), which evaluates the efficiency of customs clearance procedures and logistics quality<sup>88</sup>. Mongolia's LPI in 2018 was 2.37, ranking 130th out of 160 countries. In 2023, the

<sup>88</sup> The components of the index and Mongolia's score are (1) efficiency of customs clearance procedures (2.5), (2) quality of transport infrastructure (2.3), (3) price competitiveness of international transport (2.5), (4) quality of logistics (2.3), (5) traceability of cargo (2.4), (6) on-time arrival of cargo to consignees (2.7), for a total score of 2.5; full score is 5. In 2018,

LPI was 2.5 points, ranking 97th out of 139 countries, similar to Tajikistan and Ghana<sup>89</sup>. Despite COVID-19, the Mongolian LPI remains strong globally. On the other hand, for example, before the dismantling of the GASI, the export of meat as a strategic food product required documents issued by seven agencies, including the GASI, regardless of the destination; the issuance of such documents took a total of 312 hours and cost 245,500 MNT.<sup>90</sup> There are 29 documents required for meat exporters to apply to the seven agencies, eight of which are duplicate documents to be submitted to two or more agencies. Additionally, there are cases where the customs requirement of the importing country has a special definition of the product, for the sake of establishing a tariff rate. In some cases, the document-issuing agency is unaware of the importing country's requirements, and companies lack verification, leading to the destruction of goods and increased costs. The MOFALI website allows users to apply for health certificates for meat products, veterinary certificates for beef exports to China, and for cooked beef, sheep, and goat meat products to be exported to China<sup>91</sup>.

Table 2.25 Issues and countermeasures in trade of agro-pastoral products

Issues	Countermeasures
<ul style="list-style-type: none"> <li>• <b>Insufficient agreements/negotiations:</b> Limited bilateral and regional trade agreements; slow progress in trade negotiations; private sector needs and realities not reflected in trade policy and negotiations; lessons from precedents not applied; unclear export strategies</li> </ul>	<ul style="list-style-type: none"> <li>• Assignment of dedicated trade officers, human resource development within the government</li> <li>• Making information gathering a routine task in government agencies</li> <li>• Holding regular council meetings with the participation of relevant ministries and industry associations</li> <li>• Policy dialogue with partner countries, utilization of local human resources, and use of overseas destination agencies</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Cumbersome and inefficient trade operations:</b> Insufficient knowledge and information of relevant agency personnel, poor documentation skills of relevant agencies, time-consuming and error-prone, policies and rules that change from person to person, insufficient logistics services</li> </ul>	<ul style="list-style-type: none"> <li>• Create a system for regular information updating and sharing</li> <li>• Promote One Stop service and digitization, introduce a pre-registration system</li> <li>• Reorganize required documents, clarify and simplify each procedure (create templates and checklists)</li> <li>• Establish implementation guidelines and detailed regulations for each service, and provide training for administrative agency staff</li> <li>• Foster the development of forwarders</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Insufficient corporate capacity:</b> Insufficient information gathering and analysis of target markets; difficulty in taking advantage of trade agreements; insufficient analysis of tariffs, requirements, etc.; lack of understanding of partner country requirements; inadequate or inaccurate procedures; weak relationships with trading partners</li> </ul>	<ul style="list-style-type: none"> <li>• Developing business support institutions, regular meetings among government agencies and the private sector</li> <li>• Provide training for companies, support for capital investment by companies, support for business negotiations</li> <li>• Collection, accumulation, and sharing of case studies, information provision services</li> <li>• Organize training programs for enterprises</li> </ul>

Source: JICA Project Team

**BOX : Export documentation barrier**

**Case 1:** A Japanese company expressed interest in Mongolian sheep intestines and attempted to bring sheep intestine samples to Japan from a designated factory approved by the Japanese government. However, the factory address listed on the documents submitted by the exporting company was not the same as the registered one, and could not pass through quarantine. As a result, the transaction was unsuccessful.

**Case 2:** When natural honey is exported to Japan, it is necessary to submit to Japanese customs, a list of ingredient analyses issued by the official agency of the exporting country. 340 kg of honey was

Germany ranked first with a score of 4.2, and in 2023, Singapore ranked first with a score of 4.3.

<sup>89</sup> <https://lpi.worldbank.org/>

<sup>90</sup> World Bank (2021) Export Process Analysis

<sup>91</sup> MOFALI One Window Service <https://export.mofa.gov.mn>

exported to Japan in 2022, and it took nearly 4 weeks to clear customs in Japan. Needless to say, storage costs were incurred during that time. The reason it took 4 weeks was incomplete entries in the ingredient analysis table issued by the inspection agency, a misspelling in the company name, and discrepancies with other documents. The fact that neither the Japanese forwarder nor the importer had any experience in honey importation further prolonged the period. In addition, even before leaving Mongolia, there was a reissue of documents concerning this list of ingredients analysis, which took longer than usual. The main reason was that the company and the inspection agency did not share the destination of the honey, the English name of the company, and the Japanese customs requirements.

The above two cases are problems that can be prevented by having an appropriate format for document application and by preparing a checklist. Risks can also be mitigated by having sufficient prior discussions with Japanese quarantine and customs through the importing company.

## **2.4.2 Sanitation and quality management**

### **(1) Public organization structure**

The General Agency of Specialized Inspection (GASI) was recently dismantled and reorganized by various ministries. The TORs and framework assignments for each agency are still in partial flux. This needs to be resolved at the earliest, along with the allocation of sufficient human resources and the coordination of programs to train administrative officers in this field. To export agro-pastoral products, sanitary conditions are agreed upon by the government of the importing country, and only after confirming that the products meet these conditions can they be exported. However, Mongolia is a country where transboundary animal diseases, such as foot-and-mouth disease, occur. Because Mongolia shares borders with other countries and has a nomadic nature, the importing country may not approve measures taken within Mongolia. Consequently, actual exports are limited to a few countries and agro-pastoral products. Whether importing countries approve of Mongolian domestic measures is not uniform, as it depends on the importance of the exported product in the market of the importing country and political considerations; the only way to export is to comply with the importing country's requirements. In many cases, the importing country stipulates that the inspecting organization issuing the test report, required for submission at the time of export, must be an ISO 17025 accredited laboratory. Even if a laboratory is ISO-accredited in Mongolia, it may need accreditation from the importing country; accreditation bodies in Mongolia are not sufficiently trusted or recognized. The audit capacity of accreditation bodies must be enhanced. Laboratories that conduct export inspections have poor budgets, and the analytical equipment is a donor-supported hodgepodge that does not allow for efficient analysis. In addition, there are cases in which the analysis required by the CAC standards cannot be performed because of a lack of equipment or reagents. With little analytical experience, it is difficult to enhance the detection capabilities. Companies sometimes complain about inspections and sampling by the GASI or laboratory responses. Opportunities are required for the private sector and public institutions to share information and exchange opinions to address key issues.

### **(2) Efforts by the private sector**

In the case of agro-pastoral exports, quarantine in the importing country involves document examinations and random inspections; however, the permissible level of pesticide residues often changes with change in

regulations. It is burdensome for companies to collect updated information from importing countries, with limited support available from public agencies and industry associations. Exploiting export markets requires a level of quality control and assurance that meets the requirements of the destination market. Certification is increasingly being acquired worldwide to facilitate trade, which is also the case in Mongolia. Many importing countries require HACCP for food manufacturing and halal certification is required for exports to Islamic countries. It poses a heavy burden for companies to introduce certification on their own, and it is desirable for them to also provide consulting services. However, in Mongolia, certifying bodies have their own consulting service divisions and certification independence is not maintained. Companies may have doubts regarding the auditing capabilities of the certifying bodies. Halal certifications that can be obtained from Mongolian domestic certification bodies are unique to Mongolia and not valid for export destinations. The ongoing UNIDO Export Promotion Project, in addition to strengthening accreditation and certifying bodies, and assisting companies in obtaining certification, aims to mutually recognize Mongolia's own halal certification and certification by importing countries; such support should be continued. Traceability systems have been developed for meat, milk, leather, and honey; however, only a portion of these commodities can be traced. It is rare to find QR codes or other such systems on products in the domestic market, and they are not widely used. However, traceability can be an advantage for exports. It is important to strengthen the outreach to stakeholders in the value chain and promote the use of this technology. The Food Law and Food Safety Law in Mongolia, require food business operators to implement GAP, GHP, and GMP to ensure food safety. It can be said that laws are in place, but enforcement lags behind. Regarding food sanitation management in processing, major companies and exporters are introducing GHP and GMP, and an increasing number are acquiring HACCP, ISO 22000, FSSC 22000, and other certifications. However, small and medium-sized enterprises have been slow to acquire certifications. The only officially established GAP is for fruits and vegetables, and its introduction has just begun. The GAP for fruits and vegetables has not been widely adopted, as few family farmers are able to pay fees for third-party certifications. In the domestic market, there is no pressure to obtain GAP, HACCP, etc. and, it is common for food products not-adhering to Mongolian standards, to be sold in the local markets. In the current domestic market, certification costs cannot be fully added to the market price and companies must bear the cost of implementation. Certification is burdensome for companies, as it requires not only introduction-stage costs such as consulting services, investment in facilities, and audit fees, but also certification maintenance costs. There is a difference in the quality control required between export and domestic routes in the supply chain. Even within the same country, urban and rural areas have different requirements. This hinders the improvement of the overall quality control system. Because export and domestic routes sometimes intersect, it is important to raise the level of quality control in the country as a whole. However, the variation in the quality of products distributed in the market and the status of certification shows that food business operators have varying levels of understanding of the importance of quality control. Even without market pressure at present, it is expected that the domestic market will become more sensitive to quality and safety as distribution through supermarkets becomes more common and the public becomes more aware. Food business operators must be prepared for changes in the marketplace; however, only a limited number of specialized agencies provide information on food safety to a wide range of food business operators. The top management of producers and companies must understand sanitation and quality management; only then can specialized personnel be

recruited and employees be trained in these areas. To date, GASI has conducted food safety training for food business operators. Although training has been conducted regularly, its quality and effectiveness have not been fully evaluated.

Table 2.26 Issues and countermeasures in sanitation and quality management

Issues	Countermeasures
<ul style="list-style-type: none"> <li>• <b>Administrative agencies are not fully capable of managing:</b></li> <li>• Administrative agencies involved in food safety are in the process of reorganization, TORs, and demarcations have not been finalized, target setting is unclear, monitoring functions are unstable, lack of coordination</li> <li>• The outbreak of transboundary animal diseases</li> <li>• Inadequate human resources and administrative officer training programs for food safety</li> <li>• Problems and complaints from the private sector are not reaching the administrative agencies</li> <li>• Lack of evaluation of training and other projects implemented</li> </ul>	<ul style="list-style-type: none"> <li>• Establishment of a coordinating body and clarification of responsibilities for food safety related administration</li> <li>• Holding regular council meetings on food safety</li> <li>• Regular mandatory training of veterinarians, thorough vaccination, and promotion of informatization</li> <li>• Inviting advisors and implementing technical cooperation projects</li> <li>• Regular meetings with the private sector and exchange of views with industry associations</li> <li>• Conduct policy evaluation, measure effectiveness, and strengthen monitoring functions</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Insufficient development of inspection agencies:</b></li> <li>• Insufficient testing for monitoring</li> <li>• Low confidence in accreditation</li> <li>• Insufficient analytical capacity of inspection laboratories</li> <li>• Lack of up-to-date information on requirements in destination countries</li> </ul>	<ul style="list-style-type: none"> <li>• Improve the audit capacity of accreditation bodies, establish a legal basis for export inspections</li> <li>• Budget allocation, development and implementation of inspection body development plans, training of analysts</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Limited quality assurance at the international level:</b></li> <li>• Lack of information on certification</li> <li>• Lack of equivalence in certification</li> <li>• Insufficient number of certification bodies and auditors, insufficient certification capacity</li> <li>• Cost burden of certification on companies</li> <li>• Traceability is limited</li> </ul>	<ul style="list-style-type: none"> <li>• Strengthening the ability of MNCCI and industry associations to collect and provide information</li> <li>• Support networking with overseas and mutual recognition efforts</li> <li>• Use of donor support, promotion of foreign certification bodies to enter the market</li> <li>• Development of subsidy policies, provision of low-interest loans, reduction of tariffs on equipment imports</li> <li>• Participation in international trade shows, public relations activities for foreign countries, and training for food business operators</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Insufficient corporate capacity:</b></li> <li>• Large variation in the quality of products distributed</li> <li>• Large variation in the efforts of food business operators</li> <li>• Limited number of specialized organizations to disseminate food safety information to companies.</li> <li>• Limited effectiveness of corporate training programs</li> </ul>	<ul style="list-style-type: none"> <li>• Strengthen monitoring functions of inspection agencies</li> <li>• Provide training to food business operators</li> <li>• Information services provided by industry associations and government agencies</li> <li>• Use of donor support</li> <li>• Joint programs with the private sector for evaluation and development of priority areas</li> </ul>

Source: JICA Project Team

### 2.4.3 Finance

Mongolia's financial sector has been undermined by nonperforming loans, inadequate capital, and weak governance. Figure 2.47 illustrates the evolution of the Mongolian financial institutions' outstanding loans. Outstanding loans have been increasing rapidly; in March 2023 these were 411% higher than in January 2012. The ratio of non-performing loans (NPL) to total loans has also been on a gradual upward trend, particularly affected by COVID-19, increasing to 12% from October 2020 to February 2021<sup>92</sup>. Although the NPL ratio in Mongolia decreased to 10% in March 2023, it remains high considering that the average NPL ratio in the

<sup>92</sup> ADB, FINANCE SECTOR FACT SHEET

rest of the world is 6.49%<sup>93</sup>.

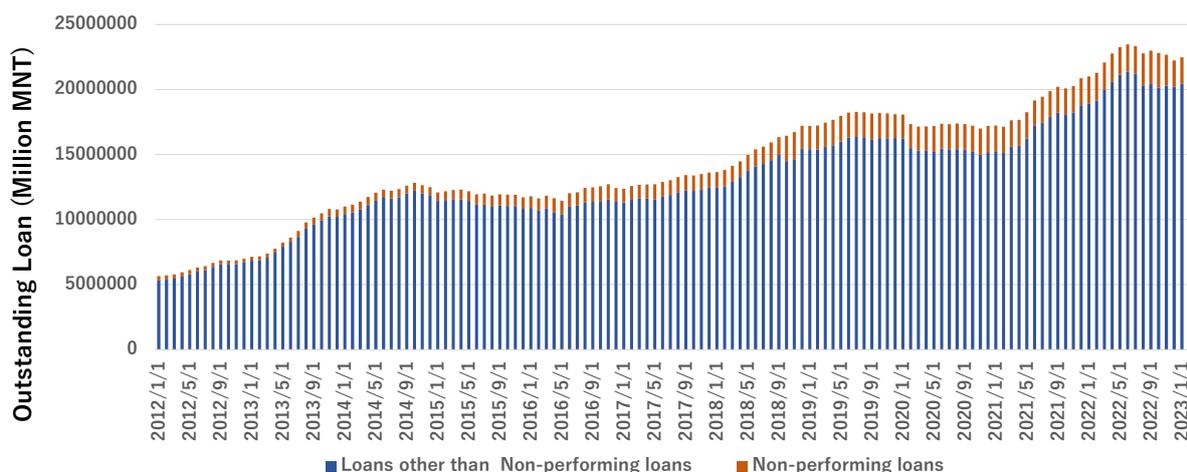


Figure 2.47 Outstanding loans in Mongolia (2012~2023)

Source : JICA Project Team using data of NSO Mongolian Statistical Yearbook 2023

To mitigate the impact of COVID-19, Mongolia has implemented a low-interest loan policy for the agricultural and manufacturing sectors. Consequently, the interest rates on loans tended to decline. On the other hand, assuming this was a temporary measure, the average interest rates for loans to the agriculture and manufacturing sectors were 20.3% and 15.2%, respectively, before the COVID-19 pandemic, i.e., before March 2020, and were particularly high in the agriculture sector (Figure 2.48).

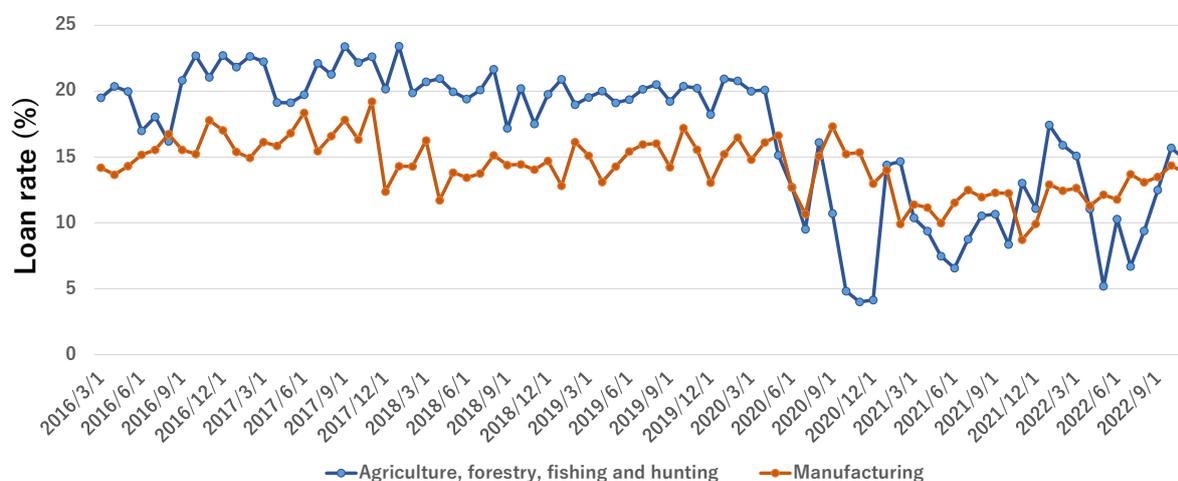


Figure 2.48 Average interest rates on loans to the agricultural and manufacturing sectors

Source : JICA Project Team using data of NSO Mongolian Statistical Yearbook 2022

Despite the apparent increase in outstanding loans, this situation in the financial sector has made it more difficult to obtain loans, especially for SMEs and farmers, who have less collateral and higher asset values. In recent years, revisions to the Cooperative Law have made it possible for agricultural and livestock cooperatives to receive loans from financial institutions; however, the number of loans extended to these cooperatives has not increased. This is due to the following reasons: 1) agricultural and livestock cooperatives themselves do not have collateral with asset value, 2) it is necessary to obtain collateral from each cooperative

<sup>93</sup> [https://www.theglobaleconomy.com/rankings/nonperforming\\_loans/](https://www.theglobaleconomy.com/rankings/nonperforming_loans/)

member, and 3) the amount of labor required by banks to obtain and examine collateral is excessive and not worth the cost and risk<sup>94</sup>. It is difficult to meet the financing needs of SMEs, farmers, and agricultural cooperatives that lack real estate, movable property, or intangible assets by simply providing loans based on the appraised value of such assets. New financing systems, such as Value-Chain Finance<sup>95</sup> and Warehouse Receipt<sup>96</sup>, need to be established.

#### **2.4.4 Industrial cluster**

Clusters of commodities are currently being formed in Mongolia with the support of various development partners<sup>97</sup>. Each cluster consists of the parties involved in the production, processing, distribution, and sales of the product in question; it also includes MOFALI officials and others from the public who participate in discussions and activities aimed at identifying and resolving factors that hinder the strengthening of VC for individual products. The formation of industrial clusters as a basis for such public-private partnerships has become particularly prominent in recent years, and it is expected that the scale and types of clusters will continue to expand with the support of development partners. At the same time, steps to ensure the independent development of such clusters will be examined in parallel.

According to the Small and Medium Enterprise Agency, three types of clusters are to be promoted in Mongolia: 1) provincial clusters, 2) regional clusters spanning multiple provinces, and 3) export-oriented clusters. The Uvs Sea buckthorn Cluster in Uvs aimag, where the PRO-VALUE Project (led by the German Chamber of Commerce and Industry) and the Mongolian Chamber of Commerce and Industry collaborate to form a cluster, is a representative example of a provincial cluster. Export-oriented clusters include the cosmetics and yak wool clusters, which were established through the EU-TRAM project, and the honey cluster, which was formed with the support of MONMAP-AVC. As for regional clusters, no representative examples have been identified thus far; however, it is assumed that clusters are organized by parties related to common products in neighboring prefectures.

In the future, when formulating guidelines and plans for cluster development, it is of primary importance that the Small and Medium Enterprise Agency, which is a competent authority on clusters, plays a central role in obtaining a common understanding of the definition of a cluster in Mongolia. It should provide a clear vision of the future expected from cluster development among relevant parties in industry, government, and academia. On this basis, it is necessary to identify the characteristics, functions, and organizational structure of each type of cluster and develop a legal framework to facilitate industrial cluster development.

#### **2.4.5 Development partner initiatives**

In Mongolia, development partners such as the Asian Development Bank (ADB), Food and Agriculture

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<sup>94</sup> Hearing from a Statebank

<sup>95</sup> To improve the productivity and profitability of a company's entire value chain by supporting stakeholders in its own value chain who need funding (e.g., farmers and cooperatives who are suppliers of agricultural products).

<sup>96</sup> A system that issues receipts certifying the storage location, quantity, and quality of agricultural and pastoral products warehoused in a storage facility. These warehouse receipts can be used as collateral to obtain loans.

<sup>97</sup> A cluster is generally defined as "a geographically proximate group of interrelated firms and institutions belonging to a particular field. On the other hand, it should be noted that in Mongolia, there are many cases where clusters are not necessarily utilized in accordance with the said definition.

Organization of the United Nations (FAO), and World Bank (WB) provide support to the agro-pastoral sector. In preparing this M/P, it is necessary to take into account a number of good practices, manuals, and lessons learned from the past efforts of such development partners, including JICA. Table 2.27 shows the names of the projects and their project outlines that are referenced in the preparation of this M/P.

Table 2.27 Development partner initiatives

DPs	Project title	Period	Outline
ADB	Community Vegetable Farming for Livelihood Improvement	2017.12-2022.6	Agricultural VC pilot project targeting Tuv, Darkhan-Uul, Uvs and Selenge, including small-scale seed production, processing and off-farm livelihood improvement activities.
ADB	Agriculture and Rural Development Project	2016-2021	Provides loans and branding support to companies wishing to start or develop new businesses, especially in the livestock sector. Initially started as a grant scheme, but due to its success, now being continued as a loan scheme.
ADB	Vegetable Production and Irrigated Agriculture (VPIA)	2018-2019 2020-2026	Irrigation rehabilitation, strengthening farmer organizations, promotion of appropriate agricultural input use, and development of storage and wholesale markets for agricultural products in Ulaanbaatar.
ADB	Unleashing the Private Sector to Drive Inclusive Growth in Eastern Mongolia	2019-2021	Formulation of private sector development strategies for three aimags in eastern Mongolia (Dornod, Khentii, and Sukhbaatar). Creation of a model for agribusiness clusters.
ADB	Cooperative-Based Sustainable Agriculture Production	2019-2021	Strengthen the system of herders' cooperatives, strengthen the capacity of herders and MOFALI officers on sustainable livestock production, and develop policies and action plans to promote meat exports.
ADB	Sustainable Fodder Management	2019-2021	Establishment of a sustainable feed production system (production, processing, storage, transportation), and the development of related policies and action plans.
ADB	Preparing the Climate-Resilient and Sustainable Livestock Development Project	2019-2021	1) Support for policy formulation and strengthening of systems for livestock sector development, 2) Organization and strengthening of herders' cooperatives, 3) Strengthening of VC for meat and dairy products (promotion of cooperation between herders' cooperative and meat processors, ICT-based extension services, improvement of veterinary and breeding services)
ADB	Aimags and Saim Centers Regional Development Investment Program	2017-2020	Formation of regional urban clusters for administrative services and local economic revitalization. In the agro-pastoral sector, preparation of pasture management plans, strengthening of veterinary services, and development of small-scale infrastructure to promote agribusiness.
ADB	Managing the Risks of Food Insecurity in Mongolia during the COVID-19 Crisis	2020-2021	To assess the vulnerability of the food supply chain in Mongolia and to develop strategies and action plans for developing a resilient supply chain.
EU	Support to employment creation in Mongolia (SECiM): Piloting quality private sector work in selected livestock and vegetable value chains	2016-2020	Implemented by UNIDO and FAO. VC development of agro-pastoral products (meat, dairy products, textiles, leather, vegetables) for employment generation. Capacity building for the private sector and local government officials to improve agricultural productivity and quality, and reduce harvest losses.
EU	Trade Related Assistance for Mongolia (TRAM Project)	2017.3-2021.3	The project targets the export of cosmetics and underutilized agricultural and livestock products, strengthening the capacity of the private sector through institutional building and compliance with quality standards necessary to export to the EU market.
FAO	Improving Local Dairy Processing	2017-2019	Production and marketing support for high value-added

DPs	Project title	Period	Outline
	through promoting women		dairy products for six aimags (Khovd, Khuvsgul, Dornond, Tuv, Selenge, and Darkhan-Uul).
FAO	Emergency assistance for the control of Foot and Mouth Disease in central and western regions of Mongolia	2018-2019	Emergency support for FMD outbreaks in the eastern region. Improving livestock health by strengthening management systems and measures to prevent the spread of disease.
FAO	Piloting the Climate-Smart approach in the livestock production systems	2018-2020	Strengthening resilience to climate change in the livestock sector.
SDC	Inclusive and sustainable vegetable and marketing project (VEGI)	2016-2019	1) Increased production of domestically produced vegetables through the dissemination of agricultural technology and knowledge to small-scale farmers, 2) Increased income of small-scale vegetable farmers and female-headed households through improved market access, and 3) Increased vegetable production and consumption by poor households through the promotion of vegetable garden activities.
SDC	Green Gold Project	2017.1-2020.12	This project has been ongoing since 2004 and aims to build a pasture management system and strengthen the organization of pasture management groups to improve the livelihoods of herders.
WB	Livestock and Agricultural Marketing Project (LAMP)	2013-2017	Strengthen linkages between agricultural and livestock products produced by herders and markets, and improve productivity and quality of livestock products
WB	Export Development Project	2020-2023	The project aims to strengthen the export capacity of Mongolia's non-mining sector and expand access to export markets by 1) developing export finance products; 2) strengthening the capacity of the Agricultural Reinsurance Joint Stock Company; and 3) providing training and matching grants for SMEs.
WB/SDC	Third Sustainability Development Project	2017.9-2020.8	Strengthening the capacity of local administration, funding from the Rural Fund based on requests from the local administrative organization.
WB/FAO	Livestock Commercialization Project	2020-2025	Strengthening of laboratories to control livestock infectious diseases and developing VC for meat and dairy products.
GEF	Strengthening Capacity in the Agriculture and Land-use Sectors in Mongolia	2019-2022	Strengthen country-level capacity to measure, report, and verify greenhouse gas emissions from the land-based agro-pastoral sector, to contribute to the Enhanced Transparency Framework (ETF) under the Paris Agreement.
IFAD	Project for Market and Pasture Management Development	2018.8-2021.9	Formation and strengthening of pasture management groups, construction of feed storage and reservoirs, VC improvement for vegetables, fruit trees and meat/dairy products.

Source: JICA Project Team

# Chapter 3. Development Strategy for the Mongolian Agro-pastoral Industry

## 3.1 Basic Concept of Agro-pastoral Value-Chain Development

### 3.1.1 Mongolian agro-pastoral industry development to date

#### (1) Comparison with other countries

Figure 3.1 shows the average growth rate of the agricultural GDP in Mongolia and other countries over the past 10 years (2012-2021). The average agricultural GDP growth rate was relatively high at 4.25% despite the overall downturn in the Mongolian economy due to falling mineral prices and the impact of COVID-19. This is higher than the world average of 3.54% and almost equal to that of East Asia and the Pacific region, where growth in the agricultural sector has been particularly remarkable. The economies of countries such as India and China, where the agricultural sector is growing at a rapid pace, are at a different scale from that of Mongolia, with the absolute value of their agricultural GDP being an order of magnitude higher. However, the fact that Mongolia has achieved the current level of agricultural GDP growth, given that the natural environment is not necessarily favorable for the agro-pastoral industry, is the result of efforts and contributions of the Mongolian government and those involved in the agro-pastoral industry.

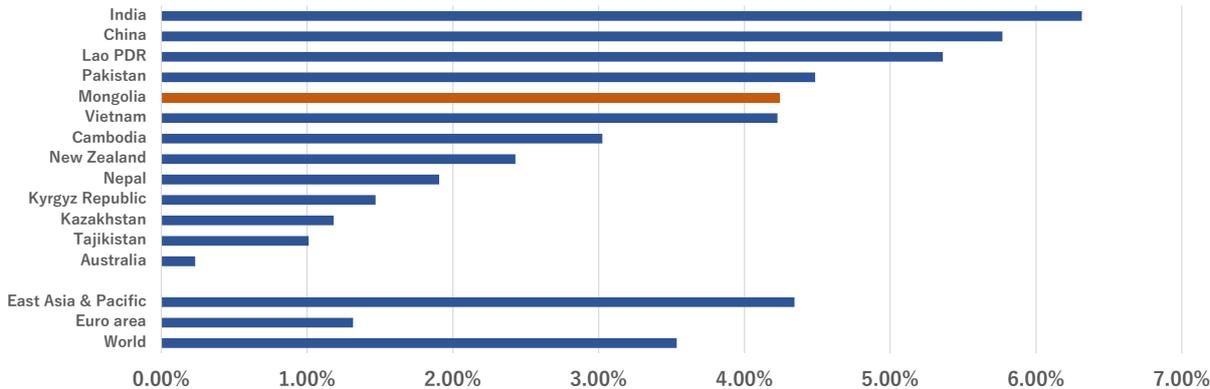


Figure 3.1 Average agricultural GDP growth across countries (2012-2021)

Source: JICA project team based on World Bank database

#### (2) Background of agricultural and pastoral development

How did the Mongolian agro-pastoral industry achieve such rapid development? In this section, we conducted a regression analysis of agricultural GDP trends over the past ten years using other agriculture-related statistical data. We summarize the relationship between the relevant statistical data and agricultural GDP trends in Figure 3.2.

The agricultural GDP, which is the dependent variable, has been growing steadily as a whole, although there was a period of stagnation due to the overall stagnation of the Mongolian economy caused by a decline in mineral prices from 2016 to 2017. The independent variables are broadly categorized into 1) market, 2) production scale, 3) productivity, and 4) value. Statistical data appropriate for each category were applied to

the analysis. The results of the regression analysis for each category are presented below.

### **1) Market**

For the market component, we used the Mongolian population as an indicator of the size of the domestic market; for the foreign market, we used the total value of exports of agro-pastoral-related products. The results of the analysis show that both indicators are significantly related to the agricultural GDP. In fact, the population and total exports of agro-pastoral products tend to increase annually, indicating that increasing market demand may be a strong driver of agricultural GDP.

### **2) Production scale**

For indicators related to the scale of production, the planted area of agricultural crops and number of livestock were used in the analysis. In the agricultural sector, the total crop planted area and wheat, onion, and cucumber planted areas showed significant relationships with agricultural GDP. In livestock production, all indicators, such as the total number of livestock and the number of cattle, horses, sheep, and goats, were significantly related to agricultural GDP. The increase in the number of livestock has already been discussed in the previous chapter, but the scale of agricultural production also tends to expand in response to the strong leadership of the Mongolian government and its agricultural policies, such as the first to third reconstruction plans that have been implemented; it can be inferred that these factors have contributed to the increase in agricultural GDP.

### **3) Productivity**

For productivity-related indicators, crop yields were applied for agriculture. For livestock, the production of meat, wool, cashmere, and leather from livestock was divided by the number of heads of livestock to calculate the productivity of the relevant product per head of livestock.<sup>98</sup> The results of the analysis show that very few indicators, either agricultural or livestock, have a significant relationship with agricultural GDP. The only significant relationship was found for wool productivity, which was negatively correlated with the agricultural GDP. This means that wool productivity per individual sheep has declined over the past decade.<sup>99</sup> This suggests that productivity was not a driver of agricultural GDP, at least in the decade 2012-2021.

### **4) Value**

With respect to value, the average transaction price, obtained by dividing the total export value by total export volume for each agricultural and livestock product, was used to classify each item into a high price range (over 100 USD/kg), a medium price range (over 10 USD/kg and under 100 USD/kg), and a low price range (under 10 USD/kg), and the relationship between the total export volume for each category and agricultural GDP was analyzed.

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<sup>98</sup> Productivity per head for meat and leather should actually be calculated based on the amount of livestock slaughtered, but since no relevant statistical data were available, calculations were made based on the total number of livestock for convenience.

<sup>99</sup> In fact, wool productivity has slightly decreased from 1.04 kg/cow in 2012 to 0.94 kg/cow in 2021.

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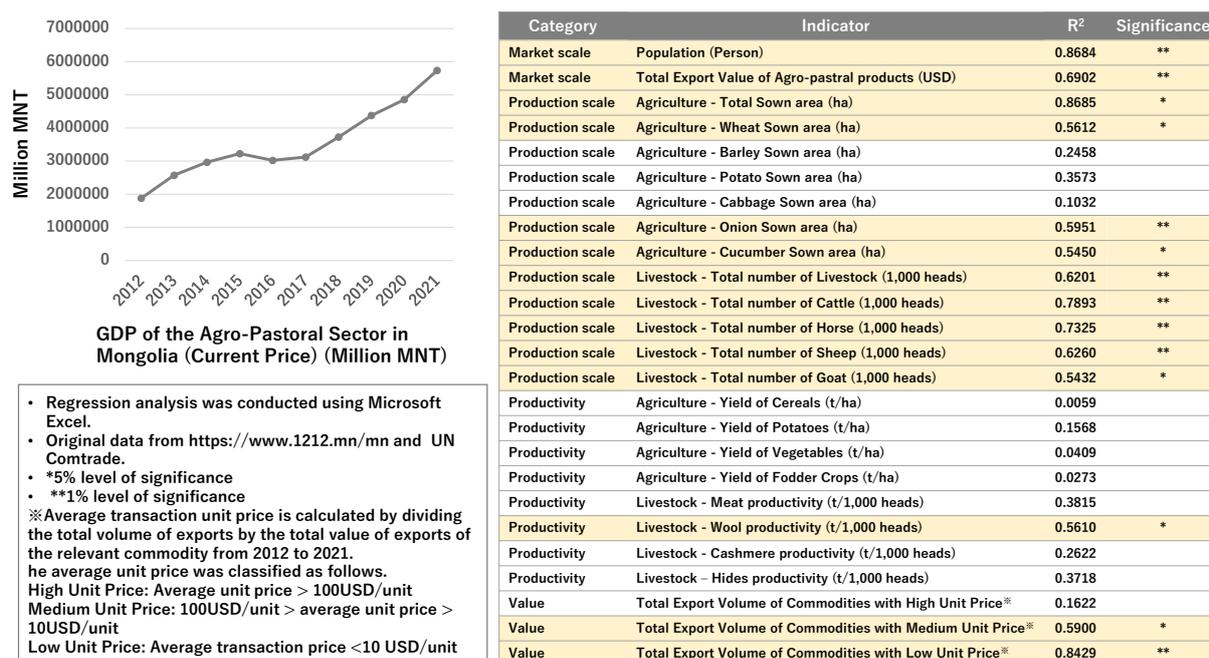


Figure 3.2 Regression analysis of Mongolian agricultural GDP

Source: JICA Project Team

The results showed no significant relationship between agricultural GDP and the volume of exports of high-price commodity groups, but a significant relationship with the volume of exports of medium- and low-price commodity groups. This suggests that the increase in exports of medium- and low-price commodities may contribute to growth in agricultural GDP.

In summary, the following points can be made:

- The factors driving Mongolia's agricultural GDP over the past decade (2012-2021) have been the expansion of the market size, production scale, and increased exports of medium- and low-priced commodity groups. In other words, the agro-pastoral sector has grown by increasing the scale of agricultural and livestock production to meet growing domestic and international market demand. In addition, the export volume has increased by adapting to the demand for raw materials and semi-processed products with a low degree of processing, from neighboring countries including China.
- However, productivity in both agriculture and livestock production has not improved sufficiently to drive agricultural GDP. Exports of high value-added finished products have also failed to boost agricultural GDP, even though production infrastructure has been steadily improving.

### 3.1.2 Future development of the agro-pastoral sector

As noted above, the growth of the agro-pastoral sector over the past decade has been essentially driven by the expansion of production scale, besides the market. This does not mean that efforts to increase productivity and add value have not been made in the past; however, unlike the expansion of the production scale, efforts to increase productivity and add value take time to produce results. In this respect, it can be said that the future growth potential for productivity improvement and value-addition is large. However, in addition to

these, the most important question is how should the agro-pastoral industry be developed by 2034, the final year of this M/P, considering various factors such as population growth in Mongolia, changes in international markets, pastureland degradation due to overgrazing, and climate change. The following section, divided broadly into the agricultural and livestock sectors, presents the future of the agro-pastoral sector.

### (1) Agriculture aector

The first point with regard to the development of Mongolia's agricultural sector, is the establishment of a production and supply system that ensures national food security. Table 3.1 shows the average annual per capita consumption of the major agricultural products. According to this table, there has been no significant change in the consumption of any of the products over the past five years. Therefore, we estimated the supply of each commodity required by the Mongolian population in 2034, from the average annual per capita consumption. Based on these estimates, one of the issues to be addressed is how much of each item can be supplied by Mongolia.

Table 3.1 Annual consumption of major agricultural products

Item	2017	2018	2019	2020	2021		2034
Population	3,096,030	3,163,991	3,232,430	3,294,335	3,347,783		3,887,004
Annual wheat consumption (kg/person)	83.85	83.25	81.67	81.59	81.88		82.4 Annual requirement 320,476 t
Annual potato consumption (kg/person)	35.95	35.68	35.02	34.97	35.10		35.3 Annual requirement 137,382 t
Annual vegetable consumption (kg/person)	77.87	77.31	75.86	75.77	76.05		76.6 Annual requirement 297,631 t
Annual fruit consumption (kg/person)	59.92	59.45	58.35	58.28	58.49		58.9 Annual requirement 228,929 t
Annual vegetable oil consumption (kg/person)	6.88	6.83	6.71	6.71	6.72		6.8 Annual requirement 26,314 t

Source: Prepared by the JICA project team, based on data from the Mongolian Bureau of Statistics.

Wheat and potatoes have already achieved 100% self-sufficiency. Even with the current production scale and yield, the population is expected to maintain 100% self-sufficiency up to 2034 (Figure 3.3). The National Diet Decision No. 36 states that 100,000 tons of wheat and 55,000 tons of potatoes are to be stockpiled each year; even with this consideration, the required supply can be seen as numerically achievable. However, the area planted and the yields of wheat and potatoes fluctuate widely. In particular, yields have fluctuated widely over the past 10 years, ranging from 0.56 to 1.68 tons/ha for wheat and 8.04 to 14.62 tons/ha for potatoes<sup>100</sup>. As wheat and potato cultivation are almost entirely dependent on rainwater, the cultivation environment is prone to both good and bad harvests; this may pose a more significant problem owing to climate change. In light of the above, the following measures are suggested to enhance the stability of wheat and potato production: 1) development of water resources and irrigation, 2) timely planting and harvesting through agricultural mechanization, and 3) improvement of soil fertility, including fertilizer application technology.

However, the current self-sufficiency rates for vegetables, fruits, and vegetable oil are low at 57%, 1%, and

<sup>100</sup> NSO Mongolian Statistical Yearbook 2021

18%, respectively, and these rates need to be improved. Productivity is lower than in other countries because the climate is not necessarily suitable for agriculture; however, it will be necessary not only to expand the scale of production but also to strengthen efforts to improve yields. For example, in a vegetable pilot project conducted by MONMAP-AVC, the introduction of superior varieties and appropriate cultivation techniques increased the yields of cucumbers and tomatoes by approximately 30% compared with conventional cultivation methods. The same is true for fruit trees, where the productivity per unit area can be increased by selecting and cultivating varieties that are more suited to the climate. Productivity of oilseed rape, used as a raw material for vegetable oil, can be improved by introducing and propagating appropriate cultivation techniques.

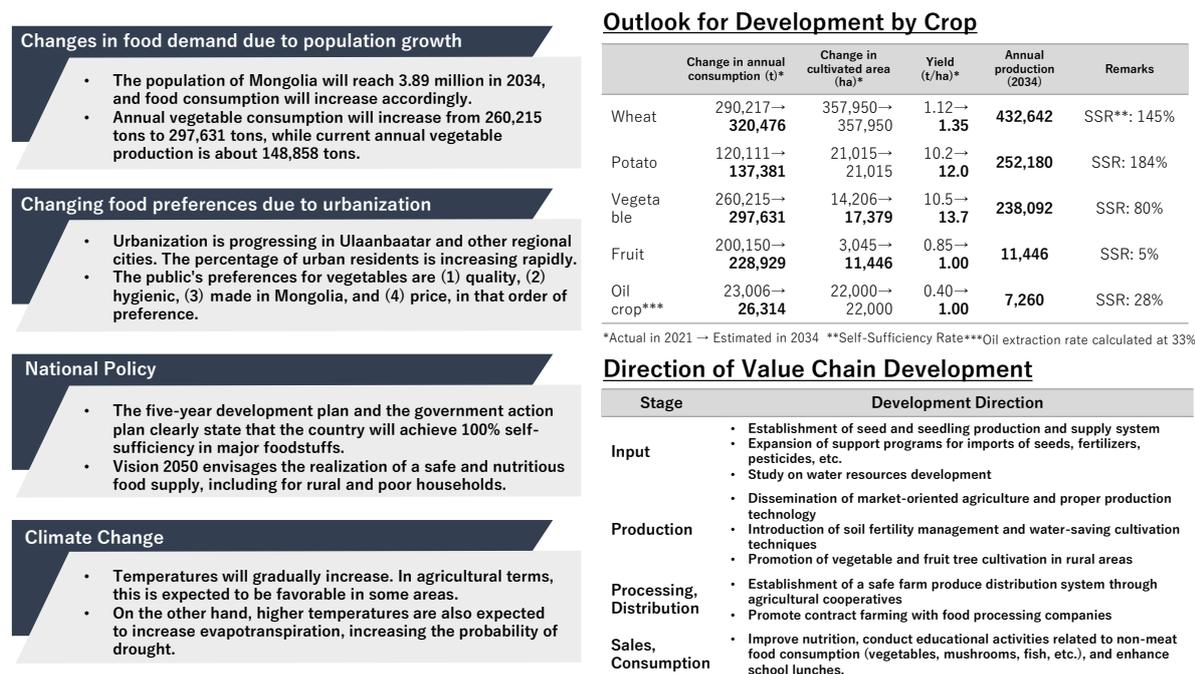


Figure 3.3 Development directions for the agricultural sector

Source: JICA Project Team

The previous section presented the state of the agricultural sector, mainly from the perspective of food security, but the viewpoint of building a value chain to supply agricultural products that meet market needs is also an important issue. In Mongolia, the urban population is increasing every year, and people's interest in food is not only focused on price, but also on quality, hygiene, and production areas.<sup>101</sup> It is also necessary to establish safe and nutritious food supply systems for rural and poor households.

## (2) Livestock sector

Unlike the agricultural sector, the main issue with the livestock sector is adding value to Mongolia's abundant raw materials for domestic consumption and exports. In terms of export expansion, besides the major market of China, Mongolia is also expected to expand exports to Southeast Asia and the Middle East, where the market size is expected to grow in the future. In addition to the general demand for safety, quality, price, and

<sup>101</sup> MONMAP-AVC, 2022, IMPACT OF COVID-19 ON SUPPLY CHAIN OF AGRICULTURAL PRODUCTS OF MONGOLIA

functionality of food and light industrial products, international market trends show an increasing demand for products that are more sustainable, environmentally friendly, and animal welfare-friendly. However, the number of livestock in Mongolia is increasing annually, and overgrazing continues to make it impossible to ensure the sustainability of pasture land. In addition to the recent introduction of a tax on livestock, it is necessary to promote the export of lamb and the effective use of old, low-productivity livestock, such as in pet food, to control the increasing number of livestock. These measures are also consistent with measures to address climate change; efforts related to controlling the number of livestock must be prioritized, given the high probability of droughts and Dzud in future. Figure 3.4 shows the direction of the value chain development for the livestock sector. Of particular importance is the need to improve the quality of raw materials, which is a major cause of value decline, and requires the development of a raw material production and distribution system.

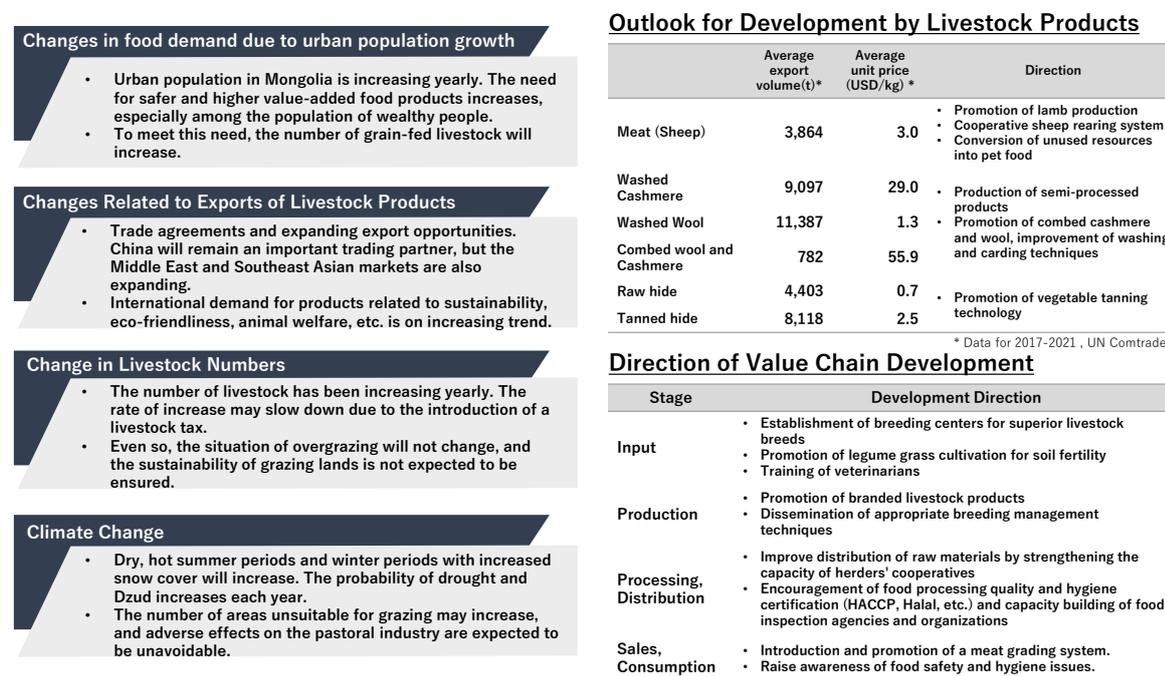


Figure 3.4 Development directions for the livestock Sector

Source: JICA Project Team

### 3.1.3 Basic development concept

In Mongolia, the agro-pastoral sector is extremely important for poverty reduction and employment generation. Currently, about one-third of the labor force is engaged in the agro-pastoral industry, of which 84% earn their livelihood from the pastoral sector. The potential of the agro-pastoral industry in Mongolia, especially the pastoral industry, is very high in terms of industrial development through value-added products such as meat, dairy products, leather, and animal fiber; however, the contribution of the agro-pastoral industry to the GDP is currently only approximately 12%.

Against this backdrop, the Long-Term Development Vision 2050, approved by the National Assembly on May 13, 2020, set nine major goals, with the vision that "by 2050, Mongolia will be a developed country in terms of social and economic development, with sustainable protection of its nature, language, borders, and

culture”. The M/P prepared for this project presents the development guidelines and action plans to be adopted over a 10-year period from 2025 to 2034, to achieve the major goals set by the Long-Term Development Vision 2050. The M/P will be incorporated into the next phase of the national policy on food, agriculture, and light industry (2025-2034).

The Mongolian agro-pastoral industry underwent a major transformation after the 1992 constitutional amendment, including the transition to a market economy. Negdels, state farms, and state-owned enterprises established under socialism were dismantled, and the assets and livestock held by these enterprises were distributed among their members, and privatized. With the rapid transition to a market economy, arable agriculture declined dramatically, while the number of livestock continued to increase. However, in recent years, the effects of Mongolian government policies have become apparent, with the area under crop cultivation on the rise. The production of wheat and potatoes, the main crops, has recovered to a level at which the country can become self-sufficient. In the pastoral sector, cashmere, a globally prized luxury material, has become one of Mongolia’s major exports and is growing to a point where it has a significant impact on the balance of trade.

However, many issues need to be addressed to realize the long-term vision of development. In the agricultural sector, the country remains highly dependent on vegetable and fruit imports; in addition to expanding the scale of production, there is a need to improve the system for shipping agricultural products during the off-season by promoting crop storage facilities and greenhouse cultivation. In the livestock sector, an explosive increase in the number of livestock has led to severe grassland degradation. Quarantine systems, including those for foot-and-mouth disease, have not been sufficiently developed, which is a major impediment to meat export. In addition, the domestic processing rates of wool, cashmere, and leather are low despite the abundant supply of raw materials, and value-addition is not well implemented in Mongolia. Table 3.2 summarizes the challenges faced by the Mongolian agro-pastoral industry. The common denominator is the lack of competitiveness in the target markets for each commodity, due to weak production and shipping systems.

To strengthen the competitiveness of Mongolian agro-pastoral products, it is necessary for both the public and private sectors to continue to pay close attention to market needs. The activities to be undertaken over the 10-year period from 2025 to 2034, are to develop products based on market needs; to establish and strengthen VC linking production, distribution, processing, and sales for stable supply, while taking advantage of the strengths of the Mongolian agro-pastoral industry (summarized in Table 3.3); and to enhance the market competitiveness and external credibility of Mongolian agro-pastoral products in target markets. Based on the above analysis of the current situation, the JICA project team proposes a development strategy for the agro-pastoral industry using the basic developmental concept: **"Realization of a strong Mongolian agro-pastoral industry through strengthening the market competitiveness of agro-pastoral products"**.

Table 3.2 Issues for Mongolian agro-pastoral products

Product	Common issues	Product specific issues
Grain	<ul style="list-style-type: none"> <li>• Limited growing season</li> <li>• Lack of storage facilities and technology</li> <li>• High heating costs for greenhouse cultivation</li> </ul>	<ul style="list-style-type: none"> <li>• Yields are unstable due to dependence on rainfall</li> <li>• Further mechanization is needed</li> </ul>
Oilseed crops		<ul style="list-style-type: none"> <li>• Oilseed rape production technology is not yet developed</li> <li>• Low awareness of oilseed rape production among farmers</li> </ul>
Potato		<ul style="list-style-type: none"> <li>• Overproduction and storage losses in recent years</li> </ul>

Product	Common issues	Product specific issues
Vegetable	<ul style="list-style-type: none"> <li>• Low number of cultivated crops and varieties</li> <li>• Weak agricultural extension system</li> <li>• Low marketing capacity (mainly of producers)</li> </ul>	<ul style="list-style-type: none"> <li>• Absence of processors</li> <li>• Insufficient production compared to its demand</li> <li>• Unstable supply (especially in winter)</li> <li>• Distribution system dependent on brokers</li> <li>• Dependence on imports for seeds and seedlings</li> </ul>
Fruits (sea buckthorn, etc.)		<ul style="list-style-type: none"> <li>• Insufficient production compared to its demand</li> <li>• Production instability (bird damage losses, high harvesting costs)</li> <li>• Insufficient evidence of nutritional components and functionality</li> <li>• Dependence on imports for seeds and seedlings</li> </ul>
Meat	<ul style="list-style-type: none"> <li>• Insufficient management of livestock due to increase in the number of livestock per household</li> <li>• Insufficient fodder due to grassland degradation</li> <li>• Insufficient quarantine measures</li> <li>• Insufficient livestock technology dissemination system</li> <li>• Strong seasonality and price fluctuations</li> <li>• Lack of a sustainable breeding plan</li> <li>• Insufficient market network</li> <li>• Poor marketing capacity (mainly of producers)</li> </ul>	<ul style="list-style-type: none"> <li>• Low volume of meat distributed through formal channels</li> <li>• Delay in diversification of processed products</li> <li>• Low number of slaughterhouses with appropriate sanitary management facilities</li> <li>• Low goat meat utilization rate</li> </ul>
Milk and dairy products		<ul style="list-style-type: none"> <li>• Low shipping rates to processors</li> <li>• Limited cold chain</li> <li>• Excess in summer and depletion in winter</li> <li>• Insufficient Quality control (especially milk hygiene)</li> </ul>
Wool		<ul style="list-style-type: none"> <li>• Low domestic processing rate</li> <li>• Hardness and thickness of fibers</li> <li>• Low quality of raw wool</li> <li>• Aging processing equipment, limited plant operation period</li> </ul>
Cashmere		<ul style="list-style-type: none"> <li>• Low domestic processing rate</li> <li>• Fiber deterioration due to aging goats</li> <li>• Aging processing equipment, lack of yarn-making facilities, and limited plant operation period</li> </ul>
Leather		<ul style="list-style-type: none"> <li>• High rate of unused raw hides</li> <li>• High rate of loss of raw hides due to perforation by external parasites</li> <li>• Improper storage of raw hides</li> <li>• Environmental pollution due to chromium treatment in tannery</li> <li>• Limited factory operation period</li> </ul>
Honey		<ul style="list-style-type: none"> <li>• Low productivity, difficulty in maintaining a colony (overwintering risk)</li> <li>• Limited foraging period</li> <li>• Inappropriate pest control (especially the use of pharmaceuticals)</li> <li>• Pesticide residue risk</li> <li>• Weak quality control system</li> <li>• High production, distribution, and marketing costs</li> </ul>

Source: JICA Project Team

Table 3.3 Strengths of Mongolian agro-pastoral products

Product	Common strength	Product specific strength
Grain	<ul style="list-style-type: none"> <li>• Extensive farmland developed during the socialist era</li> <li>• Low risk of pests and diseases in agricultural production (low use of pesticides)</li> <li>• Activities of various processing companies and related associations</li> <li>• Increased demand due to changes in dietary habits</li> </ul>	<ul style="list-style-type: none"> <li>• Government subsidy program for wheat producers</li> <li>• Existence of major companies taking over former state farms</li> </ul>
Oilseed crops		<ul style="list-style-type: none"> <li>• Incorporation of oilseed rape into the crop rotation system</li> <li>• Government support policy for oilseed rape production</li> <li>• Establishment of oil processing plants</li> </ul>
Potato		<ul style="list-style-type: none"> <li>• Establishment and dissemination of production technology</li> <li>• Establishment of domestic distribution system</li> </ul>
Vegetable		<ul style="list-style-type: none"> <li>• Expected increase in domestic demand volume (fresh and processed products)</li> <li>• Freshness compared to imported vegetables</li> <li>• Government subsidies for producers (greenhouses, heating costs, etc.)</li> </ul>
Fruits (sea buckthorn, etc.)		<ul style="list-style-type: none"> <li>• Expected expansion of domestic demand</li> <li>• Existence of large companies that conduct integrated management from production to export</li> <li>• Fruits suited to the climate</li> </ul>

Product	Common strength	Product specific strength
		<ul style="list-style-type: none"> <li>• Strong domestic market</li> <li>• Freshness compared to imported products</li> </ul>
Meat	<ul style="list-style-type: none"> <li>• Abundance of raw materials</li> <li>• Low-cost production system</li> <li>• Uniformity of basic production technology</li> <li>• "Organic" livestock products</li> <li>• Generous government support system</li> </ul>	<ul style="list-style-type: none"> <li>• Marketability (horse meat, lamb)</li> <li>• Expansion of young fattening technology and lamb production</li> </ul>
Milk and dairy products		<ul style="list-style-type: none"> <li>• Rarity of raw materials (yak milk, camel milk, etc.)</li> <li>• Rarity of products (horse milk wine)</li> </ul>
Wool		<ul style="list-style-type: none"> <li>• Rarity (yak hair, camel hair)</li> <li>• Value as organic fertilizer and building material (insulation material)</li> </ul>
Cashmere		<ul style="list-style-type: none"> <li>• Rarity</li> <li>• High fiber quality</li> <li>• Strong demand from domestic and overseas markets</li> </ul>
Leather		<ul style="list-style-type: none"> <li>• Development of industrial park for leather products</li> </ul>
Honey		<ul style="list-style-type: none"> <li>• Quality control system based on veterinary guidelines, food inspection systems, and MNS standards</li> <li>• Organized beekeeping associations in each region</li> <li>• Strong domestic demand</li> <li>• Unique nectar source and its rarity</li> <li>• Pollination function allows for cooperation with other industries.</li> <li>• Good image of Mongolian grassland</li> </ul>

Source: JICA Project Team

## 3.2 Basic Policies for Agro-pastoral Value-Chain Development

Many issues need to be addressed to “**realize a strong Mongolian agro-pastoral industry through strengthening the market competitiveness of agro-pastoral products**”. The following four development policies are presented as priority issues that must be addressed during the 10-year period of the M/P:

1. Establishing production and distribution foundations for stable supply of high value-added agricultural and pastoral products.
2. Strengthening quality and hygiene management systems and capacity of relevant administrative agencies to promote the export of agro-pastoral products.
3. Support for agro-pastoral enterprises and cooperatives, and the promotion of human resource development to revitalize the agro-pastoral industry.
4. Promoting distinctive regional agro-pastoral industries and forming agro-pastoral industry clusters.

### 3.2.1 Policy 1: Establishing production and distribution foundations for stable supply of high value-added agricultural and pastoral products

In the development of the agro-pastoral sector over the next 10 years, it is necessary to focus not only on the scale of production but also on efforts toward a stable supply of high value-added agro-pastoral products, including improvements in quality and hygiene. Tables 3.4 and 3.5 show the development policies necessary to promote the establishment of supply chains for a stable supply of high value-added products in the agriculture and livestock sectors, respectively. The target commodities are selected from the major agro-pastoral products in Mongolia, and the concept of supply chain improvement can be applied to other commodities not listed in the tables below.

Table 3.4 Agricultural sector development policies

Stage	Target product	No.	Development policies
Input	<ul style="list-style-type: none"> <li>• Vegetables</li> <li>• Fruit trees (sea buckthorn)</li> <li>• Wheat, oilseed rape</li> <li>• Mushrooms</li> </ul>	1-1-1	Strengthening the seed production system for grain and oil crops
		1-1-2	Promotion of superior seeds and varieties
		1-1-3	Training of seed producers
		1-1-4	Promotion of water resources development/irrigation development
		1-1-5	Agricultural mechanization promotion
		1-1-6	Expansion of greenhouse facility development
Production		1-1-7	Dissemination of proper cultivation techniques
		1-1-8	Diffusion of market-oriented agriculture to small-scale farmers
Distribution and Processing		1-1-9	Promotion of forcing cultivation technology
		1-1-10	Establishment of agricultural product distribution (storage) system by agricultural cooperatives
		1-1-11	Promotion of contract cultivation with food processing companies
		1-1-12	Dissemination of simple food processing techniques to small-scale farmers
Sales and Consumption		1-1-13	Conducting educational activities related to nutrition, food safety, etc.
		1-1-14	Promotion of industrial cluster development

Source: JICA Project Team

Table 3.5 Livestock sector development policies

Stage	Target product	No.	Development policies
Input	<ul style="list-style-type: none"> <li>• Meat</li> <li>• Dairy products</li> <li>• Wool</li> <li>• Cashmere</li> <li>• Leather</li> <li>• Honey</li> <li>• Fish</li> </ul>	1-2-1	Development of supply hubs for superior breeds of livestock
		1-2-2	Training of veterinarians (including private veterinarians) and livestock technicians
Production		1-2-3	Promotion of the young fattening technique
		1-2-4	Introduction of animal hair harvesting equipment and technical training
		1-2-5	Dissemination of proper breeding techniques
Distribution and Processing		1-2-6	Promotion of slaughterhouse development
		1-2-7	Fostering the pet food industry using livestock by-products
		1-2-8	Establishment of a collection and shipping system for raw wool, raw hides, and raw milk operated by herders' cooperatives
		1-2-9	Development of industrial human resources (meat processing, textiles, leather)
		1-2-10	Introduction of environmentally friendly textile and leather product technologies
		1-2-11	Promotion of the use of the traceability system
Sales and Consumption		1-2-11	Introduction of grading system for livestock products such as meat and branding promotion
		1-2-12	Promotion of cooperation with the tourism industry
	1-2-13	Promotion of industrial cluster development	

Source: JICA Project Team

### 3.2.2 Policy 2: Strengthening quality and hygiene management systems and capacity of relevant administrative agencies to promote the export of agro-pastoral products.

The future growth of the agro-pastoral sector in Mongolia depends largely on the expansion of agro-pastoral exports. Weak quality and hygiene management systems for food products, including meat, are the main bottlenecks in agro-pastoral exports. To promote the export of agricultural and pastoral products, it is essential to strengthen the trade negotiation capacity of government agencies and simplify export procedures (including animal and plant quarantine). Based on these considerations, Table 3.6 presents the development policies for strengthening the quality and hygiene management system and the capacity of relevant government agencies.

Table 3.6 Development policies for quality and hygiene management

Field	No.	Development policies
2-1. Strengthening quality and hygiene management system	2-1-1	Improving Food Safety Management Systems
	2-1-2	Strengthening the capacity of food and product inspection (quarantine) agencies
	2-1-3	Training of quality and hygiene management human resources in the private sector
	2-1-4	Promotion of acquisition of international certification for quality and hygiene management
2-2. Export promotion	2-2-1	Simplifying and streamlining export procedures for agro-pastoral products
	2-2-2	Strengthening trade negotiation capabilities
	2-2-3	Promotion of participation in international exhibitions, etc.

Source: JICA Project Team

### 3.2.3 Policy 3: Support for agro-pastoral enterprises and cooperatives, and the promotion of human resource development to revitalize the agro-pastoral industry.

To establish a system for manufacturing, packaging, and shipping products, appealing to market needs, reasonable amounts of capital investment and working capital are required. In many cases, the collateral required for borrowing and high interest rates make access to financing difficult, especially for small and medium-sized enterprises, individual farmers, and herders. Efforts are needed to develop new financing mechanisms, such as value chain financing and warehouse receipt systems. Another measure is strengthening the governance of small and medium-sized enterprises and agro-pastoral cooperatives making it easier for them to obtain loans. Additionally, it is necessary to improve the business environment by revising laws and regulations necessary to revitalize the agro-pastoral industry. Table 3.7 shows the development policies for promoting support and institutional improvements for agro-pastoral enterprises and organizations.

Table 3.7 Development policies for agro-pastoral enterprises and organizations

Field	No.	Development policies
3-1. Financial assistance	3-1-1	Introduction trial for the value chain financing system
	3-1-2	Introduction trial for the warehouse receipt system
3-2. Strengthening the governance of enterprises and cooperatives	3-2-1	Strengthening the financial management capacity of the private sector
	3-2-2	Strengthening the organizational structure and financial management capacity of agro-pastoral cooperatives
3-3. Revision of laws and regulations to revitalize the agro-pastoral industry	3-3-1	Revision of laws and regulations related to the agriculture sector - Tax Exemption for agricultural cooperative - Duty exemption for imports of agricultural inputs (seeds, fertilizers, pesticides) - Introduction of a subsidy system for promoting contract agriculture
	3-3-2	Revision of laws and regulations related to the livestock sector - Tax exemption for livestock cooperatives - Introduction of a subsidy system for promoting contractual transactions - Introduction of subsidies for obtaining international certification

Source: JICA Project Team

### 3.2.4 Policy 4: Promotion of distinctive regional agro-pastoral industries and formation of agro-pastoral industry clusters

Revitalization and economic development of the agro-pastoral industry in rural areas are important for dispersing the current concentration of the population in Ulaanbaatar. We also propose the formation of industrial clusters as a foundation for promoting competitive product manufacturing, by strengthening the network of companies handling regionally superior products as well as academic and financial institutions. In Mongolia, the concept of industrial clusters currently has no clear legal basis, and a legal framework must

be established at the earliest. Therefore, introducing a support system to promote industrial cluster activities is necessary. Another possible way to revitalize local industries is to promote the "One Village, One Product" movement, which is well-known in Mongolia. The development policies for the promotion of distinctive regional agro-pastoral industries and the formation of agro-pastoral clusters are shown in Table 3.8.

Table 3.8 Development policies for regional agro-pastoral industry promotion

Field	No.	Development policies
4-1. Cluster development	4-1-1	Development of a legal framework for cluster development
	4-1-2	Introduction of a support system for export clusters
	4-1-3	Assignment of industry-academia collaboration coordinators
4-2. Regional industrial development	4-2-1	Formation of regional logistics hubs
	4-2-2	Dissemination of the OVOP Movement

Source: JICA Project Team

## Chapter 4. Agro-pastoral Value Chain Development Program

### 4.1 Overall Structure of Each Development Program

Based on the development strategy for Mongolia’s agro-pastoral industry outlined in Chapter 3, a total of 11 programs were developed (Figure 4.1). Each program consists of several A/Ps, which were developed based on the knowledge and lessons learned from the surveys and Pilot Activities (PA) conducted by the JICA project team, as well as the experiences of Japan and third countries in value chain (VC) development. The A/P outlines the direction of development identified in the Development Strategy, with a heightened focus on "Productivity" and "Value" such as safety and security, quality, functionality, and environmental friendliness. However, it is important to note that further expansion of production scale is equally important, particularly in the agricultural sector. In preparing the A/P, we ensured the inclusion of all the "information that should be provided in the plan" as stipulated in the Development Policy Planning Law in Mongolia.

Concept	Direction	Development Program	Action Plan
Realization of a resilient Mongolian agro-pastoral industry through strengthening the market competitiveness of agro-pastoral products	1. Establishing production and distribution foundations for stable supply of high value-added agricultural and pastoral products	1.1 Vegetable Supply Chain Enhancement Program	4
		1.2 Fruit Supply Chain Enhancement Program	3
		1.3 Oil Crop Supply Chain Enhancement Program	4
		1.4 Meat and Dairy Products Supply Chain Enhancement Program	6
		1.5 Animal Hair and Hide Supply Chain Enhancement Program	3
		1.6 Honey Supply Chain Enhancement Program	4
		1.7 Other Agricultural Supply Chain Enhancement Program	4
	2. Strengthening quality and hygiene management systems and capacity of relevant administrative agencies to promote the export of agro-pastoral products	2.1 Strengthening quality and sanitation management systems for agro-pastoral products program	5
		2.2 Promoting Export of Agricultural and Pastoral Products Program	3
	3. Support for agro-pastoral enterprises and cooperatives, and the promotion of human resource development to revitalize the agro-pastoral industry	3.1 Strengthening the business management capacity of SMEs and Agricultural Cooperatives Program	4
		4.1 Regional Agriculture and Pastoral Industry Promotion Program	3
4. Promotion of distinctive regional agro-pastoral industry and formation of agro-pastoral industry clusters			

Figure 4.1 Development program structure

Source: JICA Project Team

### 4.2 Overview of Each Development Program

#### 4.2.1 Vegetable supply chain enhancement program

### Vegetable Supply Chain Enhancement Program

Vegetable production and market supply in Mongolia are on the rise, partly due to increased demand and partly because of the introduction of a subsidy system for vegetable seeds and other products. The continuation of this system is expected in the future, but it is also essential to consider exit strategies from this system. An urgent issue is to focus on the horizontal development of good practices in organizing farmers and to build a system that will generate more profits for farmers. In addition, we aim to expand domestic vegetable consumption.

	Input	Production	Processing	Logistics/Export	Sales/Consumption
Actors	Suppliers (seeds, fertilizers, facilities, etc.)	Farmers, agricultural group and associations	Food Processors	Brokers, agricultural associations, distributors and exporters	Retail stores, restaurants, hotels, educational institutions, etc.
Major Issues	Dependence on imports for the majority of quality seeds, fertilizers, and pesticides. Difficulty in accessing inputs, especially in rural areas.	Limited production period. Unstable market access. Difficulty in accessing financial services. Difficulty in accessing irrigation in some areas. High cost of winter greenhouse cultivation. Weak on agricultural extension system.	Vegetable processors themselves are insufficient. Lack of domestically produced raw materials and partial dependence on imports. Lack of funds for procurement of raw materials and investment.	Dependence on "changes" for most of distribution. Lack of storage facilities and technology. High transportation costs. Limited vegetable distribution to rural areas.	Vegetable consumption is limited, especially in rural areas. There is a need for domestically produced vegetables, but the supply is insufficient.
Counter-Measures	<div style="text-align: center;"> <div style="border: 1px solid black; background-color: #004a87; color: white; padding: 5px; margin-bottom: 5px;">1.1 Action Plan on expanding vegetable supply period through the introduction of excellent seeds and forcing cultivation</div> <div style="border: 1px solid black; background-color: #004a87; color: white; padding: 5px; margin-bottom: 5px; margin-left: 100px;">1.2 Action Plan on promoting market-oriented agriculture</div> <div style="border: 1px solid black; background-color: #004a87; color: white; padding: 5px; margin-bottom: 5px; margin-left: 200px;">1.3 Action Plan on establishing agricultural products distribution system by agricultural cooperatives</div> <div style="border: 1px solid black; background-color: #004a87; color: white; padding: 5px; margin-left: 300px;">1.4 Action Plan on implementing various training and awareness-raising activities related to simple vegetable processing and consumption</div> </div>				

Figure 4.2 Vegetable supply chain enhancement program

Source: JICA Project Team

Regarding the development direction of the vegetable value chain in Mongolia, a continuous increase in demand and expansion of the domestic market, are expected due to the demographic trends and increasing per capita consumption. Import substitution should continue to be promoted, especially considering the background that domestic vegetables are preferred in the domestic market. In order to promote import substitution, as mentioned above, issues and countermeasures are considered individually at each stage of the supply chain. However, for efficient strengthening of the entire supply chain, cross-sectional measures are required.

The Mongolian government has already provided support for the promotion of domestic vegetable production through subsidies for ten (10) types of vegetables and for winter heating costs, among others. This system is expected to continue for the time being, but it is also important to consider exit strategies. As a program to strengthen the vegetable supply chain, in line with the basic concept and development policy, the following plans are proposed: 1) to expand the volume and duration of vegetable supply by introducing high-quality seeds and varieties and forcing cultivation; 2) to promote market-oriented agriculture; 3) to establish an agricultural product distribution system by agricultural associations, and 4) implementation of various training and awareness raising activities related to simple vegetable processing and consumption. The table herein below shows the degree of relevance of these development plans in terms of their effectiveness in addressing issues or utilizing strengths and opportunities, as well as how well their alignment with the development plans.

Table 4.1 Relevance of vegetable supply chain enhancement program and development directions

Specific issues, strengths, and development plans	Vegetable Supply Chain Enhancement Program				
	1.1	1.2	1.3	1.4	
<b>Issues</b>	Dependence on imports for most agricultural inputs (high-quality seeds, fertilizers, pesticides, etc.)	⊙		○	
	Limited production period	○		⊙	
	Weak agricultural extension system		⊙	○	
	Shortage of domestic raw materials at times for the processor	○		○	
	Dependence on middlemen for most of the distribution. Lack of storage facilities.		○	⊙	○
	High transportation costs. Limited vegetable supply to rural areas.				⊙
<b>Strengths· Opportunity</b>	Vegetables that are safer than those in neighboring countries due to less use of fertilizers & pesticides				⊙
	Public markets, storage facilities, and other infrastructure are being developed in Ulaanbaatar		○	⊙	
	Vegetable processing companies and associations exist	⊙		⊙	
	Food safety systems such as Mongolian GAP are in development.				⊙
	Domestic demand for vegetables is increasing	○	○	○	○
	Ministry of Health and other government agencies promote vegetable consumption	○	○	○	⊙
Environmental conditions in summer are suitable for vegetable production	⊙	○	○	○	
<b>Direction of Development</b>	1-1-1 Strengthening Seed Production System for Grains and Oil Crops				
	1-1-2 Promotion of excellent seeds and varieties	⊙	○	○	
	1-1-3 Capacity development of seed producers	⊙	○	○	
	1-1-4 Promote the development of water resources and irrigation	○			
	1-1-5 Agricultural mechanization promotion			⊙	
	1-1-6 Expansion of greenhouse facility development	○	○	○	
	1-1-7 Dissemination of proper cultivation techniques	⊙	⊙	⊙	○
	1-1-8 Dissemination of market-oriented agriculture to small-scale farmers		⊙	○	⊙
	1-1-9 Promotion of forcing cultivation techniques	⊙	○	○	
	1-1-10 Establishment of agricultural product distribution (storage) system by agricultural associations		○	⊙	
	1-1-11 Promote contract farming with food processing companies	○		⊙	
	1-1-12 Dissemination of simple food processing techniques to small-scale farmers				⊙
	1-1-13 Conducting educational activities related to nutrition, food safety, etc.				⊙
	1-1-14 Cluster Promotion				

○: strongly linked, ⊙: very strongly linked

Source: JICA Project Team

The following is an overview of each plan.

### Action Plan on Expanding Vegetable Supply Period Through the Introduction of Excellent Seeds and Forcing Cultivation.

This A/P aims to increase the productivity and supply period of vegetables by introducing high-quality domestic and foreign vegetable seeds and varieties suited to Mongolia's environmental conditions. It also involved the introduction of forcing cultivation technology that matches the characteristics of the varieties. Efficient production through the introduction of high-quality seeds and varieties will reduce vegetable production costs and improve the farmers' profitability. The MOFALI will take the lead in building a database of high-quality seeds and varieties, involving private companies and organizations to establish a

vegetable production and supply system that better meets market needs.

### **Action Plan on Promoting Market-oriented Agriculture**

The A/P aims to improve inputs and market access through capacity-building training for small-scale producers, thereby stabilizing farm management and generating income. The MOFALI will take the lead in establishing an extension implementation system, employing a cascade approach with master trainer training and various training programs for producers. Eventually, extension guidelines and manuals for market-oriented agriculture will be developed, and a system will be put in place for use by extension agents and small-scale producers. Notably, JICA has been developing a market-oriented agricultural promotion approach called SHEP (Smallholder Horticulture Empowerment & Promotion) in over 50 countries around the world, and this approach is expected to be adopted.

### **Action Plan on Establishing Agricultural Products Distribution System by Agricultural Cooperatives**

The A/P aims to strengthen farmers' cooperatives and build a business-based agricultural product distribution and primary processing system. The approach is expected to reduce costs and improve profitability in the value chain, as well as diversify sales channels by enabling transactions of a certain quantity and type of products. The MOFALI will play a central role in supporting the formation of cooperatives, investing in facilities and equipment, and providing technical training and services.

### **Action Plan on Implementing Various training and Awareness-raising Activities Related to Simple Vegetable Processing and Consumption**

In Mongolia, where vegetable consumption is low compared to the global average, there is a need to expand vegetable consumption, including for health promotion. This A/P aims to stimulate domestic vegetable consumption in Mongolia and improve the nutritional status of Mongolian people through educational activities and the introduction of simple vegetable processing technology in rural areas.

In addition, good practices identified in past Mongolian government initiatives and donor-supported projects, have been used as references in the formulation of the A/P. In the MONVEGI project (Inclusive and Sustainable Vegetable Production and Marketing) supported by the SDC, the introduction of high-quality seeds and varieties and the strengthening of producer organizations are recognized as good practices by all parties concerned. In addition, the PAs of this project (MONMAP-AVC) also achieved some positive results in the introducing seeds and varieties developed by Japanese company and in contractual transactions between Mongolian processing companies and producers using forcing cultivation technique. By incorporating these results and lessons learned and focusing on the horizontal conversion of good practices, the A/P aims to effectively resolve issues and expand domestic vegetable consumption by stimulating vegetable consumption.

#### **(1) Action Plan on Expanding Vegetable Supply Period Through the Introduction of Excellent Seeds and Forcing Cultivation**

**A/P1-1: Action Plan on Expanding Vegetable Supply Period Through the Introduction of Excellent Seeds and Forcing Cultivation**

Objective	Introduce excellent seeds and varieties from domestic and foreign countries, as well as forcing cultivation, to expand domestic production and supply of vegetables and supply period.	
Baseline of A/P	Vegetable production is approximately 148,859 tons (in 2022).	
Goal of A/P	Vegetable production will be increased by 9,000 tons (approximately 7%) through the introduction of high-quality seeds, varieties, and forcing cultivation.	
Target area	All over Mongolia. However, priority will be given to the suburbs of UB and major vegetable-producing areas.	
Expected Outcomes	<ol style="list-style-type: none"> <li>(1) A comprehensive database of high-quality seeds and varieties will be created.</li> <li>(2) By increasing domestic production and supply of vegetables, the aim to fully meet domestic demand.</li> <li>(3) The introduction of superior seeds and varieties, coupled with the forcing cultivation will enable to lead to more efficient production and, in turn, reduce the cost of vegetable production, thereby improving profitability.</li> <li>(4) Through the introduction of contract farming, the production and supply of vegetables that better meet market needs can be achieved through collaboration between farmers and buyers (processors and retail companies).</li> </ol>	
Activities	<ol style="list-style-type: none"> <li>(1) To compile a database of high-quality seeds and varieties of vegetables and prepare the necessary implementation guidelines. The MOFALI Agricultural Policy Implementation and Coordination Department, R/D Center, etc. will take the lead in collecting information on high-quality seeds and varieties to be introduced domestically in Mongolia and compile an electronic database. In addition, guidelines for the implementation of this plan will be prepared with reference to similar efforts made by JICA, SDC, ADB, and other organizations.</li> <li>(2) To select private organizations (processing and retail companies, NGOs, etc.) as project targets through publicly solicitation. MOFALI will organize a briefing session on the implementation guidelines for the private companies, NGO personnel, and vegetable farmers involved in the project and invite public participation. Each year, Five (5) companies/organizations will be selected from the applicants totaling 25 companies/organizations.</li> <li>(3) Educational activities to promote the use of high-quality seeds and contract cultivation In collaboration with the selected companies/organizations, educational activities to promote the use of high-quality seeds and varieties will be undertaken. Each company/organization will conduct trial transactions for contract farming in consultation with farmers who are willing to do business with the company/organization.</li> <li>(4) Training in cultivation techniques (including raising seedlings, and greenhouse cultivation) and promotion of contract farming: In cooperation with companies and organizations, training will be provided on cultivation techniques (raising seedlings, forcing cultivation, greenhouse cultivation, etc.). In addition, awareness-raising and dissemination activities related to contract farming will be conducted for producers interested in contract farming.</li> <li>(5) Regular monitoring and evaluation: MOFALI and R/D centers will take the lead in monitoring and evaluating the implementation of the plan on a regular basis, accumulate the results, and share them with relevant parties. For seeds and varieties, the cultivation results such as yield will be reflected in the database.</li> </ol>	
Input	<u>Government</u> <ul style="list-style-type: none"> <li>• Subsidies for agricultural materials and vegetables</li> <li>• Cost of database creation</li> <li>• Staff of the agricultural administration of each aimag / soum (allowance and transportation)</li> <li>• Monitoring by central government officials</li> </ul>	<u>Private</u> <ul style="list-style-type: none"> <li>• Agricultural materials and equipment</li> <li>• Training and education expenses (lecturers, etc.)</li> <li>• Administrative expenses for business collaboration agreements</li> </ul>
Project Cost	Total project cost: 16,103 Million MNT (6,129,000 USD)	
Beneficiary Effects/Impacts	A cumulative total of 45 companies will increase production by 200 tons/year/company, for a total of 9,000 tons/year of vegetables. Thus, the economic impact of 15 million MNT/ton * 9,000 tons = 135,000 million MNT/year will be achieved.	
Consistency with Policy	<ol style="list-style-type: none"> <li>1. Vision 2050 3.1.1 Improve raw materials and product quality of agricultural and pastoral products.</li> <li>2. Resolution of the Grand National Assembly of Mongolia No. 36 3.2.3 Establish an electronic database to register producers of crop varieties and crop-specific seeds and</li> </ol>	

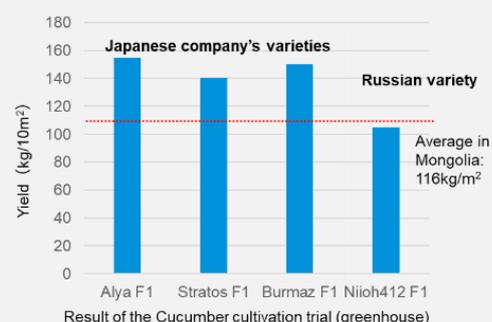
	seedlings.
Remarks	<ul style="list-style-type: none"> <li>While compiling a database of seeds and varieties, it is important to refer to the information on projects conducted by SDC (MONVEGI) and JICA (MONMAP, Grassroots Project (Takikawa, Hokkaido)).</li> <li>Contract farming arrangements should focus on agricultural products that meet the market needs and offer mutual benefits to both, the seller (farmers) and the buyers (processing/retailer).</li> </ul>

Project Implementation Schedule and Budget

Activities	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total	
(1) Creation of a database, and implementation guidelines												
(2) Public solicitation and selection of private organizations												
(3) Educational activities to promote excellent seeds and contract farming												
(4) Training cultivation technique & promotion of contract farming												
(5) Monitoring and evaluation												
Total Cost	Mil MNT	353	750	1,000	1,250	1,500	1,750	2,000	2,250	2,500	2,750	16,103
	Thousand USD	139	285	380	475	570	666	761	856	951	1,046	6,129

**BOX: MONMAP-AVC Pilot Activity for Expansion of Vegetable Production and Supply Season**

Due to Mongolia's unique cool continental climate conditions, the cultivation season is limited, and environmental risks exist. Due to these environmental conditions, vegetable yields are not so high compared to the world average. In this PA, for the purpose of increasing vegetable yields, supplying vegetable seedlings grown in the greenhouse, and accelerating the harvest and shipping period, we conducted (1) introduction of seeds and varieties of tomatoes and cucumbers produced by a Japanese seed company, and (2) contract farming for the supply of raw materials between processing companies and farmers who have introduced the techniques of forcing cultivation. The characteristics of the varieties introduced in (1) include early maturing type (early ripening, short growing season), high yields, stable fruit set even in cool environments, and disease resistance with hybrid seeds (F1). Forcing cultivation techniques introduced in (2) include raising seedlings in the greenhouse and introducing mulching materials and drip irrigation in the open field. As a result, in the trial cultivation of cucumbers in (1), as shown in the figure on the right, the yield was more than 20% higher than that of the target Russian variety and the Mongolian average, and the entire process from sowing to harvest was completed in two growing cycles. In (2), the harvest date was about two weeks earlier than in the conventional farming method, and the total yield increased significantly. Policies related to this PA include the revision of the Seed Law (2022), which establishes a system for importing seeds from foreign countries. On the other hand, tariffs are imposed on seeds from foreign countries, which is a barrier for farmers and enterprises. Since it is not realistic to produce all vegetable and crop seeds domestically, it would be effective to impose tariffs on imported seeds for potatoes, which have achieved domestic seed production among major vegetables, and to eliminate tariffs on other vegetables to promote imported seeds and increase domestic vegetable productivity.



**(2) Action Plan on Promoting Market-oriented Agriculture**

<b>A/P1-2: Action Plan on Promoting Market-oriented Agriculture</b>	
Objective	Through capacity-building training for small-scale farmers, the A/P aims to improve input and market access, stabilize farmer management, and increase profits.
Baseline of A/P	Assumes per capita farm income of 3,600,000 MNT/year.
Goal of A/P	Per capita income of the enhanced small farmers will be improved by 1,200,000 MNT/year (approximately 30%).
Target area	All over Mongolia. However, preference will be given to the suburbs of UB with lower priority given to areas that are already major vegetable producers.
Expected Outcomes	<ol style="list-style-type: none"> <li>(1) Implementation guidelines, extension guidelines, and manuals for market-oriented agriculture in Mongolia will be developed for the implementation plan.</li> <li>(2) The capacity of human resources (e.g., aimag / soum's agricultural staff) to provide extension services related to market-oriented farm management will be improved, and an extension implementation system will be established.</li> <li>(3) The income and profitability of target farmers will be improved.</li> </ol>
Activities	<ol style="list-style-type: none"> <li>(1) Implementation guidelines necessary for the implementation of the plan will be prepared mainly by The MOFALI, and the implementation guidelines will be explained to the agriculture department officials of each aimag and Soum.                      The Agricultural Policy Coordination and Implementation department, MOFALI, and the R/D Center will take the lead in conducting market research and analysis to understand the demand and supply situation of vegetables. Then, the implementation guidelines will be prepared with reference to the market-oriented agriculture approach (SHEP: Smallholder Horticulture Empowerment and Promotion) that has been implemented by JICA and other organizations in the world. Briefing sessions will be held to explain the implementation guidelines to aimag and Soum's agricultural administration officials.</li> <li>(2) Select aimag / soum for the project.                      Establish selection criteria to solicit applications from aimags and soums who wish to implement the A/P. The selection criteria will be clearly stated and an open call for applications will be issued to aimags and soums. Approximately 3 aimags and 10 soums will be selected.</li> <li>(3) Provide technical training on market-oriented agriculture to the staff in charge of aimag / soum for the A/P.                      The MOFALI and the R/D Center will collaborate to prepare training materials and formats necessary for technical training. The R/D Center will take the lead in providing technical training (ToT: Training of Trainers) to the selected aimag and soum agricultural officers.</li> <li>(4) Provide training and guidance to farmer groups through the staff in charge of Soum.                      Soum staff, trained through the above ToT, will provide technical training to farmer groups on market-oriented agriculture. The technical training will include market survey, business planning including crop selection and crop calendar, marketing, and farm business management. In addition, study tours will be planned and implemented to learn from aimags and soums who are already making good efforts.</li> <li>(5) Market research and matching with input suppliers and market actors by farmer groups will be supported to stabilize farm management and improve the profitability of participating farmer groups.                      R/D centers and aimag and soum officers will assist farmer groups in market surveys and matching with suppliers and market actors (processing companies, retailers/supermarkets, etc.). If mutual agreement is reached, a contract farming or contract trading agreement will be signed and trial trading will be commenced.</li> <li>(6) Monitoring and evaluation of A/P by MOFALI and R/D Center                      The MOFALI and R/D Center will monitor and evaluate the A/P, update the implementation and dissemination guidelines for the dissemination and expansion phase.</li> <li>(7) Expand activities (2) to (6) for the dissemination and expansion phase                      Activities (2) through (6) can be conducted and completed in one year, and approximately 3 aimags and 10 soums will be selected each year to implement similar activities to practice the dissemination and expansion of market-oriented agriculture. In the final year, MOFALI will summarize the A/P results, extract achievements and lessons learned, and finalize the extension guidelines and manual.</li> </ol>

Input	<p><u>Government</u></p> <ul style="list-style-type: none"> <li>• Agricultural administration staff of each aimag and soum (lecturer's fee and daily allowance)</li> <li>• Monitoring and evaluation by the central government</li> <li>• Expenses for events related to matching, etc.</li> <li>• Cost of production of guidelines and manuals</li> <li>• Subsidies for agricultural inputs and vegetables</li> </ul>	<p><u>Private</u></p> <ul style="list-style-type: none"> <li>• Agricultural input costs</li> <li>• Marketing expenses</li> <li>• Administrative expenses for contract transactions</li> </ul>
Project Cost	Total project cost: 5,599 Million MNT (2,131,000 USD)	
Beneficiary Effects/Impacts	Farmers who take the series of training courses will be 30% more profitable than they were before the project was implemented, creating an economic impact of 1,200,000 MNT/year/farmer x 3,500 farmers = 4,200 million MNT.	
Consistency with Policy	<ol style="list-style-type: none"> <li>1. Vision 2050 3.1.1 Improve the quality of raw materials and products of agricultural and pastoral products.</li> <li>2. Resolution of the Grand National Assembly of Mongolia No. 36 3.3. Adopting the System Technical Procedures for Agricultural Management in Mongolia</li> </ol>	
Remarks	<ul style="list-style-type: none"> <li>• The technical training should be based on JICA's SHEP handbooks and other documents available in various parts of the world.</li> <li>• The aimag and soum representatives should monitor the activities in order to maintain smooth communication among the parties concerned during the contract farming and contract transaction phases.</li> </ul>	

Project Implementation Schedule and Budget

Activities	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
(1) Preparation of Implementation guidelines											
(2) Selection of target aimag and soum											
(3) Implementation of technical training (ToT)											
(4) Implementation of training for farmer groups											
(5) Support for market survey and matching											
(6) Monitoring and evaluation											
Total Cost	Mil MNT	599	700	700	700	700	700	800			5,599
	Thousand USD	269	266	266	266	266	266	266			2,131

**BOX: Smallholder Horticulture Empowerment and Promotion (SHEP) Approach**

JICA is implementing a project using the SHEP approach<sup>102</sup> to encourage small farmers to increase their incomes in 51 countries around the world, mainly in Africa (as of March 2022). The concept of SHEP is a hybrid of economics and psychology and is integration of the "agriculture to sell" concept based on the "information asymmetry" theory of economics, and the "self-determination theory" of psychology. SHEP's distinctive activity method consists of "four steps": (1) SHEP activity briefing session to select target farmers and share objectives, (2) participatory baseline survey to create opportunities for farmers to become aware of the SHEP, (3) Decisions by farmers, including crop selection and timing of shipment based on market survey results, and (4) Provision of demand-driven technical training based on market survey results, which are then used to develop "solutions" for the project. In light of the current situation of the Mongolian vegetable supply chain, characterized by seasonal fluctuations in vegetable supply and pricing, the application of the SHEP approach appears to be highly useful.



<sup>102</sup> [https://www.jica.go.jp/Resource/activities/issues/agricul/ku57pq00002cubgq-att/business\\_strategy\\_01.pdf](https://www.jica.go.jp/Resource/activities/issues/agricul/ku57pq00002cubgq-att/business_strategy_01.pdf)

### (3) Action Plan on Establishing Agricultural Products Distribution System by Agricultural Cooperatives

<b>A/P1-3: Action Plan on Establishing Agricultural Products Distribution System by Agricultural Cooperatives</b>			
Objective	Establish a system for the distribution and primary processing of agricultural products on a business basis by agricultural cooperatives.		
Baseline of A/P	Enhanced capacity cooperatives assume 10		
Goal of A/P	More than 100 agricultural cooperatives across the country will have their capacities strengthened to distribute agricultural products on a business basis. Increased production and distribution of domestically produced vegetables based on market needs, with an annual transaction value of 1,000 million MNT/cooperative for secondary cooperatives.		
Target area	All over Mongolia. Preference will be given to UB suburbs and regional core cities.		
Expected Outcomes	<ol style="list-style-type: none"> <li>(1) The business plan format (facility size, potential suppliers, types of produce to be supplied, and profitability analysis) necessary to implement the plan will be developed.</li> <li>(2) The increase in organized vegetable production and distribution will improve the livelihoods of agricultural cooperative members in the suburbs of UB and in the regional core cities.</li> <li>(3) Organized agricultural product distribution system will be established by agricultural cooperatives.</li> <li>(4) Organizational development, governance structures, and financial management of agricultural cooperatives are strengthened.</li> </ol>		
Activities	<ol style="list-style-type: none"> <li>(1) To develop a business plan to be implemented by the agricultural cooperatives. In collaboration with MOFALI Agricultural Policy Implementation and Coordination Department, NAMAC, and Mongolian Farmers Association for Rural Development (NGO), a business plan will be prepared for the agricultural cooperatives. This plan will include details such as facility size, potential suppliers, types of agricultural products to be supplied, and a profitability analysis. The institutional design and implementation guidelines for the implementation of the plan will be developed by referring to similar initiatives implemented by SDC (MONVEGI Project: Inclusive and sustainable vegetable production and marketing) and other organizations. Briefing sessions will be held to explain the system and the implementation guidelines to the persons in charge of the agricultural departments of each aimag and soum.</li> <li>(2) Select farmers and farmer groups that can participate in the A/P. MOFALI, aimag, and NAMAC will work together to establish selection criteria in order to publicize the business plan and invite applications from farmers and farmer groups that can participate in this A/P. The selection criteria will be clearly stated and an open call for applications will be issued to farmer groups. The number of farmer groups to be selected will be approximately 10 primary cooperatives in each of the target aimag / soum (100 cooperatives in total), and 10 secondary cooperatives, 5 in the UB suburbs and 5 in regional core cities.</li> <li>(3) Provide organizing support to farmer groups. Support the establishment of a primary cooperative responsible for raw material production and supply, and a secondary cooperative responsible for distribution and sales (including washing and sorting/grading/packing and marketing). Specifically, the A/P will support corporate registration as an cooperative.</li> <li>(4) Provide assistance to organized agricultural cooperatives regarding capital investment and technical training. The consortium will construct storage facilities and provide equipment such as washers and sorters to the secondary cooperative. In addition to the maintenance and management of these facilities, training will be provided in marketing (business meetings with retailers, restaurants, schools, hotels, etc.), collection, sorting, primary processing, and cooperative management.</li> </ol>		
Input	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <u>Government</u> <ul style="list-style-type: none"> <li>• Business plan policy expenses</li> <li>• Construction of storage facilities and procurement of equipment</li> <li>• Agricultural administration staff of each aimag and soum (allowance and transportation)</li> </ul> </td> <td style="width: 50%; vertical-align: top;"> <u>Private</u> <ul style="list-style-type: none"> <li>• Cost of construction of storage facilities and procurement of equipment</li> <li>• Expenses related to seeds and cultivation</li> <li>• Marketing and administrative expenses, etc.</li> </ul> </td> </tr> </table>	<u>Government</u> <ul style="list-style-type: none"> <li>• Business plan policy expenses</li> <li>• Construction of storage facilities and procurement of equipment</li> <li>• Agricultural administration staff of each aimag and soum (allowance and transportation)</li> </ul>	<u>Private</u> <ul style="list-style-type: none"> <li>• Cost of construction of storage facilities and procurement of equipment</li> <li>• Expenses related to seeds and cultivation</li> <li>• Marketing and administrative expenses, etc.</li> </ul>
<u>Government</u> <ul style="list-style-type: none"> <li>• Business plan policy expenses</li> <li>• Construction of storage facilities and procurement of equipment</li> <li>• Agricultural administration staff of each aimag and soum (allowance and transportation)</li> </ul>	<u>Private</u> <ul style="list-style-type: none"> <li>• Cost of construction of storage facilities and procurement of equipment</li> <li>• Expenses related to seeds and cultivation</li> <li>• Marketing and administrative expenses, etc.</li> </ul>		
Project Cost	Total business expenses: 7,755 Million MNT (2,952,000 USD)		
Beneficiary	Annual transaction of secondary association will be 1,000 million MNT/ cooperative *10 cooperatives		

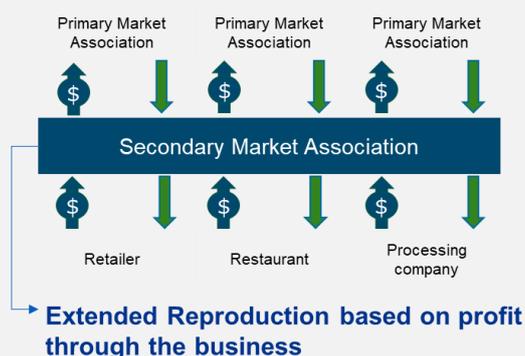
Effects/Impacts	= 10,000 million MNT
Consistency with Policy	<ol style="list-style-type: none"> <li>Vision 2050 3.1.1 Improve raw materials and product quality of agro-pastoral products.</li> <li>Mongolian National Grand Council Resolution No. 36 4.2.1 Create a model agricultural cooperative to establish a proper network of livestock and livestock raw materials, their preparation and supply, initial processing, and marketing.</li> </ol>
Remarks	<ul style="list-style-type: none"> <li>For information on equipment to be procured and technical training content, refer to the MONVEGI Project by SDC/Mongolian Farmers Association for Rural Development and similar projects conducted by ADB.</li> <li>In addition to organizing farmers, the introduction of high-quality seeds will also be considered; seeds introduced and registered as varieties by SDC (MONVEGI) and JICA projects (MONMAP, Grassroots Project (Takikawa, Hokkaido)) can be utilized.</li> </ul>

**Project Implementation Schedule and Budget**

Activities		2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
(1) Preparation of Business Plans												
(2) Public solicitation and selection of farmers and farmer groups												
(3) Organizational Support												
(4) Support for capital investment and technical training												
Total Cost	Mil MNT	255	1,500	1,500	1,500	1,500	1,500					7,755
	Thousand USD	102	570	570	570	570	570					2,952

**BOX : Project Supported by SDC (MONVEGI)**

MONVEGI has established a primary marketing cooperative in each soum within the target aimag and a secondary marketing cooperative in Ulaanbaatar. The secondary marketing cooperative conducts business negotiations with supermarkets and restaurants in Ulaanbaatar and requests each primary marketing cooperative to supply raw materials according to the content of the orders received. In addition, SDC has provided the secondary marketing cooperative with storage facilities and a primary processing plant, making the support more effective. Through this structure, secondary marketing cooperative's sales have continued to rise year after year, reaching 2.7 billion MNT in 2022. In the initial conception, the primary marketing cooperative of each soum was to undertake marketing of vegetables independently, but there was a problem in terms of quantity, especially for wholesaling to supermarkets in UB City, so a production and distribution system that meets market needs was realized by establishing the primary and secondary cooperative structure. The primary and secondary cooperative structure has realized a production and distribution system that meets market needs. In addition, MONVEGI manages approximately 90 varieties of vegetables by registering and importing high-quality seed varieties from European seed companies.



**(4) Action Plan on Implementing Various Training and Awareness-raising Activities Related to Simple Vegetable Processing and Consumption**

A/P1-4: Action Plan on Implementing Various Training and Awareness-raising Activities Related to Simple Vegetable Processing and Consumption	
Objective	By implementing educational activities related to the consumption of domestic vegetables and introducing simple vegetable processing techniques in rural areas, the plan aims to increase the

	consumption of domestic vegetables in Mongolia and improve the nutrition status of Mongolian people.	
Baseline of A/P	• National average of vegetable consumption per capita is 2.1 kg/month	
Goal of A/P	<ul style="list-style-type: none"> <li>• Per capita vegetable consumption will increase to 3.0 kg/month.</li> <li>• Vegetable intake in the young generation will be increased.</li> <li>• Production and processing of domestically produced vegetables in rural areas will increase.</li> </ul>	
Target area	All over Mongolia. Preference will be given to UB suburbs and regional core cities.	
Expected Outcomes	<ul style="list-style-type: none"> <li>(1) Increase in domestic demand and consumption of vegetables by stimulating consumption of domestically produced vegetables.</li> <li>(2) Providing vegetables in school lunches and implementing nutrition education will improve children's health awareness and nutritional intake.</li> <li>(3) Training in vegetable gardening and simple food processing techniques in rural areas will reduce the burden on households and promote local vegetable production (self-sufficiency).</li> </ul>	
Activities	<p>(1) Planning and creating initiatives to raise awareness of domestic vegetable consumption MOFALI will take the lead in preparing implementation guidelines for initiatives related to the awareness of domestic vegetable consumption in cooperation with each aimag, soum and the Ministry of Health. The main activities include 1) lectures and practical training on vegetables and nutrition at schools and kindergartens, 2) procurement and use of local vegetables for schools and kindergartens, 3) training on vegetable cultivation in rural areas (home gardens, simple vegetable processing techniques), 4) procurement and sales of local vegetables by local retailers, and 5) publication of recipes and cooking events related to vegetables. In preparing the implementation guidelines, similar initiatives implemented by JICA (Project for Supporting the Implementation of School Lunch Service), SDC (MONVEGI Project), and others will be used as references. Briefing sessions will be held to explain the implementation guidelines to the agricultural department officials of each aimag and soum.</p> <p>(2) Lectures and practical training on vegetables and nutrition at schools and kindergartens. Procurement and use of local vegetables for schools and kindergartens.</p> <ul style="list-style-type: none"> <li>1) Collect and organize information on the dietary situation and nutrition of students and children (essential nutrients, nutritional intake standards, school lunch menus, procurement and ordering methods for school lunch ingredients, etc.)</li> <li>2) Lectures and practical training on food and nutrition</li> <li>3) Order and procure foodstuffs in accordance with the Nutritional Intake Standards and cooperation with the Department of Education and local government</li> </ul> <p>Training on vegetable cultivation in rural areas (home gardens, simple vegetable processing techniques). Procurement and sale of local vegetables at local retailers.</p> <ul style="list-style-type: none"> <li>1) Collect and organize existing vegetable growing manuals prepared by MOFALI, greenhouse associations, and other industry organizations</li> <li>2) Organize vegetable awareness and matching events between local retailers and producers</li> <li>3) Training in vegetable cultivation by aimag and soum agricultural department staff</li> </ul> <p>Release of vegetable-related recipes, cooking events, etc.</p> <ul style="list-style-type: none"> <li>1) Create food recipes based on nutritional standards and food safety information</li> <li>2) Broadcasting of programs on "nutritional improvement and food safety" on TV and radio stations</li> <li>3) Conducting sales promotion and educational events at retail stores in Ulaanbaatar and regional core cities</li> </ul>	
Input	<u>Government</u> <ul style="list-style-type: none"> <li>• Cost of producing implementation guidelines and formats</li> <li>• Nutrition and other related research expenses</li> <li>• Bidding-related expenses for school lunch ingredients</li> <li>• Agricultural staff of each aimag / soum (allowance and transportation)</li> </ul>	<u>Private</u> <ul style="list-style-type: none"> <li>• Purchasing and transportation of foodstuffs for school lunch</li> <li>• Marketing and administrative expenses, etc.</li> <li>• Public relations expenses (program production, event expenses, etc.)</li> </ul>
Project Cost	Total project cost: 4,889 Million MNT (1,861,000 USD)	
Beneficiary Effects/Impacts	Economic impact on increased vegetable consumption will be 0.9 kg/person x 3,000 MNT/kg x 3.3 million persons = 5,670,000,000 MNT/year	

Consistency with Policy	<ol style="list-style-type: none"> <li>1. Vision 2050 3.1.1 Improve raw material and product quality of agricultural and pastoral products.</li> <li>2. Mongolian National Grand Council Resolution No. 36 5.10 Conduct training, publicity, and awareness activities on the proper use of meals and food.</li> </ol>
Remarks	<ul style="list-style-type: none"> <li>• Resolution No. 36 states that as part of the social responsibility program, all TV and radio stations will broadcast a "Time for Food Safety" program at a set time each week to encourage the public to eat and use food appropriately.</li> </ul>

#### Project Implementation Schedule and Budget

Activities		2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
(1) Planning												
(2) Various activities												
Total Cost	Mil MNT	130	517	517	517	517	517	517	517	517	623	4,889
	Thousand USD	56	196	196	196	196	196	196	196	196	237	1,861

#### **BOX : JICA Project to Support the Introduction of School Meals**

JICA is implementing the "Project for Supporting the Implementation of School Lunch Service (2021-2025)"<sup>103</sup> in cooperation with the Ministry of Education and Science (MOES). As for the nutritional status of children, 7.3% of primary school children (6-11 years old) are classified as stunted, 2.8% as emaciated, and 22% as obese. This indicates a mix of undernourishment and over nourishment among the children. MOES formulated a regulation for implementing light meals in 2006, and as of October 2019, a budgetary provision of 600 MNT (approximately 24 yen)/person/day and one meal per day) has been made for regular schools. Additionally, the Mongolian government enacted the School Meal Law in May 2019, which became effective in September 2020. The School Meal Law stipulates that "in order to provide school meals to all elementary schools, appropriate facilities, equipment, and human resources will be developed and deployed in accordance with standards and technical regulations." Following the enforcement of the law, school meal facilities will be established in all elementary schools in stages, and "school meals" that are more nutritionally balanced than traditional light meals will be provided for all children. After that, school lunches will be extended to junior high schools in 2022 and high schools in 2023. The project aims to prepare for the provision of safe and nutritionally balanced school lunches at elementary and secondary schools nationwide by preparing an environment for providing nutritionally balanced school lunches using available ingredients, developing a school lunch provision system based on regional characteristics, and strengthening administrative functions to provide safe and nutritionally balanced school lunches. Through this project, it is expected that the provision of nutritionally balanced school lunches will increase in elementary and secondary schools throughout the country. One of the outcomes of this project is the development of an environment (including human resource development, nutritional intake standards, menus, etc.) that enables the provision of nutritionally balanced school lunches.

<sup>103</sup> JICA website, Project for Supporting the Implementation of School Lunch Services (information accessed May 26, 2023) <https://www.jica.go.jp/project///mongolia/031/index.html>

## 4.2.2 Fruit supply chain enhancement program

### Fruit Supply Chain Enhancement Program

The annual production of fruits in Mongolia is about 1,800 tons (6,000 tons if wild species are included), while the annual consumption is over 30,000 tons, resulting in a large gap between supply and demand. In addition, with the Billion Tree National Movement, the production and distribution of fruit trees in domestic market is expected to expand. In order to strengthen the supply chain of fruit trees, it is particularly important to 1) strengthen the supply chain by establishing a domestic seed production and supply system, 2) increase production by spreading proper cultivation techniques, and 3) promote export of sea buckthorn.

	Input	Production	Processing	Logistics/Export	Sales /Consumption
Actor	Suppliers (seed, fertilizer, pesticide suppliers, etc.)	Farmers, farmers group, associations	Food Processors	Changes, agricultural associations, distributors and exporters	Retail stores, restaurants, etc.
Major Issues	Production and supply of domestic seed is inadequate. Mixture of varieties on farms and in the wild, requiring appropriate variety management.	Productivity is 2-3 tons/ha, which is less than ideal yield due to irrigation access difficulties and bird damage. Limited production period. Requires proper cultivation techniques and equipment.	Mixed varieties when procuring raw materials, insufficient differentiation and branding. Low factory utilization rate. Pesticide residues in accordance with European standards have been detected, and there is room for improvement in the production and processing stages.	Lack of storage facilities. High transportation costs. Large fluctuations in distribution volume and prices during harvest and off-season. Sea buckthorn is one of the few fruits exported.	Per capita consumption is low. Production is low relative to increasing demand. Little urban/rural consumption gap.
Counter-Measures	<div style="text-align: center;"> <div style="border: 1px solid black; background-color: #004a7c; color: white; padding: 5px; width: fit-content; margin: 0 auto;">2.1 Action Plan on strengthening the supply chain based on the Fruit Tree Seedling Center</div> <div style="border: 1px solid black; background-color: #004a7c; color: white; padding: 5px; width: fit-content; margin: 0 auto; margin-top: 10px;">2.2 Action Plan on disseminating appropriate cultivation techniques</div> <div style="border: 1px solid black; background-color: #004a7c; color: white; padding: 5px; width: fit-content; margin: 0 auto; margin-top: 10px;">2.3 Action Plan on promoting export of sea buckthorn products</div> </div>				

Figure 4.3 Fruit supply chain enhancement program

Source: JICA Project Team

The annual consumption of fruit and berries in Mongolia is approximately 30,000 tons, while the annual production is close to 8,000 tons, highlighting a large gap between supply and demand. In addition, from a demographic perspective, the population is expected to increase over the next few decades, and demand is expected to continue to rise. Although there are some limitations such as climatic conditions, the development direction of the fruit tree supply chain in Mongolia should be aimed to expand the production and distribution of domestic fruit trees and berries. Among fruit trees, sea buckthorn is one of the few fruit trees that are produced in abundance and exported overseas, and further export promotion of this product is being pursued. From the policy perspective, it should be noted that momentum is growing for the Billion Tree National Campaign announced for 2022.

However, current issues in the supply chain include 1) insufficient production and supply of domestic seeds and seedlings at the input material stage, and mixed varieties in farms and the wild; 2) poor productivity and ideal yield at the production stage due to irrigation access difficulties, bird damage, etc.; 3) insufficient differentiation and branding at the processing stage due to mixed varieties at the time of raw material procurement; (4) In the distribution and export stages, there is a lack of storage facilities, high transportation costs, and large price fluctuations, (5) At the consumption stage, there's a discrepancy between low per capita consumption and high demand relative to production.

Based on the fundamental concept and development policy, three A/Ps were formulated as programs to strengthen the fruit tree supply chain: 1) Plan to strengthen the supply chain based on the fruit tree seedling Center, 2) Plan for dissemination of appropriate cultivation techniques, and 3) Plan for sea buckthorn export

promotion. The table herein below shows the relevance of these development plans in terms of how well they address challenges or take advantage of strengths and opportunities, as well as how well they follow development plans.

Table 4.2 Relevance of the fruit supply chain enhancement program and development directions

	Specific issues, strengths, and development directions	Fruit Supply Chain Enhancement Program		
		2.1	2.2	2.3
<b>Issues</b>	Insufficient production and supply of domestic seeds and seedlings	⊙	○	
	Mixed varieties of cultivated and wild species	⊙	○	○
	Productivity is 2-3 tons/ha, less than ideal yield	○	⊙	
	limited production period	○	⊙	
	Insufficient differentiation and branding due to mixed varieties when procuring raw materials	⊙		⊙
	Room for improvement in factory utilization rate			⊙
	Lack of storage facilities, high transportation costs	○		⊙
	Production is low relative to the increasing demand.	○	⊙	
<b>Strengths/ Opportunity</b>	Unique fruit and berry production in a cool natural environment			⊙
	Processing and manufacturing companies and association organizations related to fruits and berries exist.	○	○	⊙
	Mongolian GAP and other food safety systems are in place.		○	○
	There is a domestic certification body and research and educational institutions	⊙	○	
	Increased momentum due to the Billion Tree National Campaign and other related policies	○	○	○
	Growing consumer awareness of food safety and other issues has led to high demand for domestically produced products		○	
<b>Direction of Development</b>	1-1-1 Strengthening Seed Production System for Grains and Oil Crops			
	1-1-2 Promotion of excellent seeds and varieties	⊙	○	
	1-1-3 Capacity development of seed producers	⊙	○	
	1-1-4 Promote the development of water resources and irrigation		○	
	1-1-5 Agricultural mechanization promotion		○	⊙
	1-1-6 Expansion of greenhouse facility development	⊙	○	
	1-1-7 Dissemination of proper cultivation techniques	○	⊙	
	1-1-8 Dissemination of market-oriented agriculture to small-scale farmers		○	
	1-1-9 Promotion of forcing cultivation techniques		⊙	
	1-1-10 Establishment of agricultural product distribution (storage) system by agricultural associations	○		○
	1-1-11 Promote contract farming with food processing companies	○		○
	1-1-12 Dissemination of simple food processing techniques to small-scale farmers		○	○
	1-1-13 Conducting educational activities related to nutrition, food safety, etc.			○
	1-1-14 Cluster Promotion			⊙

○: strongly linked, ⊙: very strongly linked

Source: JICA Project Team

The following is a summary of each A/P.

### Action Plan on Strengthening the Supply Chain Based on the Fruit Tree Seedling Center

The A/P aims to increase domestic production and improve the quality of fruit trees by strengthening the

processes of raising seedlings and shipping of various fruit trees, based on the establishment of fruit tree seedling centers in each major region. Efficient production through the introduction of high-quality varieties and seedlings will have a large ripple effect in terms of controlling production costs and improving the profitability of fruit trees, as well as improving the quality of raw materials, which will lead to higher added value and branding of the final products.

### **Action Plan on Disseminating Appropriate Cultivation Techniques**

The objective of this A/P is for the government to establish an extension system for aptitude cultivation techniques for fruit trees in cooperation with research and development institutions. The MOFALI will create a database of suitable species and varieties for each region and establish an extension implementation system. A cascade approach is envisioned in which training of master trainer and various training programs for farmers will be conducted. Eventually, extension guidelines and manuals for proper fruit tree cultivation techniques will be developed, and a system will be established for use by extension workers and fruit tree farmers.

### **Action Plan on Promoting Export of Sea Buckthorn Products**

The A/P aims to promote the export of sea buckthorn products through the sea buckthorn clusters already established in Mongolia. Specific activities include capacity building of government officials, support for trade policy development and administrative procedures, international market needs assessment, and cluster strengthening. The EU-supported Trade Related Assistance for Mongolia (EU TRAM project) aims to promote exports of Mongolian agro-pastoral products by enhancing their competitiveness. The clusters are characterized by the collaboration of actors from industry, government, and academia (private companies, government agencies, and research and educational institutions of various sizes in the sector), development of new products through joint projects, introduction of new technologies that meet national and international standards, and creation of export opportunities by solving common problems. In addition, in the PA of MONMAP, component analysis and product evaluation of sea buckthorn products (juices, jams, powders, etc.) were carried out in conjunction with EU TRAM targeting export to the Japanese market. In addition, in collaboration with the Mongolian Fruit and Berry Association and the Mongolian University of Life Sciences, we have supported the construction of seedling facilities for excellent varieties at the university field in Bornor, yielding promising results. By incorporating these lessons learned and results into the A/P and focusing on the horizontal transformation of good practices, the plan is to effectively resolve issues and challenges.

#### **(1) Action Plan on Strengthening the Supply Chain Based on the Fruit Tree Seedling Center**

<b>A/P2-1: Action Plan on Strengthening the Supply Chain Based on the Fruit Tree Seedling Center</b>	
Objective	To increase domestic production and improve the quality of fruit trees by strengthening the raising and shipping of various fruit trees through the establishment of a fruit tree seedling center.
Baseline of A/P	The standard value is set at zero, and the number of seedlings produced by the newly established seedling center will be counted at the end line.
Goal of A/P	To supply 1,000,000 quality fruit tree seedlings/year to farmers and enterprises in Mongolia through the seedling center that has been established.
Target area	All over Mongolia

<p>Expected Outcomes</p>	<p>(1) The system and implementation guidelines necessary for the implementation of the A/P and the database of high-quality species and varieties suitable for each region will be prepared, and it will be explained to the persons in charge of the agricultural administration offices in each region and aimag.</p> <p>(2) Aimag and implementing institutions for the A/P will be selected (a total of 6 institutions are expected in each region).</p> <p>(3) Provision of equipment and technical training will be conducted at the 18 selected aimag/implementing institutions.</p> <p>(4) The aimag centers in each region will produce and sell quality fruit tree seedlings.</p> <p>(5) Seedling supply and technical training will be provided to farmers in each aimag.</p>	
<p>Activities</p>	<p>(1) Prepare the systems and implementation guidelines necessary for the implementation of the A/P, and provide explanations concerning the relevant systems and implementation guidelines to the persons in charge of the agricultural administration departments in each region and aimag.</p> <p>The Department of Agricultural Policy Implementation and Coordination, MOFALI, will take the lead in preparing the institutional design and implementation guidelines for this plan, referring to similar efforts that have been made by the Mongolian Fruit and Berry Association, Mongolian research and educational institutions, JICA, the EU, and other organizations. In addition, a database of excellent species and varieties that are suitable for each region will be developed. Existing standards set by the association and other organizations for nurseries will be utilized. Information meetings will be conducted to explain this system and its implementation guidelines to the persons in charge of the agricultural policy departments in each of the aimag regions.</p> <p>(2) Select an aimag/implementing agency to establish a seedling center for the A/P.</p> <p>After consultation with the association, aimag and implementing institutions that are candidates for seedling centers will be selected for each region (a total of 6 locations are expected by region). Institutions in these regions ( such as research and educational institutions, aimag facilities) already possess land, facilities, and human resources capable of establishing seedling centers will be selected. The relevant institutions will discuss with the association (and its affiliated processing companies, etc.) and conclude a business collaboration agreement for the trade of fruit tree seedlings.</p> <p>(3) Provide equipment and technical training at the six (6) selected aimag and implementing institutions.</p> <p>The A/P will provide seedling center development, provision of equipment, and technical training to the six institutions that have concluded business collaboration agreements for the fruit tree seedling trade. The equipment to be provided will include seedlings of high-quality domestic and foreign varieties, materials for windbreaks, greenhouses, wells and water storage facilities, and electricity. The executives of the selected aimag and institutions will visit the seedling centers and other institutions that are already functioning (such as the Mongolian University of Life Sciences in Ulaanbaatar and Bornor) to prepare guidelines for fruit tree cultivation techniques. In addition, they will attend training courses on fruit tree seedling cultivation and production. After implementing these activities, the actual production of fruit trees will be carried out.</p> <p>(4) Produce quality fruit tree seedlings at the centers in different regions and create production and marketing strategies.</p> <p>Production of quality fruit tree seedlings will be started at the concerned centers. The personnel in charge of each seedling center will organize the results and issues related to the seedling and production of fruit trees, and provide feedback and discussions on production and marketing to the Association and MOFALI. Production and marketing strategies will be prepared based on these insights..</p> <p>(5) Provide seed supply and technical training to each aimag producer</p> <p>The seed and seedling center, in collaboration with the association and the University, will provide seedling and technical training to producers in each aimag.</p>	
<p>Input</p>	<p><u>Government</u></p> <ul style="list-style-type: none"> <li>• Seedling center development and equipment procurement expenses</li> <li>• Staff of target aimag implementing institutions (daily allowance and transportation expenses)</li> </ul>	<p><u>Private</u></p> <ul style="list-style-type: none"> <li>• Expenses for inspection and technical training related to the Seedling Center</li> <li>• Administrative expenses for business collaboration agreements</li> </ul>
<p>Project Cost</p>	<p>Total project cost: 9,400 Million MNT (3,578,000 USD)</p>	
<p>Beneficiary Effects/Impacts</p>	<p>The established seed and seedling center will supply 1,000,000 high-quality fruit tree seedlings per year to producers and companies within Mongolia. In addition, producers will be able to sell their high-quality fruit raw materials to processing companies belonging to the fruit association with which</p>	

	they have concluded a business partnership agreement at a unit price (18,700 MNT/kg), which is 10% higher than the unit price before the project was implemented (17,000 MNT/kg). This will generate an annual economic impact of 1,700 Million MNT in terms of employment creation and profit.
Consistency with Policy	<ol style="list-style-type: none"> <li>3. Vision 2050 6.2.4 Maintain forest, afforestation and expansion of forest area.</li> <li>4. Mongolian National Grand Council Resolution No. 36 3.10.2 Establish fruit tree plantations, establish a funding and incentive system, expand research activities, and establish cultivation techniques.</li> </ol>
Remarks	<ul style="list-style-type: none"> <li>• With regard to the equipment to be procured and the content of technical training, reference should be made to the list of equipment organized through the PA conducted jointly by the Fruit Growers Association and MONMAP, etc. The establishment of the seed and seedling center shall refer to the standard prepared by the Fruit Growers Association.</li> <li>• After the conclusion of the Project Cooperation Agreement, the person in charge of the agricultural department of each aimag should conduct periodic monitoring of activities in order to maintain smooth communication between the Mongolian Fruit and Berry Association and the implementing agencies.</li> </ul>

#### Project Implementation Schedule and Budget

Activities		2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
(1)	Implementation guidelines											
(2)	Select Aimag implementing institutions											
(3)	Provision of equipment and technical training											
(4)	Produce high-quality seedling and create strategies											
(5)	Provide seedling supply and technical training											
Total Cost	Mil MNT	200	2,000	2,000	2,000	500	500	500	500	500	700	9,400
	Thousand USD	79	761	761	761	190	190	190	190	190	266	3,578

#### BOX : MONMAP-AVC Sea buckthorn Value Chain Enhancement PA

In terms of sea buckthorn production, yields are not very high due to problems such as bird damage during harvesting and inadequate irrigation facilities. In terms of supply chain, the variety is mixed on the farm and in the wild, and the variety is mixed from the raw material stage, making it difficult to differentiate and brand, which has been a bottleneck in strengthening market competitiveness. In this PA, to establish a system for raising seedlings of superior varieties, (1) improving seedling and cultivation techniques for sea buckthorn (supporting the construction of seedling facilities at the University in Borneo), and (2) strengthening marketing of sea buckthorn products based



on the results of ingredient analysis, in conjunction with the EU TRAM, in order to export sea buckthorn products to the international market. The project worked to strengthen the marketing of sea buckthorn products based on the results of ingredient analysis. As a result, in (1), nursery facilities have been constructed according to the nursery standards set by the Mongolian Fruit and Association, and in addition to nine high-quality varieties of sea buckthorn, seedlings of other high-quality varieties of fruit trees have begun to grow. The Mongolian government and the association have begun to build seedling centers with similar functions in other regions, using this center as a model. In the second phase of the PA, the results of ingredient analysis and evaluation showed that some of the sea buckthorn products, such as juices and jams, contain ingredients superior to those of other domestic products, and unfortunately, pesticide residues were detected in the powder products in the European standard test, indicating that there are problems at the raw material and distribution stages. In the future, products with advantages will be exported by improving their marketing and creating opportunities in international markets, and products with problems will be exported by solving these problems.

**(2) Action Plan on Disseminating Appropriate Cultivation Techniques**

<b>A/P2-2: Action Plan on Disseminating Appropriate Cultivation Techniques</b>			
Objective	Establish a dissemination system for appropriate cultivation techniques for fruit trees in cooperation with research and development institutions.		
Baseline of A/P	The baseline is set at zero, and the number of people with enhanced capacity is counted at the endline.		
Goal of A/P	Systematized aptitude cultivation techniques for fruit trees will be developed; the capacity of 2,500 growers will be strengthened.		
Target area	All over Mongolia. Priority will be given to aimag, the main fruit tree production area.		
Expected Outcomes	<ol style="list-style-type: none"> <li>(1) Fruit trees aptitude cultivation techniques will be identified, developed, and systematized.</li> <li>(2) Expertise and technology of research institutes, government agencies, growers, etc. will be strengthened.</li> <li>(3) More farmers and companies will be able to produce high-quality fruits (especially raw materials).</li> </ol>		
Activities	<ol style="list-style-type: none"> <li>(1) Research institutions and administrative agencies responsible for identifying and developing cultivation technologies will be selected. The Department of Agricultural Policy Implementation and Coordination, MOFALI will take the lead in identifying research institutes and administrative agencies in charge of identifying and developing cultivation technologies region-wise.</li> <li>(2) Cultivation techniques and equipment that need to be enhanced will be identified and implementation guidelines will be developed for the plan. MOFALI, selected research institutes, and government agencies will work together to develop an implementation guideline for this plan, as well as a manual on proper cultivation techniques and a list of excellent varieties, by referring to similar efforts made by the Mongolian Fruit and Berry Association, Mongolian research and educational institutions, JICA, EU, and other organizations. The GAP manuals for fruit production developed by the Mongolian Fruit and Berry Association and other organizations will be utilized in this regard.</li> <li>(3) Select producers and private companies that disseminate appropriate cultivation techniques.</li> <li>(4) Technical training will be provided by research institutes and government agencies. Research institutions and government agencies will collaborate to provide training, provision of equipment and materials to selected producers and private companies related to cultivation techniques that have been identified and developed.</li> </ol>		
Input	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <u>Government</u> <ul style="list-style-type: none"> <li>• Grants for equipment and materials related to fruit tree production</li> <li>• Cost for production of manuals and textbooks</li> <li>• Staff of research institutes and government agencies (allowance and transportation)</li> </ul> </td> <td style="width: 50%; vertical-align: top;"> <u>Private</u> <ul style="list-style-type: none"> <li>• Expenses for agricultural inputs</li> </ul> </td> </tr> </table>	<u>Government</u> <ul style="list-style-type: none"> <li>• Grants for equipment and materials related to fruit tree production</li> <li>• Cost for production of manuals and textbooks</li> <li>• Staff of research institutes and government agencies (allowance and transportation)</li> </ul>	<u>Private</u> <ul style="list-style-type: none"> <li>• Expenses for agricultural inputs</li> </ul>
<u>Government</u> <ul style="list-style-type: none"> <li>• Grants for equipment and materials related to fruit tree production</li> <li>• Cost for production of manuals and textbooks</li> <li>• Staff of research institutes and government agencies (allowance and transportation)</li> </ul>	<u>Private</u> <ul style="list-style-type: none"> <li>• Expenses for agricultural inputs</li> </ul>		
Project Cost	Total project cost: 4,199 million MNT (1,598,000 USD)		
Beneficiary Effects/Impacts	2,500 producers will be strengthened and national unit production will increase by 20%. Fruit production will increase from approximately 2,400 tons to about 3,120 tons.		
Consistency with Policy	<ol style="list-style-type: none"> <li>1. Vision 2050 6.2.4 Maintain forest, afforestation and expansion of forest area.</li> <li>2. Resolution No. 36 of the National Conference of Mongolia 3.1 Billion Trees National Campaign</li> </ol>		
Remarks	<ul style="list-style-type: none"> <li>• The fruits and variety databases created in A/P2-1 will also be utilized for this A/P.</li> <li>• Priority in the selection of growers and private companies will be given to those in major fruit tree production areas.</li> </ul>		

**Project Implementation Schedule and Budget**

Activities	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
(1) Selection of research institutions and government agencies											
(2) Identification of appropriate cultivation techniques and preparation of implementation guidelines											

(3) Selection of producers and private companies											
(4) Technical training by research institutes and government agencies											
Total Cost	Mil MNT	599	700	700	700	700	800				4,199
	Thousand USD	230	266	266	266	266	304				1,598

#### BOX : Billion Trees National Campaign

At the 76th United Nations General Assembly, the President of Mongolia emphasized that afforestation is the best strategy to combat climate change and desertification, and announced Mongolia's commitment to implement a tree planting campaign of 1 billion trees by 2030. Specifically, the plan involves establishing windbreak forests to support tree planting, increasing area under fruit and berry cultivation, and setting up agroforestry business offices (aimag and soum). The Joint Statement<sup>104</sup> on the Establishment of a Special Strategic Partnership for Peace and Prosperity between Japan and Mongolia also highlights that "Both countries will further promote cooperation on climate change and environmental issues, which are global-scale challenges. As one of such measures, in relation to the "Billion Trees National Campaign" advocated by the President of Mongolia, the Japanese government will provide strong support through tree planting projects in Mongolia and awareness-raising activities related to the environment and disaster prevention, including tree planting activities for approximately 20,000 Mongolian youths. Furthermore, the statement said that the Mongolian government will also cooperate to the fullest extent to ensure the smooth and effective implementation of these projects.

### (3) Action Plan on Promoting Export of Sea Buckthorn Products

A/P2-3: Action Plan on Promoting Export of Sea Buckthorn Products			
Objective	Promotion of export on sea buckthorn products		
Baseline of A/P	Total export value of the product is 890 Million MNT/year in 2021		
Goal of A/P	Total export value of the product will be 1,780 Million MNT/year.		
Target area	Nationwide, mainly in Ulaanbaatar.		
Expected Outcomes	<ol style="list-style-type: none"> <li>(1) Target international markets, such as the EU market, are identified, trade policies are developed, and trade negotiations are conducted.</li> <li>(2) Cost reductions and reduced hurdles to exporting to and from target markets.</li> <li>(3) Clusters related to sea buckthorn exports will be strengthened.</li> </ol>		
Activities	<ol style="list-style-type: none"> <li>(1) Target international markets, such as the EU market, are identified, trade policies are developed, and trade negotiations are conducted. <ol style="list-style-type: none"> <li>1) Perform an international market needs assessment to identify target markets.</li> <li>2) Formulate and develop trade policies to meet international market needs.</li> <li>3) Strengthen the capacity of administrative officials to negotiate trade and conduct trade negotiations.</li> </ol> </li> <li>(2) Reduce costs and barriers to export with respect to trade with the target international market. <ol style="list-style-type: none"> <li>1) Share the market needs of the target market with stakeholders</li> <li>2) Provide support for administrative procedures to exporting companies based on trade agreements with the target countries.</li> </ol> </li> <li>(3) Enhancement of clusters related to sea buckthorn exports. <ol style="list-style-type: none"> <li>1) Hold regular consultations between the cluster concerned and the Chamber of Commerce, MOFALI, and other public-private partnerships.</li> <li>2) Organize and conduct trade fairs, exhibitions, and business tours in international markets.</li> <li>3) Disseminate the international market and target needs with stakeholders.</li> <li>4) Evaluate products for export, identify areas for improvement, and obtain international certification as necessary.</li> </ol> </li> </ol>		
Input	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <u>Government</u> <ul style="list-style-type: none"> <li>• Capacity building costs for administrative</li> </ul> </td> <td style="width: 50%; vertical-align: top;"> <u>Private</u> <ul style="list-style-type: none"> <li>• Expenses for cluster meetings and</li> </ul> </td> </tr> </table>	<u>Government</u> <ul style="list-style-type: none"> <li>• Capacity building costs for administrative</li> </ul>	<u>Private</u> <ul style="list-style-type: none"> <li>• Expenses for cluster meetings and</li> </ul>
<u>Government</u> <ul style="list-style-type: none"> <li>• Capacity building costs for administrative</li> </ul>	<u>Private</u> <ul style="list-style-type: none"> <li>• Expenses for cluster meetings and</li> </ul>		

<sup>104</sup> [https://www.mofa.go.jp/mofaj/a\\_o/c\\_m1/mn/page1\\_001428.html](https://www.mofa.go.jp/mofaj/a_o/c_m1/mn/page1_001428.html)

	<ul style="list-style-type: none"> <li>officers</li> <li>Research expenses for international markets</li> <li>Expenses for trade fairs, exhibitions, and tours of international markets</li> </ul>	<ul style="list-style-type: none"> <li>activities</li> <li>Expenses for trade fairs, exhibitions, and tours of international markets</li> <li>Product analysis and evaluation expenses</li> <li>Cost of obtaining certifications</li> </ul>
Project Cost	Total project cost: 3,250 Million MNT (1,237,000 USD)	
Beneficiary Effects/Impacts	The value of exports to international markets will increase by 890 Million MNT/year.	
Consistency with Policy	<ol style="list-style-type: none"> <li>Vision 2050 6.2.4 Maintain forest, afforestation and expansion of forest area.</li> <li>Mongolian National Grand Council Resolution No. 36 3.1 Billion Trees National Movement, 1.1.7 Legislation to increase the number of food and agricultural and livestock products items and volumes for export.</li> </ol>	
Remarks	<ul style="list-style-type: none"> <li>The clusters indicated above refer to the sea buckthorn cluster supported by EU-TRAM.</li> <li>Collaboration with A/P2-1, A/P2-2, A/P8-2, and A/P8-4 will also be considered.</li> </ul>	

#### Project Implementation Schedule and Budget

Activities	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
(1) Target markets, such as the EU market, are identified, trade policies are developed, and trade negotiations are conducted.											
(2) Reduce costs and barriers to export with respect to trade with the target markets.											
(3) Clusters related to sea buckthorn exports will be strengthened.											
Total Cost	Mil MNT	200	350	350	350	350	350	350	350	250	3,250
	Thousand USD	78	133	133	133	133	133	133	133	95	1,237

#### BOX : EU TRAM Project

The EU TRAM project consists of three components: (1) Capacity building of government officials to develop trade policies and negotiate trade agreements that meet the export needs of Mongolian companies; (2) Support to customs and related government officials to reduce export costs and eliminate barriers based on WTO agreements and other agreements for trade facilitation, (3) Strengthening services of MNCCI and related associations based on export promotion and improving dialogue between industry, government, and academia, developing export clusters, and increasing exports by improving competitiveness and obtaining certification for exporting to the EU and international target markets.



Source: EU TRAM Project

### 4.2.3 Oil crop supply chain enhancement program

#### Oil Crop Supply Chain Enhancement Program

The supply chain will be developed to meet the national goal of achieving self-sufficiency in edible oil by 2027. The most promising plant in Mongolia as an oil crop is rapeseed, and its production and processing systems are in place. Although it has been incorporated into the wheat crop rotation system, it is in competition with mustard for export to China, and a shift from mustard to rapeseed is expected. In order to achieve this, it is necessary to provide continuous support to producers, domestic production of rapeseed seeds, improvement of rapeseed trade conditions, and promotion of rapeseed oil sales.

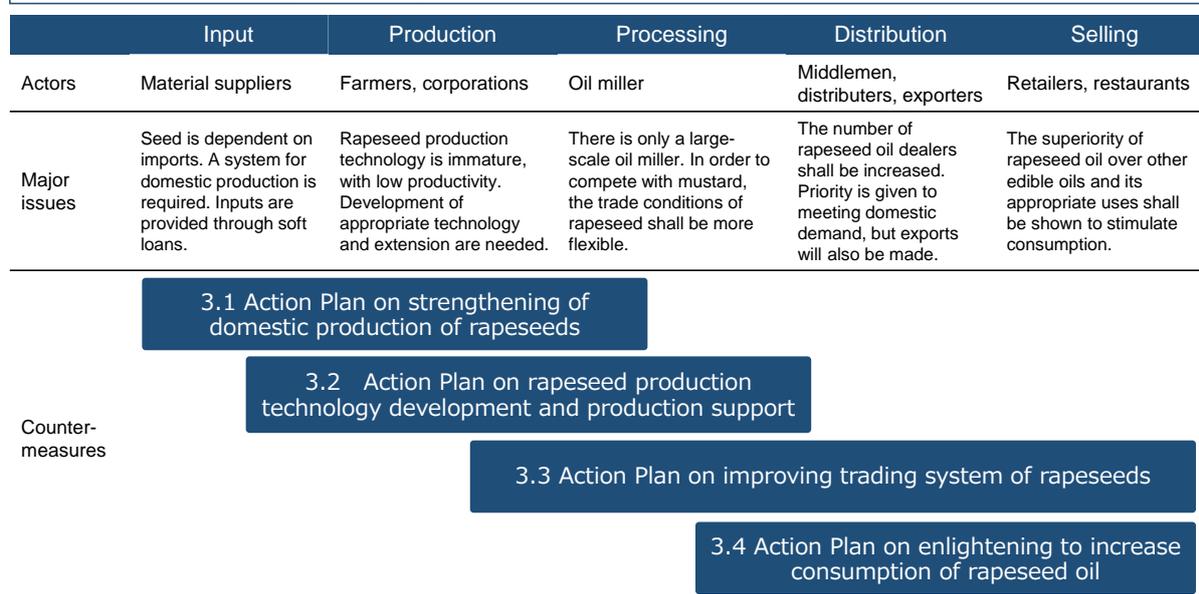


Figure 4.4 Oil crop supply chain enhancement program

Source: JICA Project team

The supply chain needs to be developed to meet the national goal of achieving self-sufficiency in edible oil by 2027. Rapeseed is the most promising oilseed crop in Mongolia with an established processing system. Although the rapeseed production system is also integrated into the wheat crop rotation system, the market shows a preference for exporting mustard seed to China due to more favorable marketing conditions. However, a transition a shift from mustard seed to rapeseed is anticipated. Key development directions to achieve this include; 1) strengthening domestic production of rapeseeds, 2) developing rapeseed production technology and supporting production, 3) improving terms of trade for rapeseed, and 4) educating the public to increase consumption of rapeseed oil. The table herein below shows the degree of relevance of these development plans in terms of addressing challenges or taking out advantage of the strengths and opportunities, and adherence to the development guidelines.

Table 4.3 Relevance of the oil crop supply chain enhancement program and development directions

	Specific issues, strengths, and development directions	Oil Crop Supply Chain Enhancement Program			
		3.1	3.2	3.3	3.4
Issues	Unstable seed procurement and high prices	◎			
	Low productivity of rapeseeds		◎		
	Low price for rapeseeds and rigid terms of trade			◎	
	No competition in the rapeseed trade			○	
Strength, Opportunity	A well-established crop rotation system that includes rapeseeds		○		
	No additional investment in agricultural machinery		○		
	Constant production even without irrigation		○		
	Two varieties of rapeseeds certified	○			

	Specific issues, strengths, and development directions	Oil Crop Supply Chain Enhancement Program			
		3.1	3.2	3.3	3.4
	Oil mill of sufficient size and quality in the county	○		○	○
	Government support for procurement of production equipment and materials		◎		
	Rapeseed researchers in the country for effective technical guidance		◎		
	Existence of agricultural producers cooperative			○	
Direction of Development	1-1-1 Strengthening Seed Production System for Grains and Oil Crops	◎			
	1-1-2 Promotion of excellent seeds and varieties	◎			
	1-1-3 Capacity development of seed producers	◎			
	1-1-4 Promote the development of water resources and irrigation		○		
	1-1-5 Agricultural mechanization promotion		○		
	1-1-6 Expansion of greenhouse facility development				
	1-1-7 Dissemination of proper cultivation techniques		◎		
	1-1-8 Dissemination of market-oriented agriculture to small-scale farmers		○	○	
	1-1-9 Promotion of forcing cultivation techniques				
	1-1-10 Establishment of agricultural product distribution (storage) system by agricultural associations			○	
	1-1-11 Promote contract farming with food processing companies			◎	
	1-1-12 Dissemination of simple food processing techniques to small-scale farmers				
	1-1-13 Conducting educational activities related to nutrition, food safety, etc.				◎
	1-1-14 Cluster Promotion			○	

○: strongly linked, ◎: very strongly linked

Source: JICA Project Team

### Action Plan on Strengthening of Domestic Production of Rapeseeds

It is important to introduce and establish a government management system for domestic production and stable supply of rapeseed. This system, similar to that for wheat, whereby good agricultural corporations are certified as seed producers, and the government procures oilseed rape for seed at a reasonable price, stores it in appropriate warehouses, and supplies it to producers in the following year under reasonable conditions. The Agricultural and Pastoral Support Fund, which manages wheat seeds, does not have a warehouse for rapeseeds, and hence, for the time being it will use the facilities of a private company, but in the long run it should consider upgrading its facilities.

### Action Plan on Rapeseed Production Technology Development and Production Support

Magnolia's average unit yield of rapeseeds is approximately 0.6 ton/ha in recent years, significantly lower than the world average of 2.0 ton/ha. The productivity of rapeseeds shall be improved by improving production techniques. For such purpose, it is desirable to provide demonstration training in appropriate production techniques with the cooperation of the University of Life Sciences, the Association of Agricultural Engineers, the Agricultural Producers Association, and private companies, as well as to continue technical training and awareness-raising activities.

Similar to wheat and other crops, a short-term loan program for procurement of seeds, fuel for agricultural machinery, fertilizers and pesticides, as well as a long-term loan program for procurement of agricultural machinery should be continued. In particular, the government agencies will provide farmers with advice on

the selection and operation of appropriate agricultural machinery. Since neither farmland nor the number of farmers is likely to increase significantly, the government will focus on maintaining soil fertility through appropriate management of farmland. Moreover, converting farmland currently used for mustard seeds cultivation for export to rapeseed cultivation for domestic oil extraction is effective. Therefore, a subsidy system for growers shall be considered.

### Action Plan on Improving Trading System of Rapeseeds

In order to promote stable oilseed rape and edible oil production, it is useful to encourage prior discussion and agreement between producers and oil millers on reliable trading conditions. For such purpose, the government will support and manage the introduction of contract farming between agricultural business associations or individual producers and oilers.

### Action Plan on Enlightening to Increase Consumption of Rapeseed Oil

In order to increase the consumption ratio of domestically produced rapeseed oil in the Mongolian edible oil market, currently dominated by imported sunflower oil and soybean oil, it is necessary to publicize its benefits to consumers. The government will support promotional activities and consider measures, as necessary, to ensure the price advantage of domestically produced rapeseed oil over imported cooking oil.

#### (1) Action Plan on Strengthening of Domestic Production of Rapeseeds

A/P 3-1: Action Plan on Strengthening of Domestic Production of Rapeseeds			
Objective	The objective is to expand the production of rapeseeds as a raw material in order to increase domestic self-sufficiency in edible oil. Increase in planted area of rapeseeds to 50,000 ha, unit yield to 1.0 ton/ha, and rapeseeds sales to domestic oil mills to 50,000 ton. (Baseline values are estimated to be 17,000 ha, 0.6 ton/ha, and 10,000 ton, respectively.)		
Goal of A/P	A system to produce seeds necessary for rapeseed production and to supply them appropriately to growers is established in Mongolia.		
Target area	All over Mongolia (priority in Selenge, Tuv, Khentii, Bulgan, Dornod, Dalkhan-Uul)		
Expected Outcomes	(1) Seeds of registered varieties of rapeseeds are produced at 500 tons annually in Mongolia		
Activities	(1) Certify agricultural producers for seed production of rapeseeds Similar to the case of wheat, approximately 10 good agricultural production firms or individuals will be selected as seed producers. Licenses will be issued to these firms of individuals to support production for seeds. (2) Procurement and management of seeds of rapeseed Verify the quantity and quality of seeds of rapeseed production at the time of harvest. Ensure that this is delivered to a private company warehouse and stored properly. (Certified seed producers will supply the portion not meant for their own farms to the millers.) (3) Appropriate supply of seeds of rapeseed Similar to the case of wheat, the domestically produced seeds in the previous year will be offered to rapeseed producers at a fair price. The provision method will be a combination of 30% up-front payment and 70% post-harvest payment. The government will subsidize the interest portion of the post-harvest payment.		
Input	<table border="0"> <tr> <td style="vertical-align: top;"> <u>Government</u> <ul style="list-style-type: none"> <li>• Certification and management of seed producers (MOFALI)</li> <li>• Assistance and management of installment</li> </ul> </td> <td style="vertical-align: top;"> <u>Private sector</u> <ul style="list-style-type: none"> <li>• Seed production of consistent quality (agricultural producers)</li> <li>• Purchase, quality inspection, storage</li> </ul> </td> </tr> </table>	<u>Government</u> <ul style="list-style-type: none"> <li>• Certification and management of seed producers (MOFALI)</li> <li>• Assistance and management of installment</li> </ul>	<u>Private sector</u> <ul style="list-style-type: none"> <li>• Seed production of consistent quality (agricultural producers)</li> <li>• Purchase, quality inspection, storage</li> </ul>
<u>Government</u> <ul style="list-style-type: none"> <li>• Certification and management of seed producers (MOFALI)</li> <li>• Assistance and management of installment</li> </ul>	<u>Private sector</u> <ul style="list-style-type: none"> <li>• Seed production of consistent quality (agricultural producers)</li> <li>• Purchase, quality inspection, storage</li> </ul>		

	payments for seed supply of rapeseed supply (MOFALI, Agricultural Support Fund)	and sales of seeds (Oil processors and agricultural Producers)
Project Cost	Total cost: 1,549 Million MNT (589,000 USD)	
Beneficiary Effects/Impacts	Domestic production of seeds of rapeseed reaches 500 tons, which is enough for 50,000 ha of farmland.	
Consistency with Policy	<ol style="list-style-type: none"> <li>1. Vision 2050; Objective 2.5 Favorable Living Environment, and Objective 8.2 Sustainable Agriculture</li> <li>2. Resolution No. 36 of the National Assembly of Mongolia government</li> <li>3. Food Revolution: To achieve 100% domestic self-sufficiency by 2027</li> </ol>	
Remarks	<ul style="list-style-type: none"> <li>• Wheat seeds are stored in silos owned by the Agricultural Support Fund in various locations, but since the Fund does not have silos for rapeseed, private silos will be used for the time being. The process of purchase, storage, and distribution will also be carried out with the cooperation of the private sector.</li> </ul>	

#### Project Implementation Schedule and Budget

Activities	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
(1) Certification of seeds											
(2) Seed production											
(3) Procurement and storage of seeds											
(4) Support for seed supply											
Total Cost	Mil MNT	54	77	116	154	193	193	193	193	193	1,549
	Thousand USD	20	29	44	58	73	73	73	73	73	589

- The cost of seed production is not covered by the A/P because it is a normal production activity of farmers.
- Seed inspection and storage costs shall be MNT 0.05 million per ton.
- Seed supply subsidies shall be for 16% interest on 70% of seed cost at MNT 3,000 per kg (MNT 336 per kg of seed).

## (2) Action Plan on Rapeseed Production Technology Development and Production Support

A/P 3-2: Action Plan on Rapeseed Production Technology Development and Production Support	
Objective	<p>The objective is to expand the production of rapeseeds as a raw material in order to increase domestic self-sufficiency in edible oil.</p> <p>Increase in planted area of rapeseeds to 50,000 ha, unit yield to 1.0 ton/ha, and rapeseeds sales to domestic oil mills to 50,000 ton.</p> <p>(Baseline values are estimated to be 17,000 ha, 0.6 ton/ha, and 10,000 ton, respectively.)</p>
Goal of A/P	Unit yield increases from 0.6 ton/ha to 1.0 ton/ha due to improved rapeseed production technology
Target area	All over Mongolia (priority in Selenge, Tuv, Khentii, Bulgan, Dornod, Dalkhan-Uul)
Expected Outcomes	<ol style="list-style-type: none"> <li>(1) Appropriate rapeseed production technology is compiled.</li> <li>(2) Training of rapeseed production technology will be conducted (4 times a year).</li> <li>(3) Government financial support for rapeseeds production is maintained and strengthened.</li> </ol>
Activities	<ol style="list-style-type: none"> <li>(1) Development of appropriate rapeseed production technology <p>Conduct research and development and field verification of appropriate cultivation techniques for rapeseed suited to Mongolia's natural environment and social circumstances. Based on the findings, compile data on appropriate technologies.</p> </li> <li>(2) Dissemination of appropriate rapeseed production technology <p>Establish model rapeseed farms (around 5 locations totaling approximately 50 ha) and hold regular seminars and events on rapeseed production technology (4 times a year) to improve the technology of general producers. Educational materials for technology dissemination will be prepared, and guidance and awareness-raising for producers will be promoted. Guidance will also be provided on maintaining soil fertility through appropriate crop rotation and occasionally, no-tillage systems. In addition, the possibility of introducing oil crops other than oilseed rape will be continuously studied.</p> </li> <li>(3) Maintain and strengthen support for oilseed rape production <p>In addition to developing and expanding a stable supply system for quality oilseed rape seeds, the government will continue to support the purchase of seeds and fuel for agricultural machinery (payment of 50% upfront and 50% after harvest). The government will subsidize the interest</p> </li> </ol>

	<p>portion of such payments. For this system, the government agencies will provide advice and guidance on the appropriate introduction and operation (including joint use) of agricultural machinery.</p> <p>(4) Consideration of subsidy policy for oilseed rape production</p> <p>Furthermore, the government will consider providing subsidies based on oilseed rape production volume, similar to the subsidy system for wheat.</p>	
Input	<p><b>Government</b></p> <ul style="list-style-type: none"> <li>• Provision of test plots and facilities for the development of rapeseed cultivation technology</li> <li>• Dissemination and training of rapeseed production technology</li> <li>• Support for procurement of seeds and fuel for cultivation (subsidized interest rates)</li> <li>• Consider subsidizing oilseed rape and edible oil production (minimum MNT 100,000 per ton).</li> </ul>	<p><b>Private sector</b></p> <ul style="list-style-type: none"> <li>• Provision of farmland as a model farm</li> </ul>
Project Cost	Total cost: 6,946 Million MNT (2,644,000 USD)	
Beneficiary Effects/Impacts	Rapeseed planted area reaches 50,000 ha.	
Consistency with Policy	<ol style="list-style-type: none"> <li>1. Vision 2050; Objective 2.5 Favorable Living Environment, and Objective 8.2 Sustainable Agriculture</li> <li>2. Resolution No. 36 of the National Assembly of Mongolia government</li> <li>3. Food Revolution: To achieve 100% domestic self-sufficiency by 2027</li> </ol>	

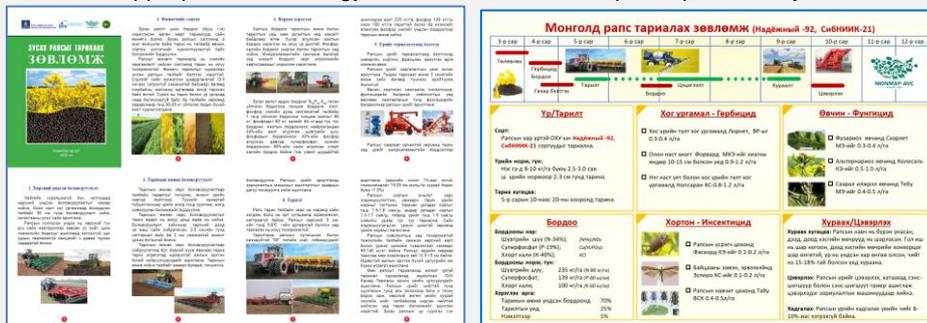
#### Project Implementation Schedule and Budget

Activities		2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
(1) Development of appropriate cultivation techniques												
(2) Disseminate of appropriate cultivation techniques												
(3) Maintain and strengthen support for rapeseed production												
(4) (subsidy for rapeseed production)												
Total Cost	Mil MNT	430	646	790	740	740	720	720	720	720	720	6,946
	Thousand USD	167	245	300	281	281	274	274	274	274	274	2,644

- Test costs are accounted for as rental costs of the test plots (50 ha, assuming MNT 1 mil per ha).
- The cost of the training will be recorded as MNT 5 mil per training.
- Assume oilseed rape production of 25,000 tons in 2025, 40,000 tons in 2026, and 50,000 tons after 2027.
- Continue support measures for procurement of materials and equipment for oilseed rape production. Assumes subsidized materials and equipment at 10% of the value of shipments (MNT 0.18 mil per ton), with the government bearing 16% of the interest on 50% of the cost.
- Consider subsidies to reduce the price difference (MNT 0.2-0.4 mil per ton) between farmers' shipments of rapeseed for domestic oil extraction and mustard seed rape for export. Assume MNT 0.1 mil per ton.

**BOX: Preparation of Rapeseed Cultivation Guide and Training**

Rape seed production is relatively new endeavor in Mongolia, and it is necessary to establish and disseminate appropriate production techniques to growers. The project compiled a cultivation guide for easy reference for farmers based on a rapeseed text book prepared by researchers at the Mongolian University of Life Sciences. This guide is being distributed to growers of rapeseed. With the certification of two rapeseed varieties in Mongolia, it is expected that further verification of appropriate technology will be conducted to improve productivity.



**BOX: Trend of Agricultural Subsidy in Mongolia**

In Mongolia, subsidies for wheat production, a key crop, have been provided since 2007. The subsidy rate ranges from MNT 50,000 to MNT 150,000 per ton of wheat produced annually, and payments have been made to 200 to 900 producers. In 2021, a subsidy of MNT 80,000 per ton was disbursed to 813 producers, totaling MNT 23,122 million (approximately USD 6.6 million). The Agricultural Support Fund is responsible for the management of administrative procedures for this subsidy.

Moreover, starting in 2022, a subsidy program of MNT 100,000 per ton for vegetable production aimed at increasing domestic self-sufficiency was initiated. This new program is based on a farmer database established by MOFALI. Regarding rapeseed, the raw material for cooking oil and focus as the target of the self-sufficiency improvement, a subsidy system for producers is also under consideration by the relevant ministries. However, there is no definite prospect for its implementation currently.

**(3) Action Plan on Improving Trading System of Rapeseeds**

A/P 3-3: Action Plan on Improving Trading System of Rapeseeds	
Objective	The objective is to expand the production of rapeseeds as a raw material in order to increase domestic self-sufficiency in edible oil. Increase in planted area of rapeseeds to 50,000 ha, unit yield to 1.0 ton/ha, and rapeseeds sales to domestic oil mills to 50,000 ton. (Baseline values are estimated to be 17,000 ha, 0.6 ton/ha, and 10,000 ton, respectively.)
Goal of A/P	Rapeseed planted area increased from 17,000 ha to 50,000 ha, by improvement of the terms of trade.
Target area	All over Mongolia (priority in Selenge, Tuv, Khentii, Bulgan, Dornod, Dalkhan-Uul)
Expected Outcomes	(1) Contract farming between rapeseed producers and millers is expanded (at least 50% of rapeseed production) (2) Contract farming expands the scale of rapeseed production
Activities	(1) Adjustment of rapeseed purchase conditions Organize coordination meetings between rapeseed millers and producers to reach a consensus on quality standards and quality-based purchase conditions for rapeseed. Agreement will also be reached regarding the method of shipment and transportation conditions. (2) Promotion of contract farming of rapeseeds The quantity and quality of oilseed rape and other trading conditions are agreed upon in advance, prior to planting, between the traders and the producers in writing. MOFALI acts as a witness and oversees the management of these contracts. (3) Monitoring of contract farming of rapeseeds

	Monitor the execution of contract farming agreements to ensure its proper implementation at the time of seeding, harvest, and trading. If any issues arise, coordination among the involved parties will be facilitated.	
Input	<u>Government</u> • Costs for management and monitoring of rapeseed contract farming	<u>Private sector</u> • Costs for implementation of rapeseed contract farming
Project Cost	Total cost: 200 Million MNT (76,000 USD)	
Beneficiary Effects/Impacts	Improved rapeseed trading conditions will lead to a shift from the competing mustard to rapeseed. This will contribute to achieving a planted area of 50,000 ha.	
Consistency with Policy	<ol style="list-style-type: none"> <li>1. Vision 2050; Objective 2.5 Favorable Living Environment, and Objective 8.2 Sustainable Agriculture</li> <li>2. Resolution No. 36 of the National Assembly of Mongolia government</li> <li>3. Food Revolution: To achieve 100% domestic self-sufficiency by 2027</li> </ol>	
Remarks	<ul style="list-style-type: none"> <li>• The government will be involved in providing guidance and support for private transactions between rapeseed producers and oil mills.</li> <li>• The government will also consider providing subsidies to businesses that ensure contract cultivation.</li> </ul>	

#### Project Implementation Schedule and Budget

Activities		2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
(1) Coordination												
(2) Contract farming												
(3) Monitoring												
Total Cost	Mil MNT	20	20	20	20	20	20	20	20	20	20	200
	Thousand USD	8	8	8	8	8	8	7	7	7	7	76

- MNT 10 mil is allocated for the meeting to coordinate the terms of the deal, split between the government and the private sector.
- MNT 10 mil for administrative and monitoring expenses related to the implementation and management of contract farming, split between the government and private sector.

#### (4) Action Plan on Enlightening to Increase Consumption of Rapeseed Oil

A/P 3-4: Action Plan on Enlightening to Increase Consumption of Rapeseed Oil			
Objective	The objective is to expand the production of rapeseeds as a raw material in order to increase domestic self-sufficiency in edible oil. Increase in planted area of rapeseeds to 50,000 ha, unit yield to 1.0 ton/ha, and rapeseeds sales to domestic oil mills to 50,000 ton. (Baseline values are estimated to be 17,000 ha, 0.6 ton/ha, and 10,000 ton, respectively.)		
Goal of A/P	Share of rapeseed oil among edible oil consumed in Mongolia will increase.		
Target area	All over Mongolia		
Expected Outcomes	<ol style="list-style-type: none"> <li>(1) Comparative advantages of rapeseed oil among edible oils are clarified.</li> <li>(2) Educational activities to increase the consumption of rapeseed oil are conducted.</li> </ol>		
Activities	<ol style="list-style-type: none"> <li>(1) Highlight the comparative advantages of rapeseed oil in publicity materials Compared to imported sunflower oil and other oils, which are popular in Mongolia, domestic rapeseed oil is superior in terms of functionality and safety, and publicity materials for consumers will be prepared in cooperation with the private sector.</li> <li>(2) Conduct educational activities to increase the consumption of rapeseed oil Using publicity materials on rapeseed oil, promote publicity activities at various events for consumers and disseminate information through various media channels.</li> <li>(3) Maintain and strengthen subsidies for rapeseed oil The government will continue to provide preferential treatment, such as value-added tax exemptions, to domestic oil millers. Depending on the situation, consideration will also be given to increasing tariff rates on imported edible oil.</li> </ol>		
Input	<table border="0"> <tr> <td><u>Government</u> • Cost for publicity materials for domestically</td> <td><u>Private sector</u> • Cost for publicity materials for</td> </tr> </table>	<u>Government</u> • Cost for publicity materials for domestically	<u>Private sector</u> • Cost for publicity materials for
<u>Government</u> • Cost for publicity materials for domestically	<u>Private sector</u> • Cost for publicity materials for		

	produced rapeseed oil • Public relations expenses	domestically produced rapeseed oil • Public relations expenses
Project Cost	Total cost: 190 Million MNT	
Beneficiary Effects/Impacts	Consumers' preference for rapeseed oil is increasing, and consequently the consumption ratio of rapeseed oil is expected to increase. Rapeseed oil production in 2022 was approximately 4,000 tons, of which about 800 tons was exported to South Korea. Since Mongolia's edible oil demand is estimated to be less than 30,000 tons, the self-sufficiency ratio is estimated to be just over 10%. From the targeted 50,000 tons of rapeseed, approximately 16,000 tons of oil was extracted, which will increase the self-sufficiency rate to about 50%.	
Consistency with Policy	1. Vision 2050; Objective 2.5 Favorable Living Environment, and Objective 8.2 Sustainable Agriculture 2. Resolution No. 36 of the National Assembly of Mongolia government 3. Food Revolution: To achieve 100% domestic self-sufficiency by 2027	
Remarks	• The government will provide support for public relations activities conducted by the private sector, such as covering part of the cost of creating materials and content and providing a forum for public relations.	

Project Implementation Schedule and Budget

Activities	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
(1) Publicity material											
(2) Public relations activities											
(3) Subsidy for rapeseed oil											
Total Cost	Mil MNT	60	50	40	20	20	0	0	0	0	190
	Thousand USD	24	19	15	7	7	0	0	0	0	72

- Subsidies for rapeseed oil are VAT exempt and are not expensed.

#### 4.2.4 Meat and dairy products supply chain enhancement program

### Meat and Dairy Products Supply Chain Enhancement Program

The number of livestock in Mongolia has been on the increase since the collapse of socialism exceeding 70 million. Although per capita meat consumption of Mongolia is by far the highest in the region, the production-consumption balance is distorted (over-production). Thus, all those abundant livestock resources should be tapped more by diversifying products, adding value to them and expanding its market into the international arenas. The following are the tools to realize these measures.

	Inputs	Production	Processing	Distribution/Export	Marketing/Sales
Actors	Commodity traders (feed, fuel), vets, etc.	Herders, intensive farmers, etc.	Processors (meat, milk, dairies, pet food, etc.)	Middlemen, retailers, exporters, etc.	Large supermarkets, Retailers, distributors, etc.
Main problems	Lack of efficient logistics between herders and traders, esp. in remote areas. Also, in the areas near the larger cities, grassland degradation is obvious. Instability of feedstuff supply in intensive farmers.	While inputs are available at a minimum cost or even no cost, unbalanced production cycles, lack of efficient logistics and inappropriate primary processing steps are obvious. Low productivity in intensive farming.	Undistributed production throughout the year due to a highly skewed seasonality (efficient storage system needed). Only a few processors are technically ready for new production approaches. Awareness-raising about quality and hygiene control is necessary.	Lack of systematic wide range logistics throughout the nation or even inter-Aimag, esp. at the herder level, thereby interrupting the business flow of goods and services	Although consumers' demands are identified at international arenas, for instance, in Japan, due to lack of PR activities such as "Matching" led by the government as yet the both sides have not been connected.
Counter-measures	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; background-color: #004a7c; color: white; padding: 5px; margin: 5px;">4.1 Action Plan on establishing a system for livestock breed improvement</div> <div style="border: 1px solid black; background-color: #004a7c; color: white; padding: 5px; margin: 5px;">4.2 Action Plan on promoting younger livestock fattening business</div> <div style="border: 1px solid black; background-color: #004a7c; color: white; padding: 5px; margin: 5px;">4.3 Action Plan on introducing meat grading system based on market needs</div> <div style="border: 1px solid black; background-color: #004a7c; color: white; padding: 5px; margin: 5px;">4.4 Action Plan on slaughterhouse modernization</div> <div style="border: 1px solid black; background-color: #004a7c; color: white; padding: 5px; margin: 5px;">4.5 Action Plan on promoting pet food business by using by-products from livestock</div> <div style="border: 1px solid black; background-color: #004a7c; color: white; padding: 5px; margin: 5px;">4.6 Action Plan on improving quality raw milk collection system</div> </div>				

Figure 4.5 Meat and dairy supply chain enhancement program

Source: JICA Project Team

The meat and milk supply chain in Mongolia faces a wide range of challenges. While short-term solutions may not be feasible, it is desirable for Mongolia to make plans to solve or reduce as many of these problems as possible, taking into consideration the issues, strengths, and development guidelines mentioned in Chapter 3, especially those related to meat and milk. The herein below table shows the relevancy of these plans in terms of how well they address issues, utilize strengths, and follow development guidelines.

Table 4.4 Relevance of meat and dairy products supply chain enhancement program and development directions

Specific issues, strengths, and development guidelines	Meat and Dairy Products Supply Chain Enhancement Program					
	4.1	4.2	4.3	4.4	4.5	4.6
Low volume of meat distribution through formal channels		○	○	◎		◎
Delayed of development on the diversification of processed products	○	◎	◎		◎	
Inadequate export protocols and lack of awareness		○	○	○	◎	
Low goat meat utilization					◎	
Low rate of shipments to the plant		◎	◎	◎		◎
Lack of cold chain		○	○			◎
Imbalance between summer excess and winter depletion	○	◎	○	○	○	
Quality control (especially milk hygiene)	○	○	◎	◎		◎

Specific issues, strengths, and development guidelines	Meat and Dairy Products Supply Chain Enhancement Program						
	4.1	4.2	4.3	4.4	4.5	4.6	
<b>Strength</b>	Marketability (horse meat, mutton)	⊙	⊙	⊙		⊙	
	Ease of export quarantine (horse meat, sheep intestine, goat intestine)		⊙	⊙	○	⊙	
	Rarity (fat from sheep, yak milk, camel milk, horse milk wine, etc.)		○			⊙	○
<b>Direction of Development</b>	1-2-1 Establishment of livestock breeding system	⊙	○				○
	1-2-2 Training of veterinarians and livestock technicians	○	○	○	⊙		
	1-2-3 Promotion of young fattening (including lamb) through cooperative feeding	⊙	⊙				
	1-2-4 Improvement of equipment and technical training for harvesting and primary processing	○	○				
	1-2-5 Dissemination of appropriate breeding techniques	○	⊙				⊙
	1-2-6 Promotion of slaughterhouse development			⊙	⊙		
	1-2-7 Fostering the pet food industry by utilizing by-products				○	⊙	
	1-2-8 Establishment of a collection and shipping system for raw wool, raw hides, and raw milk based on cattle cooperatives		○				⊙
	1-2-9 Development of industrial human resources (meat processing, textiles, leather)	○	○	○	○	⊙	○
	1-2-10 Promote the use of the trasability system		○	⊙	⊙		
	1-2-11 Introduce meat grading that meets market needs and promote branding	○	○	⊙	⊙		
	1-2-12 Cooperation with tourism development and production of souvenirs		○				○
	1-2-13 Cluster promotion		○		○	⊙	⊙

○: strongly linked, ⊙: very strongly linked

Source: JICA Project Team

The following is a summary of each plan.

**In Action Plan on Establishing a System for Livestock Breed Improvement**, there are many excellent breeds of livestock that are rooted in and adapted to the local environment, and excellent breeds from overseas have also been introduced and used for artificial insemination. On the other hand, in some regions, there is a lack of information, and even when good breeds are introduced, management and technology are insufficient, so the good genetic resources are not being utilized. Even if producers improve breeds and produce superior livestock, they will not be able to fully demonstrate their abilities if they do not have adequate husbandry and management. The goal is to establish a system for breed improvement in each aimag where livestock of superior breeds are reared or frozen semen of superior breeds is used to improve livestock breeds.

**Action Plan on Promoting Younger Livestock Fattening Business** is a plan to promote the introduction of young fattening sheep (including lamb). The number of livestock kept has also exceeded 71 million head, and the increase in the number of sheep has also become a major issue. However, the introduction of a livestock head tax and the occurrence of Dzud and droughts have caused a change in mindset among herders from thinking that livestock are property and to be held for a long time to selling them as a commodity or commercial product. Therefore, by castrating, raising, fattening, and selling spring-born male sheep to slaughterhouses and meat processing plants by winter of the same year, herders will realize that they can reduce labor, feeding costs, head taxes, and the burden (devastation) on grazing land, which will, in turn, encourage them to start raising young fattening sheep and other livestock as well.

**Action Plan on Introducing Meat Grading System Based on Market Needs** states that there are meat

evaluation standards established by the Standard Weights and Measures Agency for cattle, horses, sheep, and goats, and that carcasses are graded into three grades based on veterinary judgment of muscle development, fleshiness and fat content. However, the price of livestock is determined by negotiation based on size and weight, and there is no significant difference in the selling price depending on the part, sex, or age of the animal. In addition, the recent rise in blood cholesterol levels among the public has become a frequent topic of discussion, and consumer preferences are changing as red meat becomes more desirable. Therefore, based on the change in preference, new grading system of meat should be established, and if necessary, differentiated (further value-added) by subdividing the grading into five levels or other levels. The goal is to introduce and disseminate these grading as a basis for value-adding to each company's brand, and to spread the grading system to other livestock.

Regarding **Action Plan on Slaughterhouse Modernization**, there are currently approximately 170 private slaughterhouses and meat processing enterprises in Mongolia nationwide and the number is increasing.<sup>105</sup> However, it is said that only less than 10% of the distributed meat is slaughtered through formal channels, and some of these facilities are in need of repair and maintenance due to aging. Therefore, the aim is to improve (or renovate) slaughterhouses and ensure a stable supply of safe meat produced by hygienic methods at certified slaughterhouses to consumers, and to promote exports.

**Action Plan on Promoting Pet Food Business by Using By-products from Livestock** focuses on the effective utilization of livestock by-products, which are underutilized resources in Mongolia, and goat meat, which is not in high demand among the five Mongolian livestock species, even though its consumption is expected to increase. Currently, the pet food industry is in the midst of a global tailwind, and this factor also enhances the relevance of this plan. The goal is to establish Mongolia as a new supply base for pet food ingredients in the global market.

The last section, **Action Plan on Improving Quality Raw Milk Collection System** has as its main objective increasing milk production through regular channels, the proportion of which is extremely low in Mongolia. The population growth rate in urban Mongolia is extremely high, which means that the necessary food supply is also increasing. However, there is a shortage of hygienic, quality-assured drinking milk in urban areas due to low milk production through formal channels. Through this plan, we aim to ensure that sufficient quantities of safe milk are distributed, especially in urban areas.

**(1) Action Plan on Establishing a System for Livestock Breed Improvement**

<b>A/P4-1: Action Plan on Establishing a System for Livestock Breed Improvement</b>	
Objective	Livestock of superior breeds designated by the government under Cabinet Resolution No. 92 of 2022 will be introduced or reared in each aimag to improve livestock breeds, and a core herd will be secured. Semen of superior breeds will be used for artificial insemination, etc., and a system for breed improvement will be established.
Baseline of A/P	In some regions (aimags), information, financial resources, and systems for introducing superior breeds or purchasing frozen semen for artificial insemination are not in place, and even when superior breeds are introduced, the management and techniques are insufficient and the superior genetic resources are not utilized. Therefore, a survey of the current situation in all aimags will be conducted to identify items necessary for livestock breed improvement in each aimag and to promote the establishment of a system. The project will also support the training of artificial inseminationists.
Goal of A/P	Good breeds of livestock will be introduced or used, and a system for breed improvement will be

<sup>105</sup> Hearing from Mongolian Veterinary Authority

	in place in 50% of the aimags in 5 years and in all aimags in 10 years to promote breed improvement in Mongolia. In addition, there are two artificial inseminators contracted by a national agency in each aimag, and this number will be increased tenfold in 10 years.	
Target area	The program will be introduced to two to three aimags each year, and will be expanded to all areas in Mongolia over a 10-year period. First, a survey will be conducted to determine the current status of breed improvement in each region, and the target areas will be determined.	
Expected Outcomes	Livestock breed improvement will be promoted, productivity of livestock will be improved, and the management of livestock by producers will also be improved. This will also contribute to an increase in exports.	
Activities	<p>(1) Determine the necessary support for each aimag (breeds of livestock to be introduced, equipment and facilities, human resource development, etc.).</p> <p>(i) Project teams will be organized (MOFALI, agricultural departments in each aimag, etc.).</p> <p>(ii) A survey on the current situation (including a needs assessment) regarding breed improvement will be conducted (nomadic and other producers, technicians, meat handlers, associations, etc.).</p> <p>(iii) An expert committee will be formed and convened (MOFALI, GAVS, agricultural authorities in each aimag, unions, other relevant organizations, etc.) to develop the plan and determine the support needed for each aimag.</p> <p>(2) Provide the necessary environment for the improvement of livestock breeds.</p> <p>(i) Development of management facilities or introduction of techniques and equipment for artificial insemination (including embryo transfer, if possible).</p> <p>(ii) Learning of the breeding and management methods of livestock (either breeds or females) of the best breeds by the aimag's technicians.</p> <p>(iii) Establishment of a system for utilization services for breeding and artificial insemination, etc.</p> <p>(3) Training will be provided to veterinarians and livestock technicians in the aimag (training will be provided on methods of feeding and managing quality livestock, but the number of training sessions, topics to be covered, and the level of training items will be determined based on the results of the current survey).</p> <p>(i) Establish a training system.</p> <p>(ii) Conduct periodic training.</p> <p>(iii) Train or select training instructors for producers.</p> <p>(4) Conduct and support participation in training for artificial insemination</p> <p>(i) Expand the scale of the artificial Insemination training conducted by the National Livestock Genetic Resource Center</p> <p>The training participation fee will be subsidized on the condition that the trainees will work as artificial inseminationists in their respective aimags after the training.</p> <p>(5) Producers introduce improved livestock breeds to produce and raise superior livestock.</p> <p>(i) To promote livestock breed improvement by preparing brochures and other materials for publicity to producers.</p> <p>The government's and aimag's technicians will provide training to producers on the husbandry and management methods of the best quality livestock they produce.</p> <p>(ii) Livestock productivity improves and sales prices increase.</p> <p>(iii) Improved livelihoods for producers will enable them to invest more money in feeding and management.</p> <p>(iv) Stable supply of high-quality livestock and their products (meat, milk, hair, hides, etc.) through improved feeding management.</p> <p>(6) Regularly monitor and evaluate the status of livestock breeding (government, technicians, producers).</p> <p>(i) Establish a monitoring system.</p> <p>(ii) Incorporate monitoring into the annual activity plans of the agencies involved.</p> <p>(iii) The monitoring results are accumulated as information shared by related organizations and fed back to the field.</p>	
Input	<p><u>Administration</u></p> <ul style="list-style-type: none"> <li>• Conducting a survey of the current situation</li> <li>• Meeting expenses (experts, information exchange)</li> <li>• Manual preparation fee</li> <li>• Establish training and implementation system for engineers (managers)</li> </ul>	<p><u>Private and Prefectural</u></p> <p>(Technician)</p> <ul style="list-style-type: none"> <li>• Training participation fee (travel expenses)</li> </ul> <p>(Producers)</p> <ul style="list-style-type: none"> <li>• Training participation fee (travel</li> </ul>

	<ul style="list-style-type: none"> <li>• Training for producers</li> <li>• Public relations and dissemination to each aimag and producer (preparation of pamphlets or educational materials on variety improvement, etc.)</li> <li>• Cost of monitoring project effects</li> <li>• Grants for the procurement of equipment and machinery for the management of superior livestock or for artificial insemination</li> </ul>	<ul style="list-style-type: none"> <li>• expenses)</li> <li>• Cost of using superior breeds of livestock and artificial insemination</li> </ul>
Project Cost	Total project cost: 51,906 Million MNT (19,758,000 USD)	
Beneficiary Effects/Impacts	<p>If livestock health improves, stable, high-quality livestock and livestock products (meat, milk, hair/hide, etc.) can be produced and supplied.</p> <p>Livestock productivity will increase and sales prices will rise.</p> <p>The supply of stable and high quality livestock products will be possible and easy, and value-added (branding) will contribute to an increase in exports by guaranteeing safety and quality.</p> <p>The supply of high-quality livestock will provide producers with a stable source of sales, and improved livelihoods will enable them to invest more money in feeding and management, leading to improved quality of meat and livestock products (including milk, hair, leather, etc.), reduced disease, and increased exports.</p> <p>The introduction of artificial insemination will reduce labor and costs if young male animals and those not shared for breeding are sold.</p> <p>If artificial inseminationists are trained, it will lead to job creation.</p> <p>If young male ruminants and those not used for breeding are sold through breeding and other efforts, and if the number of livestock kept in Mongolia as a whole is reduced, this will help reduce greenhouse gas emissions from ruminant ambiguities.</p>	
Consistency with Policy	<ol style="list-style-type: none"> <li>1. Vision 2050 3.1.1 Improve raw materials and product quality of agricultural and pastoral products.</li> <li>2. Vision 2050 6. Green Development Objective 6.1 Appreciate and conserve the value and blessings of nature and maintain ecological balance.</li> <li>3. National Policy on Food and Agriculture (2015-2025) Product development through value chain and competitiveness enhancement (productivity improvement)</li> <li>4. Resolution No. 36 of the Grand National Assembly of Mongolia</li> </ol>	
Remarks	<ul style="list-style-type: none"> <li>• Introduce breeds that are adapted to the Mongolian environment in order to fully demonstrate their genetic potential, and conduct feed and other feed management well.</li> <li>• While breeding is necessary, it is also important to preserve native species adapted to the Mongolian environment as genetic resources.</li> </ul>	

Project Implementation Schedule and Budget

Activities		2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
(1) Determine the necessary support for each aimag.	needs											
	meeting											
(2) Create the necessary environment for livestock breeding												
(3) Provide training to veterinarians and livestock technicians in the aimag												
(4) Conduct and support participation in training programs for artificial insemination												
(5) Producers introduce improved livestock breeds and produce and raise superior livestock.												
(6) Regularly monitor and evaluate the status of livestock breeding.												
Project cost (Total)	Mil MNT	5,371	5,168	5,168	5,168	5,168	5,168	5,168	5,168	5,168	5,191	51,906
	Thousand USD	2,046	1,967	1,967	1,967	1,967	1,967	1,967	1,967	1,967	1,976	19,758

**BOX: Status of Livestock Breeding in Mongolia and Japan**

The National Livestock Genetic Resources Center at MOFALI protects and preserves domestic genetic resources, obtains frozen semen of cattle and sheep from overseas, and performs artificial insemination to improve breeds.

Japan has similar organizations, such as the Livestock Breeding and Improvement Center and the National Livestock Breeding and Improvement Agency, which promote breeding and improvement of livestock, preservation of genetic resources, and improvement of husbandry management techniques. They are in charge of protecting and preserving domestic genetic resources, producing high quality breeding stock and providing frozen semen and fertilized eggs. Additionally, Japan has a law called the Livestock Improvement and Propagation Law, which stipulates measures for the systematic improvement and propagation of livestock, a system for securing breeding stock and registering livestock, and regulations regarding the artificial insemination of livestock and implantation of fertilized eggs in livestock. The purpose is to promote the improvement and propagation of livestock, the promotion of livestock breeding, and the improvement of agricultural management. In Japan, more than 99% of cattle breeding is done through artificial insemination and fertilized egg transfer in order to efficiently promote breed improvement. Artificial insemination may be performed by the farmers themselves, but it is also performed by licensed veterinarians and artificial inseminators belonging to private or cooperative organizations.

According to the Mongolian Meat Association, carcass yield of each livestock species in Mongolia are approximately 47% for sheep, 49-50% for cattle, and 51-52% for horses, while the carcass yield in Japan is 57% for cattle, 57.3-66.8% for horses, and 47-52.2% for sheep.



**Sperm collection from bulls**



**Artificial insemination**

**(2) Action Plan on Promoting Younger Livestock Fattening Business**

<b>A/P4-2: Action Plan on Promoting Younger Livestock Fattening Business</b>	
Objective	Disseminate the technology of young fattening of sheep. Also, start young fattening of other livestock such as cattle.
Baseline of A/P	A breeding method is introduced where male sheep are sold in less than one year.
Goal of A/P	In 2021, Mongolia exported approximately 500 tons of lamb meat, but within five years it will regain 50,000 tons in lamb, and in 10 years 10% of the lambs produced (1.2 million head: 18,000 tons) will be exported.
Target area	The project will start with Tuv aimag, which is adjacent to the capital and has a large number of meat-related companies. The project will then shift its focus to Khuvsgul, Khentii, Dornogobi, and Bayan-Ulgii aimags, which have large numbers of livestock and where pastureland degradation is an issue. After that, the project will be expanded to areas adjacent to agricultural areas where livestock feed such as fodder crops and agricultural by-products are easily available.
Expected Outcomes	Prompt marketing of male baby sheep reduces labor and feeding costs, livestock head taxes, and the burden (devastation) on grazing lands. Meat will be more easily secured by processing plants and other meat-related companies, and result in reducing labor, transportation, and other costs. It will also lead to value-adding of meat, which will increase the selling price of livestock.
Activities	<p>(1) Producer cooperative buys male sheep from herder and introduces a consignment sale business.</p> <p>(i) Project teams will be organized (MOFALI, agricultural departments in each aimag, etc.).</p> <p>(ii) Needs assessment (including current situation survey) will be conducted (herder, herder's cooperatives, companies such as slaughterhouses and processing plants, etc.).</p> <p>(iii) An expert committee will be formed and convened to develop the plan (MOFALI GAVS, agricultural authorities in each aimag, unions, and other relevant organizations such as meat associations).</p> <p>(2) Training will be provided to herders, cooperatives, and other implementers (training on husbandry management methods will be provided, but the number of training sessions, topics to be included, and the level of training items will be determined based on the results of the</p>

	<p>current survey.</p> <p>(i) Select implementers such as herders, cooperatives, groups, etc.</p> <p>(ii) Select training instructors.</p> <p>(iii) Prepare a manual for young fattening and hold training sessions.</p> <p>(iv) Herders develop sales channels to secure stable sales outlets.</p> <p>(v) Stable supply of high-quality lamb meat and other products (milk, hair, hides, etc.) through improved feeding management.</p> <p>(3) Publicize and promote the product to meat-related businesses and consumers.</p> <p>(i) Prepare brochures and other materials for publicity purposes.</p> <p>The lamb meat will become a brand and the sales price of lamb meat will increase.</p> <p>(iii) Improved livelihoods of herders will enable them to invest more money in feeding and management.</p> <p>(4) Regularly monitor and evaluate husbandry management practices and the number of male sheep sold.</p> <p>① Establish a monitoring system.</p> <p>② Incorporate monitoring into the annual activity plans of the agencies involved.</p> <p>③ The monitoring results are accumulated as information shared by related organizations and fed back to the field.</p>	
Input	<p><u>Administration</u></p> <ul style="list-style-type: none"> <li>• Conduct needs assessment</li> <li>• Administrative expenses for planning</li> <li>• Meeting expenses (dissemination to associations, implementation support, development and determination of sales destinations)</li> <li>• Training for implementers and establishment of an implementation system</li> <li>• Publicity and dissemination to producers and consumers (e.g., preparation of pamphlets or educational materials)</li> <li>• Cost of monitoring project effects</li> </ul>	<p><u>Private</u></p> <p>(Meat-related companies)</p> <ul style="list-style-type: none"> <li>• Costs associated with livestock purchases (e.g., transportation costs)</li> <li>• Conference participation expenses (travel expenses)</li> </ul> <p>(Union)</p> <ul style="list-style-type: none"> <li>• Breeding ground facilities</li> <li>• Administrative costs (managers, chemicals, feed, etc.)</li> <li>• Training participation fees (course fees, travel expenses)</li> </ul>
Project Cost	Total project cost: 1,506 Million MNT (573,000 USD)	
Beneficiary Effects/Impacts	<p>This will be widely known to meat-related companies and consumers, and the male kid sheep will be value-added and branded, becoming a brand and increasing the selling price of lamb meat.</p> <p>If herders' feed management improves and livestock health improves as a result of the training, it will be possible and easy to secure and supply stable, high-quality lamb and other products (hides, wool, etc.), which will also reduce labor and transportation costs for companies.</p> <p>Contribute to increased exports by guaranteeing safety and quality.</p> <p>The herders will have a stable market for their livestock, which will lead to a reduction in head taxes on livestock, labor savings in livestock rearing through sales, reduction in feed and other costs, reduction in grassland degradation, and improved livelihoods, which will allow them to invest more money in rearing and management, improve quality of meat and livestock products (including milk, hair, and hides), reduce disease, and increase exports.</p> <p>The carcass weight of 8-10 months old sheep is 15 kg or more (usually about 12 kg, and 15 kg weight are demanded by Iranian traders).</p> <p>The sale and export of young ruminant males would increase, and a reduction in the overall number of livestock in Mongolia will help in reducing greenhouse gas emissions from ruminant ambiguities.</p>	
Consistency with Policy	<ol style="list-style-type: none"> <li>1. Vision 2050 2. Human Development Objective 2.5 Develop a healthy and comfortable environment that meets the needs of life and ensures food security.</li> <li>2. Vision 2050 4.2.6. Ensure national food security and increase exports of meat and meat products through the strengthening of livestock sanitation operations.</li> <li>3. Vision 2050 6.2.8. Implement national programs for soil conservation, prevention of land degradation, and combating desertification.</li> <li>4. Vision 2050 4. Economy Objective 4.2 Develop priority economic sectors and build an export-oriented economy.</li> <li>5. Vision 2050 6. Green Development Objective 6.1 Appreciate and conserve the value and blessings of nature and maintain ecological balance.</li> <li>6. National Policy on Food and Agriculture (2015-2025) Supply of nutritious and safe food for the population at large (stable supply of domestic products, promotion of nutritious and organic</li> </ol>	

	<p>food production)</p> <p>7. Government Action Plan (2020-2024) 1.1.5 Develop export support measures to increase export volume.</p> <p>8. Government Action Plan (2020-2024) 3.3.12 Establish a logistics network for transportation and marketing of agricultural and livestock products and establish an appropriate system of quality control and certification in the supply of agricultural and livestock products.</p> <p>9. Government Action Plan (2020-2024) 4.5.2 Focus on economic diplomacy and continue policies to increase export volume, classify, address problems and difficulties in trade, reduce and simplify based on public-private cooperation.</p>
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### Project Implementation Schedule and Budget

Activities		2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
(1) Producer cooperative buys male sheep from herder and introduces a consignment sale business	needs											
	meeting											
(2) Training will be provided to herders, cooperatives, and other implementers.												
(3) Publicize and promote the product to meat-related businesses and consumers.												
(4) Regularly monitor and evaluate husbandry management practices and the number of male sheep sold.												
Project cost (Total)	Mil MNT	331	128	128	128	128	128	128	128	128	151	1,506
	Thousand USD	124	49	49	49	49	49	49	49	49	57	573

### Box. Case Study of Young Sheep Fattening in Mongolia

#### Case 1: NGO Case Study

The Incubation Center for Wealthy Herder, an NGO, in partnership with MonEcoLamb, has been educating and training herders in raising and shipping male rams. Their model for young fattening is that the herders themselves castrate, raise, and fatten male winter-born baby sheep, which are then slaughtered and sold in the fall of the same year. In cooperation with the Mongolian University of Life Sciences, they developed a specialized feed for weaned baby sheep. When fed this feed, lambs less than one year old grew up to the size to sell for approximately the same price as two-year-old mutton. The said lamb sold was of Binzgang breed, and the carcass weighed 16.5 to 20 kg at 9 to 10 months of age, which is quite a growth considering that a normal lamb weighs only about 12 kg.

The challenge in implementing this young fattening model was to change the mindset of herders. Herders hold livestock for a long time as property and do not sell them easily until they become old stock. However, if the selling price of rams is high, herders will be more willing to sell them. In addition, since lamb is only kept for a short period of time, costs can be reduced and it is highly economical. The goal is to mass produce quality meat for export, given the high market price for lamb meat and the relatively small domestic market. Whenever possible, the NGO purchases these young fattened lambs and serves them in the restaurant called "Mongolian Lamb." The approach of lamb young fattening is intended to be the first step in changing the mindset of the herders, and in the future, other livestock, such as goats, cattle, and horses, will be targeted.

#### Case 2: The Case of the Union

In contrast to the Case 1 above, in Tov aimag, four soum cooperatives have joined together to purchase 6-month-old male baby sheep from herders for 60,000 MNT each, and the cooperatives collectively castrating, raising, and fattening about 600 head the animals by grazing until November, before selling them to slaughterhouses for 85,000 MNT. The



Manuals used for training

cooperative uses a castration method developed by MASH MAKH that does not require an incision and uses electromagnetic waves to target only the vas deferens. This method resulted in better growth and larger body size, and the carcass weight of the 10-month-old calves was 17 to 20 kg, which was not much different from the carcass weight of a normal castrated animal grazed for 12 to 18 months.

Exports were made to Iran, but there is a standard of non-castrated (with testicles) sheep with a carcass weight of 15 kg or more, which seems to be a very good match for MASH MAKH's castration method, as it does not matter if the sheep are not fertile as long as they have testicles. Since the method is profitable and can be applied to other livestock, implementation was halted after two years, due to COVID-19, as a marketing partner could not be secured.

MASH MAKH, the company that developed the castration technology, has been experimentally fattening young cattle as well as sheep, and the 2 year old cattle were as big as 3-year-olds. The meat from lamb and cattle slaughtered at 7 to 8 months and 18 months of age, respectively, was analyzed and found to have no hardening of the muscles and a protein content of 23 to 24%, up from the usual 18%.



**Young rams collected for castration**



**View of castration by new castration machine**



**The fattening of young cattle**

### (3) Action Plan on Introducing Meat Grading System Based on Market Needs

A/P4-3: Action Plan on Introducing Meat Grading System Based on Market Needs	
Objective	Establish new criteria for grading beef, and introduce and disseminate these ratings as a basis for value-adding to each company's brand. It will also be extended to other livestock.
Baseline of A/P	In recent years, consumer preferences for meat within Mongolia have changed, but there are no new standards for grading beef.
Goal of A/P	New beef grading are defined and approved, and introduced to meat-related companies and others.
Target area	All over Mongolia
Expected Outcomes	A new beef grading system will be defined approved, introduced and disseminated to meat-related companies and others as a basis for meat branding. It will also become widely known to consumers, contributing to meat safety and stable supply, leading to value-added meat, higher selling prices for livestock, and better management of nomadic herders. At the same time, meat exports will also increase.
Activities	<ol style="list-style-type: none"> <li>(1) Determine new meat grading standards.                             <ol style="list-style-type: none"> <li>(i) Project teams will be organized (MOFALI, GAVS, meat associations and other related organizations).</li> <li>(ii) Needs assessments will be conducted with VC stakeholders, including producers such as herders, companies such as slaughterhouses and processing plants, retailers, consumers, etc. (also, surveys will be conducted on standards and needs of each country with respect to exports).</li> <li>(iii) An expert committee will be formed and convened to develop the plan and establish rating criteria (MOFALI GAVS, MASM, and other relevant organizations such as meat associations).</li> <li>(iv) New meat grading standards will be defined.</li> </ol> </li> <li>(2) Provide training for veterinarians for grading (the number and content of training sessions will be determined in consideration of the content of the new grading system).                             <ol style="list-style-type: none"> <li>(i) Develop or select training instructors and establish a training system for companies.</li> <li>(ii) Prepare training materials and hold training sessions.</li> <li>(iii) Conduct periodic training sessions and involve evaluators (veterinarians) in order to standardize the evaluation methods for the new grading criteria.</li> <li>(iv4) Train or select instructors for corporate training.</li> </ol> </li> <li>(3) Meat-related companies will introduce new meat grading to add value to meat brands and other</li> </ol>

	<p>products.</p> <p>(i) Introduce a new grading system.</p> <p>(ii) Develop sales channels for meat-related companies to secure stable, high-quality purchases.</p> <p>(iii) Stable supply of high quality meat and processed products and increase exports.</p> <p>(4) Regularly monitor and evaluate the evaluation criteria.</p> <p>① Establish a monitoring system.</p> <p>② Incorporate monitoring into the annual activity plans of the agencies involved.</p> <p>③ The monitoring results are accumulated as information shared by related organizations and fed back to the field.</p> <p>(5) Provide publicity for consumers.</p> <p>(i) Prepare publicity materials.</p>	
Input	<p><u>Administration</u></p> <ul style="list-style-type: none"> <li>• Conduct needs assessment</li> <li>• Administrative expenses for planning</li> <li>• Meeting expenses (determination of grading criteria)</li> <li>• Rating manual preparation costs</li> <li>• Training and implementation system for veterinarians (grading evaluators)</li> <li>• Publicity and dissemination to producers and consumers (e.g., preparation of pamphlets or educational materials on grading)</li> <li>• Cost of monitoring project effects</li> </ul>	<p><u>Private</u></p> <p>(Meat-related companies)</p> <ul style="list-style-type: none"> <li>• Production and supply of meat and processed products by introducing new ratings</li> <li>• Training participation fees (course fees, travel expenses)</li> </ul> <p>(Veterinarian)</p> <ul style="list-style-type: none"> <li>• Training participation fees (course fees, travel expenses)</li> </ul>
Project Cost	Total project cost: 2,076 Million MNT (790,000 USD)	
Beneficiary Effects/Impacts	<p>New meat grading standards will be defined approved and introduced by meat-related companies, leading to widespread of value-addition.</p> <p>The availability and ease of securing and supplying stable and high quality meat and livestock products will lead to the securing of stable sales outlets. This will lead to reduction in labor, transportation, and other costs for companies, and if the safety and quality of meat is ensured, it will contribute to exports.</p> <p>New meat grading standards will be introduced to 50% of meat-related companies in 5 years and 100% in 10 years.</p> <p>The consumers (including importing countries) can purchase both inexpensive and value-added products and have a wider range of choices.</p>	
Consistency with Policy	<ol style="list-style-type: none"> <li>1. Vision 2050 2. Human Development Objective 2.5 Develop a healthy and comfortable environment that meets the needs of life and ensures food security.</li> <li>2. Vision 2050 4.2.6. Ensure national food security and increase exports of meat and meat products through the strengthening of livestock sanitation operations.</li> <li>3. Vision 2050 6.2.8. Implement national programs for soil conservation, prevention of land degradation, and combating desertification.</li> <li>4. Vision 2050 4. Economy Objective 4.2 Develop priority economic sectors and build an export-oriented economy.</li> <li>5. Vision 2050 6. Green Development Objective 6.1 Appreciate and conserve the value and blessings of nature and maintain ecological balance.</li> <li>6. Government Action Plan (2020-2024) 1.1.5 Develop export support measures to increase export volume.</li> <li>7. Government Action Plan (2020-2024) 3.3.12 Establish a logistics network for transportation and marketing of agricultural and livestock products and establish an appropriate system of quality control and certification in the supply of agricultural and livestock products.</li> <li>8. Government Action Plan (2020-2024) 4.5.2 Focus on economic diplomacy and continue policies to increase export volume, classify, address problems and difficulties in trade, reduce and simplify based on public-private cooperation.</li> </ol>	

Project Implementation Schedule and Budget

Activities	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
(1) Determine new meat grading	needs										
	meetin										

criteria.	g											
(2) Provide training to veterinarians (rating evaluators).												
(3) Meat-related companies will introduce new meat ratings to add value to meat brands and other products.												
(4) Regularly monitor and evaluate the evaluation criteria.												
(5) Provide publicity for consumers.												
Project cost (Total)	Mil MNT	388	185	185	185	185	185	185	185	185	208	2,076
	Thousand USD	151	70	70	70	70	70	70	70	70	79	790

**Box. Examples of Meat Grading in Japan**

The purpose of the Japanese meat grading system is to "ensure fair trade by objectively evaluating and judging the quality of carcasses between producers and purchasers as a measure of carcass distribution."

**Case 1: Case Study of Bovine Grading**

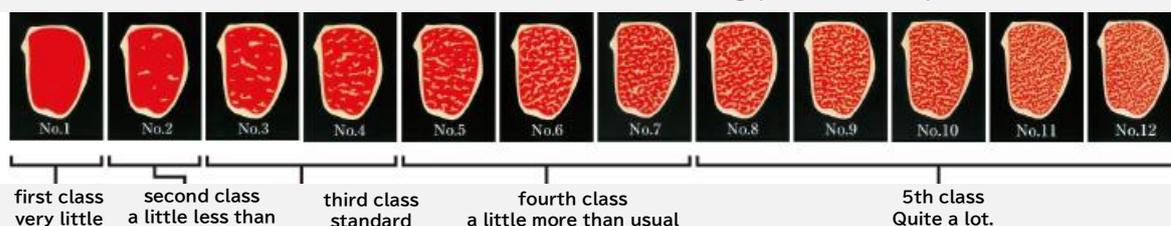
Meat transactions in Japan take place mainly in the form of carcasses at over 200 meat wholesale markets and centers nationwide. The grading (quality evaluation) is conducted for each animal from a neutral standpoint, based on the nationally standardized carcass trading standards.

Since the grading results are important information for livestock farmers regarding the quality of their products, these results can be used to select females and bulls (semen) for breeding and to improve feeding management. Furthermore, livestock breeding and improvement organizations can use the data from nationwide grading results to improve the breeding of superior females and bulls. In this way, grading is very useful for improving the management of livestock by farmers and promoting livestock breeding and improvement (Source: Japan Meat Grading Association).

This standard shall apply to any carcass regardless of breed, age, or sex, except for calves, and the carcass shall be graded between the 6th and 7th ribs for yield and meat quality, and shall be marked consecutively. The yield grade shall be determined for the following four categories: "A" shall be 72 or more of the yield standard, "B" shall be 69 or more but less than 72, and "C" shall be less than 69. The meat quality grade shall be determined for "fatty cross", "meat coloration", "meat firmness and texture" and "fat coloration and quality".

$$\text{Yield standard value} = 67.37 + [0.130 \times \text{longest breast muscle area (cm}^2\text{)}] + [0.667 \times \text{"belly" thickness (cm)}] - [0.025 \times \text{cold and body weight (kg of half round carcass)}] - [0.896 \times \text{subcutaneous fat thickness (cm)}]$$

**Grade Classification of Fat Crossbreeding (Source: MAFF)**



Since the cattle carcass trading standards were established in 1961, they have been revised five times as necessary to take advantage of changes in cattle carcass performance due to breed improvement and the characteristics of Japanese beef. Grading is also used as one of the criteria for Japanese black cattle brands such as Kobe Beef and Matsuzaka Beef, and is one basis for guaranteeing quality.

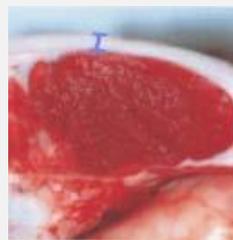
**Case 2: The Case of Japanese Sheep Ratings**

In Japan, the number of crepe lambs kept decreased due to the importation of inexpensive wool from overseas and the use of synthetic fibers. However, as a result of switching the purpose of crepe lamb farming to lamb production, importation of meat breeds, research on lamb production, and promotion of consumption expansion, the consumption of domestic lamb gradually increased. With the distribution of lamb meat in Japan, standards became necessary to produce lamb of the standard and quality demanded by consumers, and in 1997 the Japan Sheep Association established the "Lamb Carcass Standard and Grading Standard".

Lamb carcass standards are established based on two factors: carcass weight and backfat thickness on the loin core.

Carcass weight is divided into five levels, backfat thickness into three levels, and the combination of the two is used to classify 15 standards. Carcass weight is divided into five levels: "SS" for less than 15 kg, "S" for 15 kg to 20 kg, "M" for 20 kg to 25 kg, "L" for 25 kg to 30 kg, and "LL" for 30 kg or more. Backfat thickness is divided into three levels: "1" for less than 4 mm, "2" for 4 mm to 7 mm, and "3" for 7 mm or more (source: Japan Livestock Technology Association).

Thickness of back fat	7mm	SS3	S3	M3	L3	LL3
	4mm	SS2	S2	M2	L2	LL2
		SS1	S1	M1	L1	LL1
		15	20	25	30Kg	
		<b>Carcass weight</b>				



Site of measurement of dorsal oil fat in the 12th-13th intercostal crepe (blue line)

Lamb carcass grading standards classify the carcass and appearance characteristics into "Top," "Medium," "Normal," and "Equal or Better," and the standard and grade are indicated as "M2" together, with "M2 Top" indicated when the grade is higher (Source: Sheep Japan No. 22, April 1997).

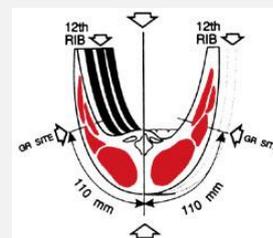
**Lamb Carcass Grading Criteria**

Class	Appearance			Meat Quality	
	Equalization and fleshing out	adherence of fat	finishing touches	meat of medium quality and firmness	Fat coloration and quality
first volume (e.g. book)	Each part is substantial and well balanced, especially the tendons	Moderate adherence of back and abdominal fat	Blood that has been sufficiently released and has not been damaged by disease or other causes, and is free of defects such as contamination or damage due to improper handling.	Fine-textured, well-fleshed, and well-colored meat.	Fat color white, well packed and shiny
during (a certain time when one did or is doing something)	Each part is substantial and well balanced, with no major defects in the thighs	No significant defects in back fat and abdominal fat adherence	Blood loss is normal, with little damage due to disease or other causes, and no major defects such as contamination or damage due to improper handling.	Those with no major defects in both texture and firmness, and those with normal flesh color.	Fat is normal in color and without major defects in the clumps.
row of (e.g. houses)	Lack of balance in various parts and poor thighs	Those with defects in back fat and abdominal fat adherence	Those with some damage due to blood loss or insufficient practice, and those with recognized shortcomings such as contamination due to improper handling.	The texture is very coarse and not well packed, and the flesh color is too light or too dark.	Fatty, discolored, insufficiently shiny, and not sufficiently firm.
also-ran	1. those that do not fall under any of the above grades 2. of particularly poor appearance or flesh quality 3. of particularly poor fat quality			4. with a male odor or other unusual odor 5. many broken parts by sanitary inspection 6. significantly contaminated	
	Grading Grades are determined by the lower of the five grades for external appearance and internal quality. Top: All items of appearance and meat quality are top Medium: No defects in appearance and meat quality.				
				Normal: Top, not inside, not outside etc. Out of class: Not equal to the top, medium, or average	

**Case 3: The Case of Australian Sheep Ratings**

Carcass fat is graded from 1 to 5. Grades are determined by the thickness of the GR site tissue. the GR site is located on the 12th rib 110 mm from the center line, as shown in the figure below. the GR site is "1" if less than 5 mm, "2" if 5 mm to 10 mm, "3" if 10 mm to 15 mm, 15 mm to less than 20 mm is "4" and more than 20 mm is "5".

Carcasses are classified by weight: "8" for less than 8 kg, "10" for 8 kg to 10 kg, "12" for 10 kg to 12 kg, "14" for 12 kg to 14 kg, "16" for 14 kg to 16 kg, "18" for 16 kg to 18 kg, and "20" for 18 kg to 20 kg, 20kg to 22kg is "22", 22kg to 24kg is "24", 24kg to 26kg is "26", and 26kg or more is "28" (Source: Handbook of Australian Meat).



MID LINE OF CARCASS

**(4) Action Plan on Slaughterhouse Modernization**

A/P4-4: Action Plan on Slaughterhouse Modernization	
Objective	Slaughterhouses (including meat processing plants) will be improved (or renovated) to ensure a

	stable supply of safe meat to consumers, slaughtered in a hygienic manner in certified slaughterhouses using hygienic facilities, and to promote exports.
Baseline of A/P	Over the next 10 years (2023), approximately 170 slaughterhouses currently in the country will be inspected and maintained (or renovated) as necessary to promote the processing of meat in government-approved slaughterhouses, which will also contribute to increased exports.
Goal of A/P	170 slaughterhouses (including meat processing plants) nationwide will be inspected and maintained (or renovated) as necessary, and at least 50% of slaughterhouses will comply with GHP (Good Hygiene Practice), GAP (Good Agriculture Practice), HACCP, ISO 22000, ISO 9001, etc. certification.
Target area	Since many slaughterhouses are concentrated in the suburbs of Ulaanbaatar, the project will first target the capital and Tuv aimag, followed by the western region and other areas bordering China and Russia, close to Kazakhstan and other countries, and the slaughterhouses in aimag, which is a hub for meat exports and is not affected by seasonality and operates all year round, and finally the study will eventually cover all slaughterhouses in the country. In areas where there is a high concentration of slaughterhouses, priority will be given to the aging slaughterhouses or have a large number of animals to be processed.
Expected Outcomes	Slaughterhouses are developed (or renovated) to produce safe livestock products such as meat, which are slaughtered in a hygienic manner, taking animal welfare into consideration, complying with GHP, certified by HACCP and ISO, and stored (preserved) in places equipped with appropriate facilities. This is widely known to consumers and contributes to the safety and stable supply of meat and other livestock products. This will lead to better selling prices for livestock and improved husbandry management for herders. In addition, compliance with CODEX will increase exports of meat and other livestock products.
Activities	<ol style="list-style-type: none"> <li>(1) Establish a system for the maintenance (or renovation) of slaughterhouses. <ol style="list-style-type: none"> <li>(i) Project teams will be organized (MOFALI, GAVS, and related organizations such as agricultural departments in each aimag).</li> <li>(ii) Conduct current status surveys (including needs assessments and facility inspections) at slaughterhouses, processing plants, and other facilities.</li> <li>(iii) A steering committee of experts is formed and convened (MOFALI, GAVS, agricultural authorities in each aimag, unions, other relevant organizations, etc.) to develop the plan and determine the support needed for each facility.</li> <li>(iv) Introduce a subsidy system for capital investment and consultation fees to obtain certification.</li> <li>(v) Slaughterhouses will maintain (or renovate) their facilities.</li> </ol> </li> <li>(2) Provide training for slaughterhouse personnel to obtain certification (the number of training sessions, what topics to include, and to what level of training will be determined based on the results of the current survey). <ol style="list-style-type: none"> <li>(i) Train instructors for corporate training programs.</li> <li>(ii) Prepare a manual for certification.</li> <li>(iii) Receive regular training (including inspection methods, risk management, etc.). Revise the manual as necessary.</li> </ol> </li> <li>(3) To improve slaughtering methods and meat processing techniques (including hides) to reduce food loss in the processing process and to understand hygienic management and processing methods of livestock products for export and proper storage methods until distribution (the number of training sessions, what topics to include, and the level of training items to include will be determined based on the results of the current survey) <ol style="list-style-type: none"> <li>(i) Train or select training instructors.</li> <li>(ii) Prepare a manual for meat processing.</li> <li>(iii) Organize training on meat processing for slaughterhouse technicians.</li> <li>(iv) Hold training sessions on a regular basis.</li> <li>(v) Revise the manual as necessary.</li> </ol> </li> <li>(4) The company adheres to GHP and GAP, and is certified for HACCP, ISO, etc. Also comply with CODEX for export. <ol style="list-style-type: none"> <li>(i) Stable supply of safe meat and other products (hair, hides, etc.) slaughtered in a hygienic manner with consideration for animal welfare.</li> <li>(ii) Slaughtering operations are made more efficient.</li> <li>(iii) Securing a stable source of sales for herders</li> </ol> </li> <li>(5) Regular monitoring and evaluation by slaughterhouse management to implement maintenance, etc. <ol style="list-style-type: none"> <li>① Establish a monitoring system.</li> <li>② Incorporate monitoring into the annual activity plans of the agencies involved.</li> </ol> </li> </ol>

	<p>③ Monitoring results are accumulated as information shared by related organizations and fed back to the field.</p> <p>(6) Publicize the certification to markets and consumers in order to raise awareness from consumers to producers and increase demand for hygienically processed, high-quality meat.</p> <p>(1) Prepare brochures and other materials for publicity purposes.</p> <p>(ii) Conduct public relations activities during food-related events and campaigns.</p>	
Input	<p><u>Administration</u></p> <ul style="list-style-type: none"> <li>• Survey of existing conditions (for certification and for renovation)</li> <li>• Administrative expenses for planning</li> <li>• Meeting expenses (dissemination to slaughterhouses, implementation support)</li> <li>• Training for meat-related companies (certification, technology improvement)</li> <li>• Preparation of training materials (certification, technical improvement)</li> <li>• Public relations and dissemination activities for producers and consumers</li> <li>• Public relations expenses (preparation of materials, participation fees, holding fees, etc.)</li> <li>• Cost of monitoring project effects</li> <li>• Subsidy for equipment or renovation of slaughterhouses</li> </ul>	<p><u>Private</u> (Meat-related company)</p> <ul style="list-style-type: none"> <li>• Equipment or renovation of slaughterhouses</li> <li>• HACCP certification and maintenance costs</li> <li>• management cost</li> <li>• Conference (participation and travel expenses)</li> <li>• Training participation fee (travel expenses)</li> </ul>
Project Cost	Total project cost: 52,156 Million MNT (19,853,000 USD)	
Beneficiary Effects/Impacts	<p>The certification will improve the efficiency of slaughtering operations, ensure and supply stable, high-quality meat and livestock products, and improve the trading advantage and credibility of certified slaughterhouses.</p> <p>Contribute to increased exports by guaranteeing safety and quality.</p> <p>Secure a stable source of sales for herders.</p> <p>The percentage of animals slaughtered in slaughterhouses accredited by the government will increase from the current 10%.</p> <p>Require HACCP and other certifications when applying for maintenance plans.</p> <p>Slaughterhouses nationwide will go from 2% to 50% income rate of certification (HACCP, ISO 22000, ISO 9001, etc.) within 10 years.</p> <p>If slaughterhouse utilization rates increase, this could lead to job creation.</p> <p>Some companies use imported meat (mainly chickens and pigs) in their meat processing plants, which will also lead to enhanced quality and sanitation control of imported meat through equipment upgrades.</p>	
Consistency with Policy	<ol style="list-style-type: none"> <li>1. Vision 2050 2. Human Development Objective 2.5 Develop a healthy and comfortable environment that meets the needs of life and ensures food security.</li> <li>2. Vision 2050 4.2.6. Ensure national food security and increase exports of meat and meat products through the strengthening of livestock sanitation work.</li> <li>3. Vision 2050 4.5.7. strengthen SMEs to meet the requirements of global value chains by strengthening their management, improving employee skills, introducing technological advances and innovations, and improving product quality and standards.</li> <li>4. Vision 2050 4. Economy Objective 4.2 Develop priority economic sectors and build an export-oriented economy.</li> <li>5. National Policy on Food and Agriculture (2015-2025) Product development through value chain and competitiveness enhancement (increase productivity, fight against livestock infections, improve raw material processing, develop storage and transport networks)</li> <li>6. Government Action Plan (2020-2024) 1.1.5 Develop export support measures to increase export volume.</li> <li>7. Government Action Plan (2020-2024) 3.3.12 Establish a logistics network for transportation and marketing of agricultural and livestock products and establish an appropriate system of quality control and certification in the supply of agricultural and livestock products.</li> <li>8. Government Action Plan (2020-2024) 4.5.2 Focus on economic diplomacy and continue policies to increase export volume, classify, address problems and difficulties in trade, reduce and simplify based on public-private cooperation.</li> </ol>	

Project Implementation Schedule and Budget

Activities		2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
(1) Establish a system to maintain (or renovate) slaughterhouses.	needs											
	meeting											
	Maintenance Subsidy											
(2) Provide training for slaughterhouse personnel to obtain certification.												
(3) Provide training on slaughtering methods, meat processing techniques, etc.												
(4) Comply with GHP and GAP, and receive certifications such as HACCP and ISO. Also comply with CODEX for export.												
(5) Slaughterhouse management will be monitored and evaluated on a regular basis.												
(6) Publicize the certification to the market and consumers.												
Project cost (Total)	Mil MNT	5,396	5,193	5,193	5,193	5,193	5,193	5,193	5,193	5,193	5,216	52,156
	Thousand USD	2,060	1,976	1,976	1,976	1,976	1,976	1,976	1,976	1,976	1,985	19,853

**Box. Overseas Meat Exports and the Role of Government**

Gunma Meat Wholesale Market, licensed by the Ministry of Agriculture, Forestry and Fisheries in 1971, is a private company that has contributed to the improvement of meat distribution in Japan. Amid growing interest in food safety and security, the company's cattle processing facility was approved by the Ministry of Health and Welfare in 1990 as one of the few facilities in Japan certified to meet U.S. sanitary standards for export to the U.S. Since then, the company has also received certification for export to Canada, Hong Kong, Singapore, Thailand, Macau, Mexico, Vietnam, and the EU. The company has been expanding its meat exports to these countries<sup>106</sup>. However, there were many difficulties involved in developing processing facilities that met the sanitary standards of the countries of exportation, in complying the various procedures required to obtain certification, and in maintaining the conditions of certification even after certification was obtained. In terms of facility development, the livestock dismantling and cutting rooms were renovated based on the HACCP concept, and new monitoring equipment was installed. In terms of hygiene inspections and treatment processes, the contents and methods of inspections were revised and treatment processes were reviewed, and based on these revisions, a hygiene management system was gradually established, including the development of procedure manuals. These facility improvements and changes in processing methods have resulted in a significant improvement in the sanitary conditions of the meat production at the company. These efforts over the years have led to the expansion of exports to the United States and other countries. In addition to such efforts of private companies, exporting meat overseas requires cooperation with Japan's Ministry of Agriculture, Forestry, and Fisheries (MAFF) and Ministry of Health and Welfare (MHW), and it is truly a public-private partnership in nature. For example, Japan's Ministry of Agriculture, Forestry and Fisheries (MAFF) is implementing the following steps based on Japan's "Export Promotion Law"<sup>107</sup>.

<sup>106</sup> Gunma Meat Wholesale Market Co.

<sup>107</sup> Ministry of Agriculture, Forestry and Fisheries, Status of Efforts by the Agricultural, Forestry and Fisheries Products and Foodstuff Export Division

(1) Identification of basic direction regarding export promotion measures: Prepare an action plan for export promotion.

(2) Consultations with importing countries: Led by the Minister of Agriculture, Forestry and Fisheries, with the cooperation of the ministers concerned. In order to promote effective and efficient discussions, priority is given to importing countries and commodities that are likely to contribute to the sustainable development of the agriculture, forestry, fisheries, and food industries.

(iii) Establishment of procedures necessary to facilitate export: Expedite procedures by utilizing registered accreditation organizations. Promote the establishment of a centralized system for the application and issuance of certificates, including relevant ministries, agencies, and provinces.

(iv) Support for businesses: collect information on various regulations of importing countries and provide information in an easy-to-understand manner to agriculture, forestry, fisheries, and food business operators.

(v) Establish a centralized consultation desk at MAFF to respond to various consultations from business operators. MAFF has also established a network to share information on export-related consultations with relevant ministries, agencies, and provinces to promote proactive responses.



**Gunma Meat Wholesale Market**

### (5) Action Plan on Promoting Pet Food Business by Using By-products from Livestock

A/P 4-5: Action Plan on Promoting Pet Food Business by Using By-products from Livestock	
Objective	Although not widely recognized as an industry, there are more than a dozen pet food producers in Mongolia, including small and medium-sized companies. However, only few of them have achieved a high level of processing technology and are commercially successful. Other companies have low processing technology and are unable to develop markets or introduce appropriate technology. On the other hand, the expansion of the global pet food market and the diversification and upgrading of its products are well known in Mongolia, and many major livestock producers have expressed interest in entering this industry. In fact, Mongolia has a great deal of resources that can be used as raw materials for pet food, and its potential as a pet food producer and supplier is extremely high. Therefore, the objective of this project is to improve the weak Mongolian pet food industry from technical, institutional, and organizational aspects, and to establish it as an industry.
Baseline of A/P	Export of Mongolian pet food = 106,310 kg (actual in 2021) Official export volume of Mongolian pet food to Japan = 0 kg (as of 2021)
Goal of A/P	To improve the quality of pet food made from Mongolian livestock products and their by-products, and to increase the production and export of pet food. Mongolian pet food exports = 150,000 kg or more Official export volume of Mongolian pet food to Japan = 1,000 kg
Target area	Concentration of meat processing facilities (Emmert, Naraha, etc.) and dairy processing plants, mainly in the vicinity of UB
Expected Outcomes	<ol style="list-style-type: none"> <li>(1) The Mongolian pet food industry is becoming more established.</li> <li>(2) Improving the quality of Mongolian pet food</li> <li>(3) Diversification of Mongolian pet food continues</li> <li>(4) Recognition of the added value and uniqueness of Mongolian pet food</li> <li>(5) Mongolian pet food production and exports increase</li> <li>(6) More countries export Mongolian pet food</li> <li>(7) In Mongolian pet food production, the consumption of goats, which have been considered to have little food value and a high impact on grassland degradation due to the large number of goats, will be increased.</li> </ol>
Activities	<ol style="list-style-type: none"> <li>(1) Reach consensus on forming an industry cluster to organize pet food manufacturers</li> </ol> <p>The MOFALI Livestock Policy and Implementation Coordination Department will take the lead, with guidance from the Light Industry Policy and Implementation Coordination Department, the Small and Medium Enterprise Agency, and the National Registration Agency, and with logistical support from related industry organizations (Meat Association, Leather Industry Federation, Wool Association, etc.), donors, and NGOs (JICA-MONMAP, IFC, National Pet Food Wholesale Association, etc.) With</p>

	<p>the back-up support of existing pet food manufacturers and other companies interested in pet food production, hold meetings to exchange opinions on the formation of industrial clusters and reach a consensus on the formation of such clusters.</p> <p>(2) Classification of participants for the establishment of a pet food industry cluster</p> <p>The current status of the Mongolian pet food industry will be assessed by categorizing the prospective participants so that they can function organically as an industrial cluster. In the pet food industry, the five most important factors are: species of livestock, parts of livestock, processing type, packaging, and annual supply capacity. Therefore, the first step is to classify the prospective cluster participants according to the above points. In the case of Mongolia, this also includes the possibility of dual employment by general meat producers (see table below).</p> <table border="1"> <thead> <tr> <th>No</th> <th>Companies</th> <th>Species</th> <th>Items</th> <th>Type</th> <th>Package</th> <th>Capacity./y</th> <th>S/NS*</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>A</td> <td>Horse, cattle</td> <td>Bone</td> <td>Dried</td> <td>Nylon</td> <td>3 t</td> <td>S</td> </tr> <tr> <td>2</td> <td>B</td> <td>Sheep, goats</td> <td>Meat</td> <td>Wet</td> <td>Retorted</td> <td>10 t</td> <td>S</td> </tr> <tr> <td>3</td> <td>C</td> <td>Camel, Yak</td> <td>Milk</td> <td>Dried</td> <td>Tetrapak</td> <td>1 t</td> <td>NS</td> </tr> </tbody> </table> <p>*S=specialized. NS=Non-specialized</p> <p>(3) Prepare a draft business plan as a new industry support project by the government</p> <p>The MOFALI Livestock Policy Implementation and Coordination Department will develop a project proposal based on the opinions of the participating companies, but as a new industry, it will first develop a concrete proposal in a form that includes the following points.</p> <p>i. <u>Gather information on the pet food industry (especially outside of Mongolia) and develop a draft strategy</u>: Currently, the main export destinations for Mongolian pet food are Russia, China, and Korea, but the quantity, species, and variety are very limited (mostly horse meat) and the types are also limited. On the other hand, there is a dearth of information on the availability of grass-fed livestock, yak milk, and other products that could take advantage of Mongolia's strengths. Therefore, this information will be collected and analyzed via the Internet, embassies, equivalent associations in each country, and, if possible, on-site travel. Based on the results of this analysis, a draft strategy will be developed. In doing so, it is desirable for the government to establish a system to encourage and compensate for the commercialization of livestock species, especially goats and sheep, which have the highest growth rate in Mongolia today and have a strong impact on grassland degradation.</p> <p>ii. <u>Promotion and dissemination activities for the development of the pet food industry</u>: The government should promote the Mongolian pet food industry through embassies and donors with a strategic plan based on the information gathered, and encourage the participation in business fairs in each country to create matching opportunities. The government will also consider sending another MOFALI mission to countries that have responded positively.</p> <p>iii. <u>Mutual training sessions among members</u>: As mentioned above, there are several types of companies, and opportunities should be provided for members to supplement each other's skills. In the case of a completely new business, it is necessary to acquire new equipment as well as the skills to properly use the equipment. Therefore, MOFALI officers will support this by inviting lecturers from overseas as necessary.</p> <p>iv. <u>Reinforcement of quarantine measures</u>: In some countries, imports from Mongolia are currently not possible due to strict quarantine conditions. In such cases, the existence of such measures should be confirmed, and if such measures exist and are expected to be sufficiently profitable, they should be promoted in cooperation with the Mongolian government and related organizations.</p> <p>(4) Regular monitoring and evaluation by MOFALI, participating companies and relevant institutions</p> <p>The aforementioned organization will take the lead in monitoring and evaluating the implementation of the plan on a regular basis, accumulate the results, and share them with relevant parties for the development of new products and entry into new markets.</p>		No	Companies	Species	Items	Type	Package	Capacity./y	S/NS*	1	A	Horse, cattle	Bone	Dried	Nylon	3 t	S	2	B	Sheep, goats	Meat	Wet	Retorted	10 t	S	3	C	Camel, Yak	Milk	Dried	Tetrapak	1 t	NS
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Input	<p><u>Administration</u></p> <ul style="list-style-type: none"> <li>• Tax exemption for purchase of materials and equipment</li> <li>• Grants for industry association organizing activities</li> <li>• Invitation of expert technicians from overseas and Japan to provide guidance on processing technology (honorarium, daily allowance, transportation expenses)</li> <li>• Invitation of investigators from abroad* (daily</li> </ul>	<p><u>Private</u></p> <ul style="list-style-type: none"> <li>• Equipment and materials</li> <li>• Inspection and technical training expenses</li> <li>• Invitation of experts from overseas and Japan to provide guidance on processing technology (honorarium, daily allowance, transportation expenses)</li> <li>• Invitation of investigators from abroad*</li> </ul>																																

	allowance and transportation expenses) *If an on-site inspection by a quarantine inspector or other official is required in advance in the country to which the goods are to be exported, etc.	(daily allowance and transportation expenses) *If an on-site inspection by a quarantine inspector or other official is required in advance in the country to which the goods are to be exported, etc.
Project Cost	Total project cost: 2.6 Million MNT (989,000 USD)	
Beneficiary Effects/Impacts	In recent years, the production of Mongolian pet food has been increasing, albeit in small quantities, and almost all of it is exported. The specific figures are 69 tons/year in 2020 and 106 tons/year in 2021. In 2022, the production volume reached 85 tons as of October, and is expected to exceed last year's level as slaughtering is expected to begin in earnest in the fall. Coupled with these trends, it is expected that production (≒ export) will reach over 200 tons/year after 2023 as a result of the implementation of this plan.	
Consistency with Policy	<ol style="list-style-type: none"> <li>1. Vision 2050 3.1.1 Improve raw materials and product quality of agricultural and pastoral products.</li> <li>2. Exhibit 4.2.1 of the Decision of the Grand National Council of Mongolia No. 36 dated 2022 "To develop target markets for livestock and raw materials of animal origin, products and commodities, to establish appropriate networks for preparation and supply, initial processing and marketing, to establish and restructure model cooperatives and to fully support organizing campaigns"</li> <li>3. Annex 5.1.1-2 of the Decision of the Grand National Council of Mongolia No. 36 dated 2022 "Strengthening the system of providing subsidies for products and goods that meet quality, health and safety standards, which are produced by domestic processing of raw materials supplied by the agro-pastoral industry and sold in the domestic market."</li> <li>4. Highly consistent with the government's promotion of industrial clusters</li> </ol>	
Remarks	<ul style="list-style-type: none"> <li>• Since individual companies are currently coordinating their own lines of business, it is necessary to consider how to handle not only the advantages of consensus related to joint work, but also the sharing of advantages that have been enjoyed by the company alone.</li> <li>• Consideration must be given to avoid excessive competition among competitors</li> </ul>	

Project Implementation Schedule and Budget

Activities	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
(1) Develop a consensus for the establishment of an industry association to organize pet food manufacturers											
(2) Drafting a proposal and holding a briefing session for the establishment of the Mongolian Pet Food Cluster (tentative name)											
(3) Gather information on trends in the overseas pet food industry by country, analyze it, and draft strategies.											
(4) To train appropriate processing techniques, introduce necessary equipment and materials, and develop a quarantine protocol response plan											
(5) Promote Mongolian pet food through a wide variety of channels											
Project cost (Total)	Mil MNT	100	800	800	800	50	50				2,600
	Thousand USD	39	304	304	304	19	19				989

**BOX : MONMAP PA to Increase Sheep and Goat Meat Consumption and Promote the Use of Livestock By-products**

Various trials were conducted in the PA, but the most successful were the expansion of goat meat consumption and the effective use of livestock by-products. Initially, targeting general consumers living in Ulaanbaatar, MOFALI and private companies tied up to promote "new menus using goat meat" and "goat meat jerky". Tasting sessions were held with 230 Mongolian participants, including popular Japanese flavors such as curry and teriyaki, and more than 90% of the participants said, "Delicious!" However, these product has not yet been commercialized. On the other hand, while ruminant products, including sheep and goats, cannot be exported to Japan due to foot-and-mouth disease and other contagious diseases, however, hoof and horn products can be exported to Japan if treated as specified, thus overcoming the high hurdles of the Japanese quarantine system. Despite this, Japanese pet food companies confirmed that sheep and goat hooves were too small and fragile to be exported to Japan, and the horns posed risk of chipping when chewed by dogs. On the other hand, it is good news that goat ears, horns, and skins have found a growing market Russia. Furthermore, while ruminant products were difficult to obtain, tendon sheaths and other equine by-products are subject to low quarantine in Japan, so we contacted a Japanese pet food organization and brought samples to a domestic pet food exhibition. As a result, the response was extremely positive, and business negotiations are currently underway. It is important to continue trials, making minor incremental adjustments to find successful strategies for marketing.



**(6) Action Plan on Improving Quality Raw Milk Collection System**

A/P 4-6: Action Plan on Improving Quality Raw Milk Collection System	
Objective	Traditionally considered "white food" milk and dairy products are a typical and indispensable in Mongolia. However, the amount of milk and dairy products sold through regular channels is still very small, and it is subject to seasonal fluctuations. Particularly in winter, the supply is depleted, and the dependence on imported products such as powdered milk, especially in urban areas, is high. In addition, in sales that do not go through regular channels, even when the shipping volume is large and the transportation time is long, the milk is handled in the same way as for private consumption, and thus, raising many sanitary issues. Given this situation, it is an urgent task to integrate a wider range of producers into the regular route beyond those in peri-urban areas in order to supply sufficient quantities of hygienic milk to the ever-increasing consumers in large cities, especially in the UB. Therefore, the objective of this plan is to bring milk producers onto the regular route and increase the volume of regular milk collection through a joint effort between the company and the government, while also implementing low-cost improvement measures as much as possible.
Baseline of A/P	Regular milk collection in the target area in the year of commencement: 40,000 tons (actual in 2022) Number of producer groups/association-like organizations for joint shipment in the target area in the year of commencement
Goal of A/P	Increase the volume of milk collected and sold through regular channels for milk produced in Mongolia. Regular milk collection in the target area in the starting year: 1.5 times higher than 40,000 tons Number of producer groups/association organizations for communal shipping in the target area in the year of inception: 50% increase
Target area	The highest priority will be given to areas with a large number of producers scattered in and around urban areas such as UB (mainly in the Tuv aimag), while Darkhan-Uul, Orkhon, and Selenge aimags will be considered as appropriate (it is desirable that a milk collection route has already been established relatively nearby by a dairy company).
Expected Outcomes	(1) More producers shipping to regular milk collection plants (2) Increased production through regular milk collection plants (3) Milk quality improves (4) Stabilization of producers' income (5) Possible export of dairy products in the future (especially rare and valuable milk such as yak and camel milk)
Activities	(1) The MOFALI Livestock Policy Coordination Department will take the lead in preparing a plan for

	<p>the formation of producer groups or associations for the purpose of shipping milk to the milk plants, in cooperation with the aimag and soum agricultural administration officials and private dairy companies. The plan will consider following points ;</p> <ol style="list-style-type: none"> <li>i. Try to select soum that can select as many producers as possible without deviating too much from the current milk collection route.</li> <li>ii. Even if the conditions in (i) are not met, if there are many producers who wish to participate and a significant amount of milk is expected to be secured, new milk collection routes and collection points will be considered.</li> <li>iii. If the distance increases, consider installing bulk coolers or new milk lorries.</li> <li>iv. In addition, we will also consider the possibility of treating this plan as a component of the milk doubling plan (≈white revolution) that the government is planning to promote.</li> </ol> <p>(2) Conduct a briefing for potential producers.</p> <p>At such briefing, MOFALI will explain in detail the "rules of engagement" to the producers when they become members. MOFALI will provide a general explanation, and the officer in charge of aimag and soum and the candidate private companies will be asked to attend the meeting to explain the details of the plan in detail. In addition, since the day-to-day management of the "Shipping Group" will be carried out by the members, it is desirable to invite the head of a group from another region who already has experience in the operation of the shipping group and ask them to share experience and explanation.</p> <p>(3) New technology acquisition training and dissemination promotion for shipment to regular channels</p> <p>Training in milking techniques and milk hygiene will be conducted in cooperation with companies, organizations, and technicians from the Veterinary Service Directorate. The subjects to be covered in the training will include subjects that are not yet in the knowledge of many producers, and hence, existing producers will be included. Candidate subjects include: washing and drying of hands and containers during milking, storage and temperature control, drug residues in milk, bovine stress and milk hygiene, and the effectiveness of simple equipment (aluminum milk cans, filters, etc.) on the quality of raw milk and preserving milk quality.</p> <p>(4) Initiate milk collection activities</p> <p>In Mongolia, milk production is seasonal, and although milk production declines during the winter season, semi-intensive farmers can continue milking their cows from early spring (February to March) to just before mid-winter (November). However, milk collection routes by dairy companies are often closed during the winter, and thus, the milk cannot be sold. Therefore, the government should consider correcting the winter shipment system to address this. In addition, the government should address the issue of overproduction of milk in summer, which occasionally results in lower milk prices for producers, and encourage dairy companies to convert surplus milk purchased at a lower price into milk powder. This will reduce the high dependence of large cities on imported milk powder during the summer months.</p> <p>(5) Regular monitoring and evaluation by MOFALI, soum and dairy companies.</p> <p>The aforementioned organizations will take the lead in monitoring and evaluating the implementation of the plan on a regular basis, and the results will be accumulated and shared with relevant parties to be used in the selection of new candidate sites.</p>	
Input	<p><u>Administration</u></p> <ul style="list-style-type: none"> <li>• Tax exemption for new equipment purchases (bulk coolers, milk collection lorries, etc.)</li> <li>• Dispatch of lecturers to technical workshops</li> <li>• Compensation and loan incentives: Compensation for milk production to cooperative producers, compensation for transportation costs for winter shipment to dairy collectors to whom cooperative producers ship, and preferential loan facilities for both.</li> </ul>	<p><u>Private</u></p> <ul style="list-style-type: none"> <li>• Materials and equipment (bulk coolers for new milk collection points, milk collection lorries.</li> <li>• Aluminum milk cans for loan (or share)</li> <li>• Selection of producers (50-100 producers/group) that meet the requirements for the establishment of a producer group for joint shipment.</li> </ul>
Project Cost	Total project cost: 77.4 Million MNT (29,463,000 USD)	
Beneficiary Effects/Impacts	<p>Mongolia's domestic milk production has been on an upward trend for the past 10 years. This figure is based on regular milk production, which is estimated by a major dairy company to be 8 to 9 times the amount of milk actually produced. Based on this, it is expected that the regular milk collection volume will double after 2023 as a result of the implementation of this plan.</p> <p>In addition, the implementation of this plan will likely reduce the disparity between seasons.</p>	
Consistency with	1. Vision 2050 3.1.1 Improve raw materials and product quality of agricultural and pastoral	

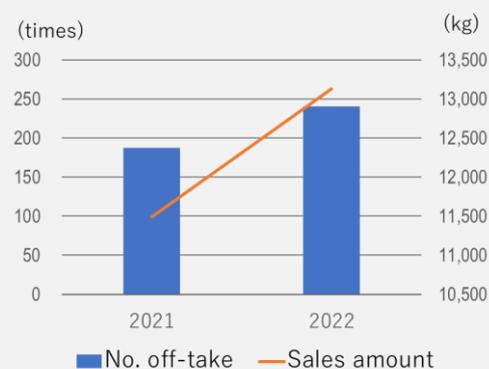
Policy	<p>products.</p> <p>2. Exhibit 4.2.1 of the Decision of the Grand National Council of Mongolia No. 36 dated 2022 "To develop target markets for livestock and raw materials of animal origin, products and commodities, to establish appropriate networks for preparation and supply, initial processing and marketing, to establish and restructure model cooperatives and to fully support organizing campaigns"</p> <p>3. Annex 5.1.1-2 of the Decision of the Grand National Council of Mongolia No. 36 dated 2022 "Strengthening the system of providing subsidies for products and goods that meet quality, health and safety standards, which are produced by domestic processing of raw materials supplied by the agro-pastoral industry and sold in the domestic market."</p> <p>4. It is highly consistent with the plan to double raw milk (≈white revolution) that MOFALI plans to embark on.</p> <p>5. It is also highly relevant to the "food revolution" that the President is advocating.</p>
Remarks	<ul style="list-style-type: none"> <li>Most producers continue to operate on semi-nomadic pastures. In such cases, the first priority is to secure maintenance feed for the livestock prior to production activities such as milking and fattening. Therefore, due to bad weather or other reasons, they may be forced to take a different route to pasture than usual in search of grass. In such cases, there may be a significant deviation from the milk collection route set by the dairy company, and it is necessary to discuss how to deal with this situation.</li> </ul>

Project Implementation Schedule and Budget

Activities	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
(1) A plan for the formation of producer groups for the purpose of shipping to milk plants is prepared by private dairy companies in collaboration with public authorities (government, soum).											
(2) Conduct a briefing for candidate producers.											
(3) Start milk collection activities after organizing (including subsidizing the shipment of milk to modern plants (500 MNT/L) and purchasing necessary equipment and materials)											
(4) Mongolian pet food will also be considered from the perspective of dairy product diversification.											
Project cost (Total)	Mil MNT	100	8,600	8,600	8,600	8,600	8,600	8,600	8,600	8,500	77,400
	Thousand USD	44	3,273	3,273	3,273	3,273	3,273	3,273	3,273	3,235	29,463

**BOX: MONMAP PA to Increase Milk Production by Strengthening the Collection System**

This PA was implemented under the guidance of the MOFALI officer in charge, in collaboration with a major private dairy company. The main objective of the project was to increase milk production through formal channels. As we have already mentioned that more than half of Mongolia's population is concentrated in Ulaanbaatar, the country's largest city, and ensuring the supply safe food is the biggest challenge in the Mongolian food supply chain. The supply of raw milk, which cannot be stored for long period of time, is particularly difficult, and tends to be concentrated around urban areas. The project teamed up with a company aiming to increase milk collection, and the company promoted the formation of a group of herders for joint shipment, and the project provided simple equipment for milking and shipment to the herders who joined the group. In this study, 20 herders who had joined the shipment group in 2021 were targeted and provided with inexpensive and simple equipment such as aluminum milk cans, dust filters, and packing ropes for shipment. The survey began in early 2022, and data was collected monthly throughout the year and compared results to those from 2021. The results are shown in the accompanying graph. Although three members left the program, both the number of shipments and the volume of shipments increased on average by 33%



Average number of shipments (times) and average volume (kg) per year (n=17)

and 14%, respectively. The person in charge of the dairy company said, "It is a natural that the quantity of milk collected increases when a new producer group is formed, however, the increase in volume this time due to the provision of simplified tools also attributed to the use of aluminum milk cans and dust filters, which ensured the quality of the raw milk and reduced amount of waste. Therefore, the most effective approach seems to be the continued promotion of cooperative shipping groups at the higher level, as in this project, combined with improvements milking techniques and tools at the field level.



Provision of simple equipment by the project to herders who are organizing for joint shipment: milk cans (left), filters, etc. (right)

#### 4.2.5 Animal hair and hide supply chain enhancement program

##### Animal Hair and Hide Supply Chain Enhancement Program

In Mongolia, animal hair (wool and cashmere) and raw hides are among the most abundant resources. The key points of development are 1) to form a system to deliver raw hair and raw hides to processors in good quality, 2) to promote the renewal of equipment in processing companies and the production of high-quality semi-processed and finished products, and 3) to develop industrial human resources who can reflect environmental, animal welfare, and other perspectives in their products.

	Input	Production	Distribution	Processing	Sales, Consumption
Actors	Feed distributors, veterinarians, veterinary drug suppliers, etc.	Herders, Herders' cooperatives, livestock-related enterprises, etc.	Traders, Herders' cooperatives, livestock-related enterprises, etc.	Animal hair and leather processors	Exporters, clothing retailers, etc.
Major Issues	<ul style="list-style-type: none"> <li>Lack of networking between herders and traders in remote areas.</li> <li>Insufficient breeding of good wool and cashmere varieties.</li> </ul>	<ul style="list-style-type: none"> <li>Low quality wool and cashmere obtained from old livestock.</li> <li>Very high rate of raw hide loss due to wounds caused by physical contact, perforation by external parasites, etc., resulting in low commercial value.</li> </ul>	<ul style="list-style-type: none"> <li>Raw animal hair is being distributed without primary processing (e.g., sorting according to quality).</li> <li>Poor storage conditions of raw hides are deteriorating the value of the product.</li> </ul>	<ul style="list-style-type: none"> <li>Difficulty in procuring quality raw hair and raw hides.</li> <li>Aging processing equipment.</li> <li>Delays in introducing environmentally friendly product processing technology.</li> </ul>	<ul style="list-style-type: none"> <li>Lack of industry personnel familiar with trends (environmental friendliness and animal welfare).</li> </ul>
Counter-measures	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; background-color: #003366; color: white; width: 20%;">5.1 Action Plan on establishing a system for livestock breed improvement</div> <div style="border: 1px solid black; padding: 5px; background-color: #003366; color: white; width: 20%;">5.2 Action Plan on strengthening the supply chain of raw wool, cashmere and raw hides based on the herders' cooperatives</div> <div style="border: 1px solid black; padding: 5px; background-color: #003366; color: white; width: 20%;">5.3 Action Plan on establishing a sustainable textile and leather production system</div> <div style="border: 1px solid black; padding: 5px; background-color: #003366; color: white; width: 20%;">5.4 Action Plan on developing industrial cluster in textile sector</div> </div>				

Figure 4.6 Animal hair and hide supply chain enhancement program

Source: JICA Project Team

In Mongolia, wool, cashmere, and raw hides are most abundant resources, and there is considerable room to increase the value of these commodities. Although these products have great potential for export, their market competitiveness is limited, and it is essential to improve the supply chain. Specifically, the followings are prioritized development items: 1) establishment of a breeding system to improve the quality of raw wool and

cashmere, 2) improvement of the production and distribution system for raw wool and raw hides, 3) upgrading of wool and leather processing equipment, and 4) development of industrial human resources in the wool and leather sectors. The table herein below shows the relationship between the plan and the development guidelines.

Table 4.5 Relevance of animal hair and hide supply chain enhancement program and development directions

Specific issues, strengths, and development guidelines	Animal Hair and Hide Supply Chain Enhancement Program			
	5.1	5.2	5.3	5.4
1-2-1 Establishment of livestock breeding system	◎			
1-2-2 Training of veterinarians and livestock technicians	○			
1-2-3 Promotion of young fattening (including lamb) through cooperative feeding				
1-2-4 Improvement of equipment and technical training for harvesting and primary processing	○	◎		
1-2-5 Dissemination of appropriate breeding techniques	○	○		
1-2-6 Promotion of slaughterhouse development				
1-2-7 Fostering the pet food industry by utilizing by-products				
1-2-8 Establishment of a collection and shipping system for raw wool, raw hides, and raw milk based on cattle cooperatives		◎	○	
1-2-9 Development of industrial human resources (meat processing, textiles, leather)			○	◎
1-2-10 Promote the use of the traceability system	○		○	
1-2-11 Introduce meat grading that meets market needs and promote branding				○
1-2-12 Cooperation with tourism development and production of souvenirs				
1-2-13 Cluster promotion		○	◎	○

○: strongly linked, ◎: very strongly linked

Source: JICA Project Team

The following is a summary of each plan.

**5.2 Action Plan on Strengthening the Supply Chain of Raw Wool, Cashmere and Raw Hides Based on the Herders' Cooperatives** is a plan to build a distribution infrastructure based on herder's cooperatives as a base for the production of raw wool and hides. The plan aims to gradually shift from a system in which herder deal individually with middlemen for raw wool and hides to a system where herder can collect and ship raw wool and hides and deliver the demanded quality products to consumers . This will require efforts by herder's cooperatives to add value to the raw wool and hides (e.g., primary sorting of raw materials) and the development of facilities for this purpose (e.g., shearing machines, animal hair compressors, and warehouses). A model of a herder's cooperative has already been established in a project supported by UNIDO and other development partners, and the plan is to horizontally expand this model.

**5.3 Action Plan on Establishing a Sustainable Textile and Leather Production System:** This plan promotes capital investment and technology transfer related to environmentally friendly product manufacturing technologies, complying with the "MNS 6926:2021 - Standard for Sustainable Textile Production" approved in 2021. In the manufacture of textile and leather products, reducing environmental impact is an unavoidable issue from the perspective of complying with international standards and

strengthening competitiveness in the international marketplace. In the leather sector, it will promote the transition from conventional chrome-tanning process to vegetable-tanning technology, as well as the development of pit tanks and other equipment necessary for the introduction of this technology.

**5.4 Action Plan on Developing Industrial Cluster in Textile Sector** is a plan to form a textile industry cluster to promote the production and export of more competitive semi-processed and finished products of animal hair. The Mongolian government's attempts to increase the level of domestic processing of textiles are steadily progressing. On the other hand, due to the small number of players involved in the yarn-making process and the aging of yarn-making facilities, Mongolia is unable to supply yarn of the quality and standard demanded by the domestic apparel industry, which has become a bottleneck in the development of the textile industry. This plan will strengthen government support for the yarn-making sector in the textile processing process, and promote the creation of clusters to strengthen cooperation among upstream (raw wool), midstream (washing, carding, combing, and yarn-making), and downstream (manufacturing of finished products such as clothing) players in the textile industry, as well as domestic universities, research institutes, financial institutions, and other organizations.

Note that "**5.1 Action Plan on Establishing a System for Livestock Breed**" is identical to the one with the same title in the Meat and Milk Supply Chain Enhancement Program and hence, it is omitted here.

**(1) Action Plan on Strengthening the Supply Chain of Raw Wool, Cashmere and Raw Hides Based on the Herders' Cooperatives**

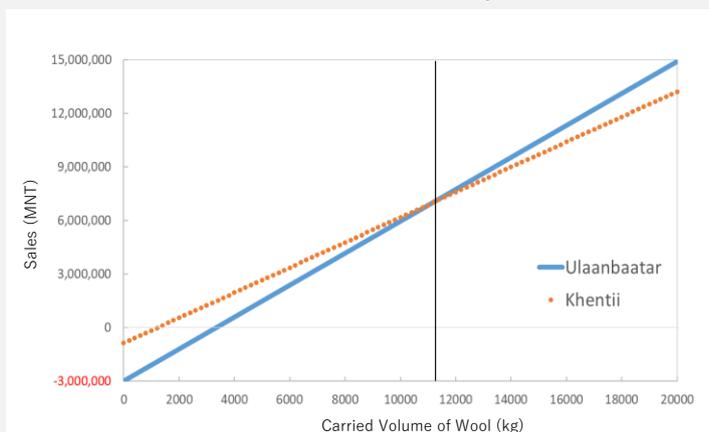
<b>A/P 5-2: Action Plan on Strengthening the Supply Chain of Raw Wool, Cashmere and Raw Hides Based on the Herders' Cooperatives</b>	
Objective	Strengthen the collection and sorting functions of raw wool and hides by existing herder's cooperatives to improve the quality of raw wool and hides, which has been deteriorating in the production and distribution process.
Baseline of A/P	Currently, there are a limited number of herder's cooperative with the function of collecting raw wool and hides from herder and shipping them with added value. Estimated values are as follows. Wool: 50 tons (estimated value) Cashmere: 5 tons (estimated value) Raw hides of cattle, sheep, goats, etc.: 3,000 (estimated value)
Goal of A/P	The following quality raw wool and raw hides will be supplied to processing companies in Mongolia through the strengthened cattle cooperatives. Wool: 96 tons (average wool production per soum x 100 cooperatives = 9,600 tons) Cashmere: 28 tons (average cashmere production per soum) x 100 cooperatives = 2,800 tons Raw hides of cattle, sheep, goats, etc.: 10,000 (average production of raw hides per soum) x 100 cooperatives = 1,000,000
Target area	Each aimag in Mongolia
Expected Outcomes	(1) The necessary systems and implementation guidelines for the implementation of the plan are prepared, and the relevant systems and implementation guidelines are explained to the agricultural administration officials of each aimag and soum. (2) Ten herder's cooperatives will be selected for the project. (3) Demonstration projects including equipment provision and technical training will be conducted in 10 selected herder's cooperatives. (4) The results and lessons learned from the demonstration project will be organized and fed back to the respective aimag officers. (5) An additional 90 herder's cooperatives will be selected to receive equipment and technical training.
Activities	(1) The system and implementation guidelines necessary for the implementation of the plan will be prepared, and it will be explained to the person in charge of the agricultural administration

	<p>office of each aimag and soum.</p> <p>The MOFALI Livestock Policy and Implementation Coordination Department, the Light Industry Policy and Implementation Coordination Department, and the Small and Medium Enterprise Agency will take the lead in preparing the institutional design and implementation guidelines for this plan, with reference to similar efforts that have been made by JICA, SDC, UNIDO and others. Briefing sessions will be held to explain the said system and implementation guidelines to the persons in charge of the agricultural administration Departments in each aimag and soum.</p> <p>(2) Ten herder's cooperatives will be selected for the project.</p> <p>In consultation with the Mongolian Wool and Leather Association, the Wool and Cashmere Association, and the National Agricultural Cooperative Association of Mongolia, the target areas will be selected as relatively good raw wool and raw hide production (or areas where breeds that produce good quality raw wool and raw hides are distributed). 10 herder's cooperatives with at least 10 years of experience in cooperative management will be selected within these areas. The cooperatives will discuss with the processing companies selected by the relevant associations and conclude a business collaboration agreement on trade of raw wool and raw hides.</p> <p>(3) The demonstration project will be implemented in 10 selected herder's cooperatives, including the development of collection points, provision of equipment, and technical training.</p> <p>The project will provide collection facilities, equipment, and technical training to the 10 herder's cooperatives that have concluded business partnership agreements for trading in raw wool and hides. The collection points will be renovated as much as possible particularly those built in the Negdel era, and essential value-adding equipment such as shearing machines, presses, generators, and other materials will be provided. The executives of the selected herder's cooperatives will visit those cooperatives that are functioning with donor support, and will receive training in collection, sorting, and processing of raw wool and hides, as well as in the management of the cooperatives. After implementing these activities, a trial trade of raw wool and hides will be conducted.</p> <p>(4) Organize the results and lessons learned from the demonstration project and provide feedback to the respective officers of each aimag.</p> <p>The results of the above demonstration projects will be summarized, and achievements and lessons learned will be extracted. The information will be shared with the staff in charge of each aimag, and guidelines will be developed for model dissemination and deployment.</p> <p>(5) In addition, 90 herder's cooperatives will be selected to provide equipment and technical training.</p> <p>After consulting with related associations, an additional 90 herder's cooperatives will be selected, and based on the lessons learned from the demonstration project, collection sites will be developed, equipment will be provided, and technical training will be conducted.</p>	
Input	<p><u>Administration</u></p> <ul style="list-style-type: none"> <li>Collection area development costs and equipment procurement costs</li> <li>Expenses for inspection and technical training related to association management</li> <li>Agricultural administration staff of each aimag and soum (per diem and transportation)</li> </ul>	<p><u>Private</u></p> <ul style="list-style-type: none"> <li>Partial payment of equipment procurement costs</li> <li>Administrative expenses for concluding business collaboration agreements</li> </ul>
Project Cost	Total project cost: 228,628 Million MNT (87,029,000 USD)	
Beneficiary Effects/Impacts	The strengthened herder's cooperatives will be able to sell raw wool and raw hides at a higher unit price than before the project was implemented by selling good quality raw wool and hides to processing companies that have signed the business partnership agreement.	
Consistency with Policy	<ol style="list-style-type: none"> <li>Vision 2050 3.1.1 Improve raw materials and product quality of agricultural and pastoral products.</li> <li>Mongolian National Grand Council Resolution No. 36 4.2.1 Create a model agricultural cooperative to establish a proper network of livestock and livestock raw materials, their preparation and supply, initial processing and marketing.</li> </ol>	
Remarks	<ul style="list-style-type: none"> <li>Regarding the equipment to be procured and the content of technical training, refer to the equipment list and technical manuals organized by the SECiM project conducted by UNIDO.</li> <li>To maintain smooth communication between the herder's cooperatives and processing enterprises after the conclusion of the business partnership agreement, the person in charge of the agricultural administration office of each aimag or soum shall conduct periodic monitoring of activities.</li> </ul>	

Activities		2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
(1) The system and implementation guidelines necessary for the implementation of the plan shall be prepared, and explanations regarding said system and implementation guidelines shall be provided to the person in charge of the agricultural administration office of each aimag and soum.												
(2) Ten herder's cooperatives will be selected for the project.												
(3) Implement the demonstration project, including the construction of collection points, provision of equipment, and technical training, at the 10 selected herder's cooperatives.												
(4) Organize the results and lessons learned from the demonstration project and provide feedback to the staff of each aimag.												
(5) A further 90 herder's cooperatives will be selected to provide equipment and technical training.												
Project cost (Total)	Mil MNT	25,001	20,363	26,471	26,471	24,435	24,435	20,363	20,363	20,363	20,363	228,628
	Thousand USD	9,520	7,751	10,076	10,076	9,301	9,301	7,751	7,751	7,751	7,751	87,029

**BOX: Installation Test of Shearing Machine and Wool Press Machine**

In recent years, the number of herders in Mongolia has decreased and the number of livestock has increased, resulting in a six-fold increase in the amount of work per nomadic herder. Such shift has posed a great deal of challenges of improving work efficiency and securing workers in the livestock industry. Therefore, a wool shearing machine and a wool press machine were introduced to a herder's cooperative in Bayan-ovoo-soum, Khentii aimag, and a demonstration test was conducted to improve the efficiency of shearing work and wool transportation. The test results showed that the use of the shearing machine reduced the shearing time from one-third to one-half of the time required for conventional manual shearing. The quantity of wool harvested was also greater than that obtained by hand, indicating that the introduction of a shearing machine contributes directly and significantly to labor saving and improvement of herders' shearing work. The efficiency of wool transportation using the press machine was verified, showing that different truckloads of wool are sold to different profitable destinations (primary cleaners); the closest destination from Bayan-ovoo soum is in Khentii aimag, using press machine will enable the transportation of a large quantity of wool at once. It was found to be more profitable to transport the wool to Ulaanbaatar for sale only if the truckloads exceeded 11,200 kg. In order to obtain greater profit from wool sales, it is important to consider the purchase price, distance to the destination, and truckload capacity before deciding where to sell the wool.



Differences in wool sales and destinations (2023)  
 \*Bayan-ovoo Soum will make higher sales by transporting wool to Ulaanbaatar for sale only if it can transport more than 11,200 kg of wool at a time (if there is no change in the type, number, and fuel efficiency of the trucks).

**(2) Action Plan on Establishing a Sustainable Textile and Leather Production System**

<b>A/P 5-3: Action Plan on Establishing a Sustainable Textile and Leather Production System</b>			
Objective	To provide the necessary support to animal hair and leather processing enterprises, especially SMEs, to comply with "MNS 6926:2021 - Criteria for sustainable textile production" in order to increase the competitiveness of their products in the international market and the degree of domestic processing.		
Baseline of A/P	Companies that spin, weave, or finish textile products to MNS 6926:2021 standards: approx. 10% (estimated value) Companies introducing vegetable-tanning processing technology: approx. 3-5% (estimate)		
Goal of A/P	Companies engaged in spinning, weaving, and finishing of textile products: 20% of the 218 companies (as of 2023) will establish production systems that meet the standards of MNS 6926:2021. Companies engaged in tanning and processing of leather: 10% of 437 companies (as of 2023) will introduce vegetable-tanning process technology.		
Target area	Each aimag in Mongolia		
Expected Outcomes	<ol style="list-style-type: none"> <li>(1) The necessary systems and implementation guidelines for the implementation of the plan are prepared, and the relevant systems and implementation guidelines are explained to the agricultural administration officials of each aimag and soum.</li> <li>(2) Project briefings for related processing companies will be held at each aimag and soum.</li> <li>(3) Subsidized processing companies will develop facilities for sustainable textile and leather production systems.</li> <li>(4) The management status of processing companies whose facilities have been developed through the grant project will be monitored as appropriate.</li> </ol>		
Activities	<ol style="list-style-type: none"> <li>(1) The system and implementation guidelines necessary for the implementation of the plan will be prepared, and it will be explained to the person in charge of the agricultural administration office of each aimag and soum. MOFALI, the Light Industry Policy and Implementation Coordination Department, and the Small and Medium Enterprise Agency will take the lead in preparing the institutional design and implementation guidelines for this plan, with the participation of the staff of the EU's STeP EcoLab project, which supported the development of MNS 6926:2021. The main support items for the institutional design are 1) consulting services to identify areas for improvement of existing facilities and methods of improvement, and 2) new construction and repair of facilities. Briefing sessions will be held to explain the system and its implementation guidelines to the persons in charge of the agricultural administration departments in each aimag and soum.</li> <li>(2) Conduct business presentations to related processing companies at each aimag and soum The person in charge of the agricultural administration office of each aimag and soum will lead the briefing session on the contents of MNS 6926:2021 and the system to the processing companies in their area of responsibility. At the same time, a system will be established to accept applications from processing companies interested in the project.</li> <li>(3) Selection of companies for the project Based on the system design and implementation guidelines already prepared, the selection of eligible companies for the project will be carried out. The criteria for selection will be determined through consultation among MOFALI, the Light Industry Policy Coordination Department, the Small and Medium Enterprise Agency, and related associations.</li> <li>(4) Post-project monitoring Upon completion of the project, the adopted companies will be requested to submit a project completion report. After a certain period of time has elapsed since the completion of the project, the person in charge of the agricultural administration office of each aimag and soum will conduct monitoring to measure the effects of the project.</li> </ol>		
Input	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <u>Administration</u> <ul style="list-style-type: none"> <li>• Consulting expenses (subsidy)</li> <li>• Expenses for new facility construction and repair (subsidy)</li> <li>• Transportation and other expenses for the staff of the Agricultural Administration of each aimag and soum.</li> </ul> </td> <td style="width: 50%; vertical-align: top;"> <u>Private</u> <ul style="list-style-type: none"> <li>• Part of consulting expenses</li> <li>• Part of the cost of new facility construction and repair</li> <li>• Other expenses related to project implementation</li> </ul> </td> </tr> </table>	<u>Administration</u> <ul style="list-style-type: none"> <li>• Consulting expenses (subsidy)</li> <li>• Expenses for new facility construction and repair (subsidy)</li> <li>• Transportation and other expenses for the staff of the Agricultural Administration of each aimag and soum.</li> </ul>	<u>Private</u> <ul style="list-style-type: none"> <li>• Part of consulting expenses</li> <li>• Part of the cost of new facility construction and repair</li> <li>• Other expenses related to project implementation</li> </ul>
<u>Administration</u> <ul style="list-style-type: none"> <li>• Consulting expenses (subsidy)</li> <li>• Expenses for new facility construction and repair (subsidy)</li> <li>• Transportation and other expenses for the staff of the Agricultural Administration of each aimag and soum.</li> </ul>	<u>Private</u> <ul style="list-style-type: none"> <li>• Part of consulting expenses</li> <li>• Part of the cost of new facility construction and repair</li> <li>• Other expenses related to project implementation</li> </ul>		

Project Cost	Total project cost 13,863 Million MNT (5,277,000 USD)
Beneficiary Effects/Impacts	More competitive animal hair and leather related products will be manufactured in the international market. This will increase the volume and value of exports of textile and leather products and improve the profitability of companies in the textile and leather industry.
Consistency with Policy	<ol style="list-style-type: none"> <li>1. Vision 2050 4.2.7 Support the cashmere industry and increase exports of combed cashmere and finished products.</li> <li>2. Vision 2050 4.2.8 Fully process livestock and other animal skins, hides, furs, and wools, and increase exports of woven and knitted fabrics.</li> </ol>
Remarks	<ul style="list-style-type: none"> <li>The implementation of this plan should be based on a review of the STeP EcoLab initiatives implemented by the EU and in close consultation with its stakeholders.</li> </ul>

**Project Implementation Schedule and Budget**

Activities	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total	
(1) The system and implementation guidelines necessary for the implementation of the plan shall be prepared, and explanations regarding said system and implementation guidelines shall be provided to the person in charge of the agricultural administration office of each aimag and soum.												
(2) Conduct business briefing sessions for related processing companies at each aimag and soum												
(3) Selection of companies for the project												
(4) Post-project monitoring												
Project cost (Total)	Mil MNT	660	1,467	1,467	1,467	1,467	1,467	1,467	1,467	1,467	1,467	13,863
	Thousand USD	255	558	558	558	558	558	558	558	558	558	5,277

**(3) Action Plan on Developing Industrial Cluster in Textile Sector**

A/P 5-4: Action Plan on Developing Industrial Cluster in Textile Sector	
Objective	With the aim of strengthening the domestic processing level and international competitiveness of textile products in Mongolia and increasing export volume, the textile industry cluster will be formed to strengthen the yarn-making sector within the textile process and to promote stronger collaboration among textile-related players, universities, research institutions, and financial institutions from upstream to downstream.
Baseline of A/P	Woolen yarn (HS5109) export quantity: 7.8 tons, export value: 495,722USD (2021) Clothing and clothing accessories (HS61) exported: 558 tons, export value: 39,426,541USD (2021)
Goal of A/P	Increase the total volume and value of exports of textile products (clothing, yarn, etc.) by 2034 as follows. Woolen yarn (HS5109) export quantity: 20.2 tons, export value: 1,285,775 USD Clothing and clothing accessories (HS61) exported: 908 tons, export value: 64,221,680 USD
Target area	All over Mongolia
Expected Outcomes	<ol style="list-style-type: none"> <li>(1) A system of subsidies and tax exemptions for capital investment (spinning equipment) in textile-related enterprises will be designed.</li> <li>(2) Coordination of opinions with private businesses and various organizations engaged in the textile industry regarding the proposed system design will take place.</li> <li>(3) The designed system will be put into operation.</li> <li>(4) After the implementation of the program, regular project monitoring will be conducted and the effectiveness of the project will be properly evaluated.</li> </ol>
Activities	<ol style="list-style-type: none"> <li>(1) A system of subsidies and tax exemptions for capital investment (spinning equipment) in textile-related enterprises will be designed.</li> </ol> <p>MOFALI, the Light Industry Policy and Implementation Coordination Department, and the Small and Medium Business Administration will take the lead in preparing the institutional design and</p>

	<p>implementation guidelines for this plan. The design of the program will be based on the following points: 1) the program will provide subsidies (or low-interest loans) for capital investment (spinning), 2) the program will include import tax exemptions for imports of processing equipment from other countries, and 3) the program will be designed not for individual companies but for organizations that can cover the supply chain from raw material procurement to final product manufacturing. Textile-related companies using this system will be required to play a role as a core company in the textile industry cluster.</p> <p>(2) Coordination of opinions with private businesses and various organizations engaged in the textile industry regarding the proposed system design will take place.</p> <p>(3) Explain the draft system design prepared in Activity (1) to the private sector and various organizations engaged in the textile industry. Based on the comments obtained in this process, the system will be appropriately revised.</p> <p>(4) The designed system will be put into operation.</p> <p>The system will be implemented for a period of approximately five years, with public solicitation and selection of companies eligible for subsidized projects to be carried out every year during this period.</p> <p>(5) After the implementation of the program, regular monitoring will be conducted to properly evaluate the effectiveness of the project.</p> <p>Upon completion of the project, the adopted companies will be requested to submit a project completion report. After a certain period of time has elapsed since the completion of the project, the person in charge of the agricultural administration office of each aimag and soum will conduct monitoring to measure the effects of the project.</p>	
Input	<p><u>Administration</u></p> <ul style="list-style-type: none"> <li>Consulting fees for system design</li> <li>Grants for industry association organizing activities</li> <li>Tax exemption for purchase of materials and equipment</li> <li>Low-interest loans for capital investment (spinning)</li> <li>Transportation and other expenses for the staff of the Agricultural Administration of each aimag and soum.</li> </ul>	<p><u>Private</u></p> <ul style="list-style-type: none"> <li>Technical training expenses</li> <li>Invitation of experts from overseas and Japan to provide guidance on processing technology (honorarium, daily allowance, transportation expenses)</li> <li>Other expenses related to project implementation</li> </ul>
Project Cost	Total project cost: 46,650 Million MNT (17,757,000 USD)	
Beneficiary Effects/Impacts	Higher value-added textile products will be manufactured for the international market. This will increase the total volume and value of textile exports and improve the profitability of companies in the textile industry.	
Consistency with Policy	<ol style="list-style-type: none"> <li>Vision 2050 4.2.7 Support the cashmere industry and increase exports of combed cashmere and finished products.</li> <li>Vision 2050 4.2.8 Fully process livestock and other animal skins, hides, furs, and wools, and increase exports of woven and knitted fabrics.</li> </ol>	

Project Implementation Schedule and Budget

Activities	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total	
(1) A system of subsidies and tax exemptions for capital investment (spinning equipment) in total textile-related enterprises will be designed.												
(2) Coordination of opinions with private businesses and various organizations engaged in the textile industry regarding the proposed system design.												
(3) Operation of the designed system begins.												
(4) Regular project monitoring will be conducted and the effects of the project will be appropriately evaluated.												
Project cost (Total)	Mil MNT	50	8,975	8,925	9,200	9,200	9,200	275	275	275	275	46,650
	Thousand USD	22	3,416	3,397	3,502	3,502	3,502	104	104	104	104	17,757

## 4.2.6 Honey supply chain enhancement program

### Honey Supply Chain Enhancement Program

Unstable production and quality, as well as high costs, are challenges. In the domestic market, distribution through supermarkets has become the mainstream, and companies are contributing to stable supply as important players. However, there are also many imports, and the supply always exceeds consumption, making the competitive environment severe. More stable supply is needed. Price competition in the international market is also severe, and Mongolian honey is not price competitive. Being a landlocked country, Mongolian honey is also at a disadvantage. Along with efforts to mitigate high costs, including logistics and export procedures, it is necessary to develop Mongolia's advantage to match the target market.

	Input	Production	Processing	Distribution & Export	Sales & Consumption
Actors	Pesticide suppliers, beekeepers, importers, etc.	Beekeepers, beekeeping companies	Beekeepers, beekeeping companies, honey filling companies	Beekeepers, beekeeping companies, honey filling companies	Beekeepers, companies, retailers
Main Issues	There are problems with obtaining appropriate pesticides and bee colonies with low risk of residues. Domestic production is available, but limited.	Pests and diseases are widespread. Unstable honey harvesting environment and short production season. Bee rearing techniques need to be improved. Residual risks have not been assessed. Some beekeepers have a low awareness of compliance with standards.	High cost of honey procurement for companies. High inventory and low factory operation. Low food sanitation awareness among beekeepers. Many products are unstable in quality. Mistrust of false place of origin and fake honeys. Dependence on imports for packaging materials, with few options.	High transportation costs. Unstable supply due to many beekeepers selling directly to consumers. Lack of product lines in quality and price range for daily use. Lack of export competitiveness.	Per capita consumption is low. Consumers are unaware of the quality and standards of honey. High cost of sales. Products are not competitive.
Counter-measures	<div style="background-color: #0056b3; color: white; padding: 5px; margin-bottom: 5px;">6.1 Action Plan on developing capacity of beekeeping veterinarians and technology for pests and diseases resistant beekeeping</div> <div style="background-color: #0056b3; color: white; padding: 5px; margin-bottom: 5px; margin-left: 100px;">6.2 Action Plan on strengthening market competitiveness of honey products through the introduction of proper quality assurance system</div> <div style="background-color: #0056b3; color: white; padding: 5px; margin-bottom: 5px; margin-left: 100px;">6.3 Action Plan on promoting honey exports through honey cluster strengthening</div> <div style="background-color: #0056b3; color: white; padding: 5px; margin-left: 200px;">6.4 Action Plan on promoting beekeeping industry in collaboration with other industries</div>				

Figure 4.7 Honey supply chain enhancement program

Source: JICA Project Team

While Mongolian honey has the challenges such as (1) unstable production, (2) unstable quality, and (3) high cost, there still exists a promising market both at home and abroad. In order to expand the market, the unstable production and quality must be improved to achieve a stable supply.

Domestic production is highly valued in the Mongolian market, and achieving a stable supply is expected to proceed with import substitution. In the domestic market, the goal should be to expand the market itself as well as to strengthen competitiveness. Since honey is a luxury item, food security is not a major concern.

Table 4.6 Relevance of honey supply chain enhancement program and development directions

	Specific issues, strengths, and development guidelines	Honey Supply Chain Enhancement Program			
		6.1	6.2	6.3	6.4
issue	Pest infestation trends	⊙	○		
	Unstable production	⊙	⊙		⊙
	Unstable quality		⊙		○
	Unstable supply	○	○	○	○
	High production and distribution costs	⊙			⊙
	Underdeveloped domestic market		○		⊙
	Not exporting.	⊙	⊙	⊙	○
	Lack of brand power		⊙	○	⊙
Strength	Veterinary monitoring system	⊙	⊙		
	Existence of breeding technology development institutions	⊙			
	Development of quality control systems	○	⊙	○	
	Establishment of honey clusters		○	⊙	○
	Presence of nectar sources with a good image				⊙

	Specific issues, strengths, and development guidelines	Honey Supply Chain Enhancement Program			
		6.1	6.2	6.3	6.4
Direction of Development	Possibility of cooperation with nomadism and agriculture				◎
	1-2-1 Establishment of livestock breeding system				
	1-2-2 Training of veterinarians and livestock technicians	◎			
	1-2-3 Promotion of young fattening (including lamb) through cooperative feeding				
	1-2-4 Improvement of equipment and technical training for harvesting and primary processing				
	1-2-5 Dissemination of appropriate breeding techniques				
	1-2-6 Promotion of slaughterhouse development				
	1-2-7 Fostering the pet food industry by utilizing by-products				
	1-2-8 Establishment of a collection and shipping system for raw wool, raw hides, and raw milk based on cattle cooperatives				
	1-2-9 Development of industrial human resources (meat processing, textiles, leather)				
	1-2-10 Promote the use of the Tresa system	○	◎	○	
	1-2-11 Introduce meat grading that meets market needs and promote branding				
	1-2-12 Cooperation with tourism development and production of souvenirs				◎
1-2-13 Cluster promotion			◎	○	

○: strongly linked, ◎: very strongly linked

Source: JICA Project Team

Under "Action Plan on Developing Capacity of Beekeeping Veterinarians and Technology for Pests and Diseases Resistant Beekeeping " pest control will be addressed to avoid bee swarm loss, which is the greatest risk for stable production. In Mongolia, approximately 20% of bee colonies are lost during overwintering, mostly due to the honey bee hog mite. There are also some serious diseases that do not currently exist in Mongolia but have a high infection rate. Pest control is an urgent issue, involving prevention of pest infestation, enhancement of veterinary services, and development and dissemination of pest control technology. It is necessary for quarantine officers to properly control the importation of bee swarms to prevent the entry of pests, for assigned veterinarians with knowledge in the field of beekeeping to monitor for pests, and for beekeeping technicians to disseminate pest control technology, however, there are very few professional staff with knowledge of beekeeping. Therefore, it is necessary to establish a monitoring system and improve the capacity of beekeeping specialists, including a review of the veterinary assignment plan.

In " Action Plan on Strengthening Market Competitiveness of Honey Products through the Introduction of Proper Quality Assurance System", the plan aims to add value in both domestic and international markets by introducing a quality control system. Since honey is often adulterated, being able to confirm the place of origin and production process adds significant value. Assurance of honey quality and elimination of distrust surrounding adulteration are values other than price that will strengthen competitiveness. Ensuring and promoting food safety is also essential for exports. Especially in the export market, Mongolian honey is not price-competitive, so it is important to find a market where it can compete on value other than price, and to enter the market strategically.

The " Action Plan on Promoting Honey Exports through Honey Cluster Strengthening" will promote

the analysis of target markets and the development of export protocols with export destination countries by strengthening the coordination of organizations involved in honey exports. The first hurdle for exports is the selection of the most suitable target market, followed by the meeting specific requirements and needs of the importing country. These requirements by importing countries are sometimes complex, and the documentation to be submitted is strictly defined, close coordination between the private sector and government agencies is necessary in the actual export process. The project will also promote stronger collaboration within the private sector. Strengthened collaboration between beekeepers and beekeeping companies will contribute to the stable stock and supply of honey. In addition to beekeeping-related enterprises, collaboration with logistics companies and forwarders is also needed.

" **Action Plan on Promoting Beekeeping Industry in Collaboration with Other Industries**" promotes the partnership with other industries. Stability of nectar sources is essential for honey production and its quality. In Mongolia, nectar source stability can be achieved in cooperation with agriculture and pastoral industry. Bees are excellent pollinators, and beekeeping has a positive impact on agricultural productivity and grassland conservation. Cooperation between agriculture and beekeeping is important to avoid the impact of pesticide spraying on agricultural lands and contamination of honey with pesticides. In addition, to expand the market, collaboration with the tourism industry should be sought. The flow of tourists from urban areas to beekeeping areas will increase citizens' understanding of beekeeping and generate honey consumption not only through the souvenir market, but also through the food service and food industry. Inbound tourism further has the potential to lead to exports. Although competition in the international market is extremely fierce, international tourists who become fans of Mongolian beekeeping choose Mongolian honey over other honey products upon returning home.

**(1) Action Plan on Developing Capacity of Beekeeping Veterinarians and Technology for Pests and Diseases Resistant Beekeeping**

<b>A/P 6-1: Action Plan on Developing Capacity of Beekeeping Veterinarians and Technology for Pests and Diseases Resistant Beekeeping</b>	
Objective	Specialized beekeeping personnel such as veterinarians, technicians, and quarantine officers with knowledge in the field of beekeeping will be trained and bee diseases will be controlled.
Baseline of A/P	Approximately 13% of beekeepers have a contract with a veterinarian. There are no quarantine stations staffed by specialists with expertise in beekeeping.
Goal of A/P	80% of beekeepers undergo veterinary monitoring. Specialists with expertise in beekeeping will be assigned to all quarantine stations where bee swarms are imported.
Target area	National Beekeeping Area and Quarantine
Expected Outcomes	While bee pest management techniques are developed and disseminated, the spread of pests and diseases is controlled and the number of collapsed bee colonies is reduced if veterinarians and quarantine officers with knowledge in the beekeeping field are properly assigned to beekeeping-related areas and related tasks are effectively carried out.
Activities	(1) Conduct research and development of healthy bee swarm rearing techniques that are resistant to pests and diseases (2) The General Authority of Veterinary Services (GAVS), the provincial veterinary laboratory, and the National Veterinary Laboratory (SCVL) will continuously collect information on domestic and international pest outbreaks, while the National Veterinary Laboratory and the Veterinary Medicinal Laboratory (IVM) will research and develop control techniques and making this technical information available to beekeepers. (3) Develop an appropriate deployment plan for private veterinary service companies operating in

	<p>the beekeeping sector</p> <p>The GAVS will assess the current status of private veterinary services that can be provided in the beekeeping sector and, if necessary, review the regulations related to veterinary services. Subsequently, It will then develop a realistic veterinary staffing plan.</p> <p>(4) Conduct beekeeping training on a regular basis to develop professional beekeeping staff GAVS will take the lead in integrating the field of beekeeping into the veterinary license renewal curriculum, approve textbooks, and provide regular training for veterinarians. The Mongolian University of Life Sciences will develop a curriculum in beekeeping as an elective course in the veterinary school and appoint lecturers. The MOFALI Livestock Department, in cooperation with GAVS, the RD Center and IVM, will provide training in beekeeping, based on veterinary training, to those livestock specialists who wish to participate.</p> <p>(5) Help beekeepers understand the benefits of veterinary services The RD Center will prepare technical dissemination materials for beekeepers on the technology and beekeeping specialists who have received training will conduct pest and disease training for beekeepers.</p> <p>(6) Regularly monitor and evaluate bee swarm management in beekeeping operations and quarantine of private veterinary services Establish terms of reference for GAVS, Customs, SCVL, County Veterinary Laboratory, IVM, RD Center, and other related agencies, and develop monitoring system; incorporate monitoring of bee disease outbreak into annual activity plans of GAVS and Customs, and accumulate monitoring results as shared information between these agencies and provide feedback to the field.</p>	
Input	<p><u>Administration</u></p> <ul style="list-style-type: none"> <li>• Research and development expenses for pest control technology</li> <li>• Administrative expenses for planning</li> <li>• Training holding fee</li> <li>• Cost of producing textbooks and promotional materials</li> <li>• Monitoring and Implementation Costs</li> <li>• For beekeepers, subsidies for vet contract expenses initially 5 years</li> </ul>	<p><u>Private</u> (Veterinarian)</p> <ul style="list-style-type: none"> <li>• Training participation fees (course fees, travel expenses)</li> </ul> <p>(Beekeeper)</p> <ul style="list-style-type: none"> <li>• Partial out-of-pocket expenses for contract with veterinarian</li> </ul>
Project Cost	Total project cost 1,538 Million MNT (585,000 USD)	
Beneficiary Effects/Impacts	Economic benefit of reducing the number of bee colonies lost due to inadequate pest control (10% to 3%: bee colony price 1,103,000 USD + 3 years of lost nectar opportunities 912,000 USD = total 2,015,000 USD)	
Consistency with Policy	<ol style="list-style-type: none"> <li>1. Vision 2050 4.2.6. Ensure national food security and increase food exports through strengthening livestock sanitation work</li> <li>2. Government Action Plan (2020-2024) 3.3.8 Complete the reform of the veterinary system, implement measures against livestock infectious diseases and notifiable infectious diseases, certify notifiable infectious disease free and clean areas, and expand export potential for livestock products and raw materials.</li> <li>3. Resolution No. 36 of the Grand National Assembly of Mongolia 4.5.2 Phasing out imports of honey, providing low-interest loans to increase exports of honey with certified origin.</li> </ol>	
Remarks	<ul style="list-style-type: none"> <li>• Utilize the results of existing projects such as JICA Grassroots Technical Cooperation Projects in cooperation with MJ-VET and WB-LCP</li> <li>• Consider innovative approaches, such as creating a competitive environment among private veterinarians, authorizing activities over a wide area, and considering the provision of veterinary services in line with the VC.</li> <li>• To enable the contracting beekeeper to evaluate and select a veterinarian, the veterinarian's course history and major awards and penalties at the time of license renewal should be made available to all concerned parties.</li> </ul>	

Project Implementation Schedule and Budget

Activities	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
(1) Research and develop healthy bee swarm rearing techniques that are resistant to pests and diseases.											
(2) Develop an appropriate placement plan for private veterinary service companies operating in the											

beekeeping sector.												
(3) Conduct beekeeping training for veterinarians on a regular basis.												
(4) Help beekeepers understand the benefits of veterinary services												
(5) Regularly monitor and evaluate bee swarm management in beekeeping operations and quarantine of private veterinary services.												
Project cost (Total)	Mil MNT	201	160	161	161	149	149	149	136	136	136	1,538
	Thousand USD	82	60	61	61	56	56	56	51	51	51	585

**BOX: BeeDep-MONGOL Initiatives**

For the last seven years, JICA has been implementing BeeDep-MONGOL, a grassroots technical cooperation project in the field of beekeeping, focusing on the demonstration and dissemination of beekeeping technology and production process management. The spread of pests and diseases is a pressing issue in Mongolian beekeeping, and beekeepers have been importing foreign-language chemicals on their own and using them hazardously, such as directly spraying them on hives containing honey without verifying the contents. In addition, when importing bee swarms from neighboring countries, there are no quarantine officers or veterinarians to control the presence of pests and diseases. As a countermeasure, the Directorate General of Veterinary Services has developed the "General Guidelines for Sanitary Management and Veterinary Services in the Beekeeping Industry" to provide a legal framework for the provision of veterinary services in the beekeeping sector and for the monitoring of the production process by veterinarians. Meanwhile, the Directorate General of Veterinary Services has introduced a veterinary license renewal system and is working to improve veterinary capacity, supported by the WB's Livestock Commercialization Project and JICA's Capacity Building Project for Civil Servant and Private Veterinary Practitioners. MONMAP –AVC and BeeDep are also collaborating to develop a curriculum in the field of beekeeping, and training programs for veterinarians have already started.



Veterinary Training

**(2) Action Plan on Strengthening Market Competitiveness of Honey Products through the Introduction of Proper Quality Assurance System**

<b>A/P 6-2: Action Plan on Strengthening Market Competitiveness of Honey Products through the Introduction of Proper Quality Assurance System</b>	
Objective	Honey traceability and honey GAP will be introduced throughout the country to lower the risk of false place of origin and food safety, leading to a larger share of the domestic market and an expansion of the export market.
Baseline of A/P	Traceable honey supply that adheres to honey GAP, 0 tons /year
Goal of A/P	After 10 years, 200 tons of traceable Mongolian honey that adheres to the honey GAP will be supplied to the market annually.
Target area	Each aimag with beekeeping (started in Darkhan-uul, Serenge, and Dornod, to be expanded nationwide after 5 years)
Expected Outcomes	Honey GAP and Honey Traceability System (HTS) are introduced by beekeeping operations and GAP certified and traceable honey is recognized in domestic and international markets.
Activities	(1) Formulate a honey GAP. (2) MOFALI Food Policy Department will take the lead in developing the Honey GAP in cooperation with MOFALI Industrial Audit Department and Livestock Policy Implementation Coordination Department, MNAS, MASM, and GAVS, and establish conformity assessment methods; have

	<p>RD centers develop GAP implementation manual. Establish a honey GAP conformity assessment system.</p> <p>Conduct honey GAP training for certification bodies and obtain accreditation.</p> <p>(3) Introduce them into beekeeping operations in the target area.</p> <p>MOFALI and RD Center will lead a pilot project for the introduction of honey GAP for Darkhan-uul, Selenge and Dornod aimags beekeepers and their business associations/companies and conformity assessors.</p> <p>(4) Introduce HTS into beekeeping operations in the target area.</p> <p>The RD Center will prepare a manual for the use of HTS; MOFALI and the RD Center will take the lead in conducting a demonstration test of the introduction of a honey traceability system (HTS) for Darkhan-uul, Selenge and Dornod beekeepers along with their client associations and companies.</p> <p>(5) Increase market awareness of GAP and traceability.</p> <p>MOFALI Food Policy Department, in cooperation with the Honey Cluster, will hold regular VC stakeholder consultation meetings; have the RD Center and the Honey Cluster develop and implement a public relations plan for domestic and international markets. MOFALI will support and subsidize this activity; and MOFALI will provide support to the RD Center and the Honey Cluster to develop and implement a public relations plan for the RD Center and the Honey Cluster.</p> <p>(6) Promote GAP and HTS nationwide.</p> <p>The MOFALI Food Policy Department and RD Center will take the lead in developing a national honey GAP adoption and dissemination plan and conducting honey GAP training nationwide.</p> <p>The MOFALI Food Policy Department and RD Center will take the lead in developing a national HTS adoption and dissemination plan and conducting HTS training nationwide.</p>	
Input	<p><u>Administration</u></p> <ul style="list-style-type: none"> <li>• Administrative expenses for honey GAP legislation</li> <li>• Subsidy for GAP certification (initially 6 years)</li> <li>• Manual and text development costs</li> <li>• Manual and record book printing costs (GAP, HTS)</li> <li>• repair expenses</li> <li>• VC Council meeting expenses</li> <li>• public relations expenses</li> </ul>	<p><u>Private</u></p> <ul style="list-style-type: none"> <li>• Administrative expenses for introducing honey GAP and HTS</li> <li>• Employee training costs for GAP/HTS implementation</li> <li>• GAP certification expenses (after 7th year)</li> <li>• Label revision costs (QR code, GAP mark)</li> </ul>
Project Cost	Total project cost: 272.6 Million MNT (1,037,000 USD)	
Beneficiary Effects/Impacts	Sales of quality-assured honey will lead to import substitution in the domestic market (share 60% to 70%; 889 Million MNT). Domestic consumption and sales will increase by 1.5 times (130 g/person/year to 200 g/person/year = 4,788 Million MNT). Competitiveness will be enhanced in the export market and the market will expand (100 tons = 1,800 Million MNT per year at beekeeper gate price; 18,000 Million MNT after commodity customs clearance).	
Consistency with Policy	<ol style="list-style-type: none"> <li>1. Vision 2050 4.2.6. Ensure national food security and increase food exports through strengthening livestock sanitation work</li> <li>2. Vision 2050 4.2.23. Develop institutional functions to make the information technology sector develop in an export-oriented manner.</li> <li>3. Vision 2050 4.5.7. strengthen the management of SMEs to ensure that they meet the requirements of global value chains, improve their management, enhance employee skills, introduce technological advances and innovations, and improve product quality and standards.</li> <li>4. Resolution No. 36 of the Grand National Assembly of Mongolia 4.5.2 Phasing out imports of honey, providing low-interest loans to increase exports of honey with certified origin.</li> </ol>	
Remarks	<ul style="list-style-type: none"> <li>• In implementing the Honey GAP and HTS, the content of the GAP, HTS, and the "General Guidelines for Hygiene Requirements for Veterinary Services and Apiaries (General Guidelines for Beekeeping)" should not conflict or overlap with each other and should be linked to each other.</li> <li>• Encourage beekeepers and beekeeping companies to regularly analyze their products (standards compliance, residues, general bacteria) to ensure the safety of the final product.</li> <li>• The GAP conformity assessment system should be realistic so that beekeepers and beekeeping companies will continue to perform GAP.</li> <li>• Incorporate capacity building for GAP conformity assessment into dissemination plans.</li> <li>• Focus on the market, as market pressures drive quality control.</li> </ul>	

Project Implementation Schedule and Budget

Activities		2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
(1) Introduce honey GAP into beekeeping operations in the target area.												
(2) Introduce HTS into beekeeping operations in the target area.												
(3) Increase market awareness of GAP and traceability.												
(4) Spread GAP and HTS nationwide.												
Project cost (Total)	Mil MNT	299	276	286	286	310	338	226	237	228	240	2,726
	Thousand USD	117	105	108	108	118	128	86	90	86	91	1,037

**BOX: Quality Assurance Can Add Value.**

In March 2023, 46% of "honey" imported into the EU was found to be watered down or mixed with syrup, according to the European Anti-Fraud Office. In addition, 66 out of 89 products imported from China and 14 out of 15 products imported from India did not meet EU honey standards. Many products were also found to be mislabeled regarding their place of origin. Honey is one of the most frequently adulterated food products, and unfortunately, it is a common practice to cheap sugar, false claim of origin, and disguised nectar source. Those involved in beekeeping are well aware of these practices and considered as an open secret in the industry. The MOFALI is in the process of developing a honey GAP, supported by MONMAP-AVC to ensure safety and prevent the addition of sugars. In addition, HTS has been developed to manage the production process and trace it back to the place of origin. The Food and Agriculture Light Industry Research and Development Center has begun to disseminate the HTS. Because it is a common disguise, there is great value in unadulterated and quality honey products.

**(3) Action Plan on Promoting Honey Exports through Honey Cluster Strengthening**

A/P 6-3: Action Plan on Promoting Honey Exports through Honey Cluster Strengthening	
Objective	Increase the export volume of honey.
Baseline of A/P	Exports in 2022: 0.3 tons
Goal of A/P	Exports of 20 tons in 3 years, 30 tons in 5 years, and 100 tons in 10 years will be realized.
Target area	Whole country
Expected Outcomes	Coordination among organizations involved in honey exports will be strengthened, target markets will be defined, and protocols with export destination countries will be developed. In addition, production can be adapted to the requirements of target markets and market needs.
Activities	<p>(1) Strengthen coordination of organizations involved in honey exports</p> <ul style="list-style-type: none"> <li>① The MOFALI Food Policy Department will study ways of collaboration among the agencies involved and amend the legal system as necessary in order to involve government agencies in cluster activities.</li> <li>② MOFALI Food Policy Department will hold regular honey export council meetings with the participation of relevant government agencies and honey clusters on the theme of export promotion.</li> <li>③ MOFALI Food Policy Department facilitates contracts/collaboration between beekeepers, beekeeping companies, logistics companies, customs brokers, etc.</li> </ul> <p>(2) Sign protocols with target countries</p> <ul style="list-style-type: none"> <li>① The Ministry of Foreign Affairs, MOFALI Food Policy Department and External Relations Department will determine target markets and collect information necessary to conclude protocols.</li> <li>② The Ministry of Foreign Affairs, MOFALI Food Policy Department and External Relations Department, and the Customs Agency will cooperate to develop a protocol development plan.</li> <li>③ The Ministry of Foreign Affairs and the Customs Agency will work with the Honey Export</li> </ul>

	<p>Council to develop these protocols.</p> <p>(3) Organize and share target market requirements and market needs with stakeholders</p> <p>① MOFALI Food Policy Department and External Relations Department, as well as the Customs Service, will work together to collect information on target market requirements and market needs.</p> <p>② Accumulating information within honey clusters</p> <p>③ MOFALI Food Policy Department supports to honey clusters in information sharing and market response activities.</p>	
Input	<p><u>Administration</u></p> <ul style="list-style-type: none"> <li>Expenses for holding council meetings (administrative expenses and travel expenses for participants)</li> <li>Export market research expenses</li> <li>Target Country Business Trip Subsidy</li> <li>Cluster information-related maintenance expenses</li> <li>Subsidy for cluster activities</li> </ul>	<p><u>Private</u></p> <ul style="list-style-type: none"> <li>Cluster administrative expenses</li> <li>Cluster Activity Expenses</li> <li>Business Trip Participation Fee</li> <li>Exhibition expenses</li> <li>Quality control response expenses</li> </ul>
Project Cost	Total project cost: 2083 Million MNT	
Beneficiary Effects/Impacts	Exports will expand the market (100t = beekeeper gate price of 18,000 Million MNT per year for 10 years, price after commodity clearance of 180,000 million MNT).	
Consistency with Policy	<ol style="list-style-type: none"> <li>Vision 2050 4.2.23. Develop institutional functions to make the information technology sector develop in an export-oriented manner.</li> <li>Vision 2050 4.5.7. strengthen the management of SMEs to ensure that they meet the requirements of global value chains, improve their management, enhance employee skills, introduce technological advances and innovations, and improve product quality and standards.</li> <li>5-Year Basic Policy (2021-2025) 3.3.2. Strengthen and establish a system to support small and micro enterprises.</li> <li>Five-Year Basic Policy (2021-2025) 4.5.2. Promote the development of clusters of supply and sales networks for small and micro enterprises.</li> <li>Government Action Plan (2020-2024) 1.1.5 Develop export support measures to increase export volume.</li> <li>Government Action Plan (2020-2024) 3.3.12 Establish a logistics network for transportation and marketing of agricultural and livestock products and establish an appropriate system of quality control and certification in the supply of agricultural and livestock products.</li> <li>Government Action Plan (2020-2024) 4.5.2 Focus on economic diplomacy and continue policies to increase export volume, classify, address problems and difficulties in trade, reduce and simplify based on public-private cooperation.</li> </ol>	
Remarks	<ul style="list-style-type: none"> <li>To work with the Export Cluster Network supported by EU-TRAM.</li> <li>To coordinate with GAP, HTS, and Veterinary Services activities related to honey quality.</li> </ul>	

**Project Implementation Schedule and Budget**

Activities		2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
(1) Strengthen cooperation among organizations involved in honey export.												
(2) Sign a protocol with the target country.												
(3) Organize the requirements and market needs of the target market and share them with relevant parties.												
Project cost (Total)	Mil MNT	342	399	183	244	156	183	114	177	110	175	2,083
	Thousand USD	135	151	69	92	59	69	43	67	41	66	792

**BOX: Benefits of Enhanced Collaboration**

During the PAs conducted in MONMAP-AVC, companies demanded the inclusion of 80% sugar content in their contracts with beekeepers and excluded any honey that did not meet this requirement. This resulted in a significant improvement

in quality. In addition, the companies have managed to stabilize their supply by holding a certain quantity of honey. Quality, quantity, and delivery stability are indispensable conditions for exports, and it is hoped that the matching of companies and beekeepers will further expand business transactions.

The honey cluster, established in 2022, will also provide support for business matching. The cluster aims to involve beekeepers, honey companies, logistics companies, and financial institutions, and its activities are also designed to facilitate smooth honey exports through public-private partnerships. At the founding event of honey cluster, the companies with experience in exporting to Japan shared information on export cases and procedures, and at the April 2023 event, financial institutions gave lectures to beekeepers on financial management and productivity improvement. The cluster is anticipated to aggregate the needs of not only beekeepers, but also honey companies and financial institutions, which will serve as the keystone for cooperation with the government. Currently, Mongolia is aiming to establish the exchange protocols with China regarding honey export, however, as per the latest information from the private sector, such as the status of HACCP acquisition, is not properly communicated to the government.

#### (4) Action Plan on Promoting Beekeeping Industry in Collaboration with Other Industries

A/P6-4: Action Plan on Promoting Beekeeping Industry in Collaboration with Other Industries			
Objective	Honey production will be stabilized, honey safety will be improved, beekeeping income sources will be diversified, and honey consumption will increase.		
Baseline of A/P	Zero (0) tons of honey from seed sowing of nectar plants; zero (0) tons of honey sold at sales locations		
Goal of A/P	Seed sowing of nectar plants in fallow fields and nomadic wintering and foraging areas produces 70 tons of monofloral nectar or equivalent honey annually. One ton of honey is handled at the sales office.		
Target area	Selenge, Darkhan-Uul, Bulgan, Khentii		
Expected Outcomes	Beekeeping can be done in cooperation with agriculture, avoiding the use of pesticides. Pollen cross pollination improves agricultural productivity and stabilizes beekeeping management through pollen cross income. In addition, the use of fallow fields and grasslands as a source of nectar will stabilize nectar collection and contribute to soil improvement and an increase in pastureland. It will also be possible to use the area as a tourist resource, thus attracting the tourist market and expanding the honey market.		
Activities	<p>(1) Produce honey from a fallow nectar source. MOFALI Livestock Department and Agricultural Policy Department will select fallow lands for nectar sources in Selenge and Darkhan-Uul and facilitate contracts between beekeepers and agricultural enterprises. The RD Center will demonstrate cultivation of plants to be sown in fallow lands, register varieties, and implement a pilot project for fallow field nectar sources in Selenge and Darkhan-Uul. In the pilot project, the improvement of crop productivity by introducing bee colonies will be investigated. Beekeepers and companies will brand the honey collected from these fallow field nectar sources, and MOFALI will support them. The RD Center will compile a series of case studies into a manual for each plant, promote contracts between agricultural companies and beekeepers, and establish a system to share information on pesticide application mainly with contracted companies and beekeepers.</p> <p>(2) Produce honey using nectar sources from foraging areas. MOFALI Livestock Department will conduct a survey of foraging areas that can be used as nectar sources in Bulgan and Khentii, and educate herders on the benefits of using nectar source. In addition, a series of case studies will be compiled into a form of manual to promote contracts between herders and beekeepers.</p> <p>(3) Expand honey sales in the tourist market. The MOFALI Food Policy Department will support in developing of processed honey products by beekeepers and assist in the establishment of sales points in beekeeping areas. The Ministry of Environment and Tourism will share information on these sales points with tourism development centers and travel agencies at the request of beekeeping organizations. MOFALI will support the marketing of honey and honey products through cross-border e-commerce.</p>		
Input	<table border="0"> <tr> <td style="vertical-align: top;"> <u>Administration</u> <ul style="list-style-type: none"> <li>• Educational activity expenses</li> <li>• Fallow land honey source pilot project cost</li> </ul> </td> <td style="vertical-align: top;"> <u>Private</u> <ul style="list-style-type: none"> <li>• Briefing and training participation fee</li> <li>• Fallow land nectar cultivation</li> </ul> </td> </tr> </table>	<u>Administration</u> <ul style="list-style-type: none"> <li>• Educational activity expenses</li> <li>• Fallow land honey source pilot project cost</li> </ul>	<u>Private</u> <ul style="list-style-type: none"> <li>• Briefing and training participation fee</li> <li>• Fallow land nectar cultivation</li> </ul>
<u>Administration</u> <ul style="list-style-type: none"> <li>• Educational activity expenses</li> <li>• Fallow land honey source pilot project cost</li> </ul>	<u>Private</u> <ul style="list-style-type: none"> <li>• Briefing and training participation fee</li> <li>• Fallow land nectar cultivation</li> </ul>		

	<ul style="list-style-type: none"> <li>• Subsidy for cultivation of fallow land for nectar</li> <li>• Cost of conducting research to improve productivity through pollen cross pollination</li> <li>• Support expenses for pesticide information sharing system</li> <li>• Expenses for development of honey product sales bases</li> <li>• Branding and product sales training expenses</li> </ul>	<ul style="list-style-type: none"> <li>• expenses</li> <li>• Product development and sales promotion expenses</li> <li>• Sales office operating expenses</li> </ul>
Project Cost	Total project cost: 18.9 Million MNT (719,000 USD)	
Beneficiary Effects/Impacts	Increased honey production (20%: USD 295,000) due to the stabilization of the honey source. The tourist market is expected to generate USD 1,440,000 in sales of honey and processed honey products, and an annual economic impact of USD 16,000 in sales at the sales outlets and job creation in the production of processed products. Crop productivity will increase (25%).	
Consistency with Policy	<ol style="list-style-type: none"> <li>1. Vision 2050 6.2.8. Implement national programs to conserve soil, prevent land degradation, and combat desertification.</li> <li>2. Vision 2050 6.4.8. increase the absorption rate of greenhouse gases through afforestation, peatland protection, restoration of degraded lands, conservation of vegetation, and green flowering.</li> <li>3. 5-Year Basic Policy (2021-2025) 3.3.4. Improve tourism products, services, their quality and standards to increase competitiveness and increase individual and corporate income.</li> <li>4. Five-Year Basic Policy (2021-2025) 6.2.1. Protect soil fertility and moisture content, prevent land degradation, soil pollution and desertification, and regenerate (restore) and use degraded and destroyed land.</li> </ol>	
Remarks	<ul style="list-style-type: none"> <li>• Nectar plants to be sown in fallow fields should contribute to soil improvement by providing green manure, require no cultivation, have a high nectar flow rate, and have seeds available. It is preferable if they are native to Mongolia.</li> <li>• The fallow fields to be used should preferably be rape fields or fruit and vegetable fields. (Buckwheat honey will reduce the commercial value of honey.)</li> <li>• In order to maintain good communication between beekeepers and companies, a representative of the Agricultural Administration of each AIMAG or SOM should conduct regular monitoring of activities.</li> <li>• Collaborate with JICA Tourism Advisor; work with JICA grassroots projects if any similar projects are available.</li> <li>• For collaboration &amp; cooperation with the tourism sector, actively involve both domestic and international travel agencies. Be proactive in developing tourism resources, such as attracting tourists to the nectar sources.</li> </ul>	

Project Implementation Schedule and Budget

Activities	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total	
(1) Produce honey using nectar sources from fallow fields.												
(2) Produce honey using nectar sources from foraging areas.												
(3) Expand honey sales in the tourist market.												
Project cost (Total)	Mil MNT	223	233	201	225	193	183	158	158	158	158	1,890
	Thousand USD	86	90	76	85	73	69	60	60	60	60	719

**BOX: Other Industries and Beekeeping**



Honey dishes and drink

**Case "Tourism x Beekeeping":** In the Honey Week organized by MONMAP-AVC in November 2021, 12 companies and 14 restaurants in Ulaanbaatar participated, offering honey dishes and honey drinks to visitors. Eight (8) of the twelve (12) companies are still serving honey dishes and drinks, and another five companies have confirmed that they opted to purchase domestic honey. This summer, a Japanese travel agency conducted a beekeeping tour of Mongolia. Honey dishes from participating Honey Week restaurants were served to the tourists as meals during their stay in Ulaanbaatar. Small & easy-to-carry packages of honey were popular as souvenirs.

**Case "Agriculture x Beekeeping":** In Japan, honeybees are utilized for pollen cross pollination of strawberries, melons, and cucumbers with the use of approximately 125,000 bee colonies (as of 2014). In Japan, the economic contribution of pollination to crop cultivation is estimated to be approximately 670 billion yen, of which 180 billion yen is contributed by domesticated honeybees. Beekeeping is an important part of agricultural production. Each aimag and the Ministry of Agriculture, Forestry and Fisheries cooperate to collect and analyze information on demand from horticultural farmers and supply from beekeeping farmers, and adjusting the supply and demand of bees for pollen mating. A manual on the use of honeybees is also available for horticultural farmers.

In Mongolia, the Supreme Council of the Mongolian Beekeeping Association in 2019 conducted a demonstration study in Selenge aimag, which confirmed that placing 1-2 bee swarms per hectare in oilseed rape fields can increase oilseed rape productivity by 50% and thus, contribute to increased profitability of fruit crops and forage legumes.

**4.2.7 Other agricultural supply chain enhancement program – mushroom and fish**

**Other Agricultural Supply Chain Enhancement Program - Mushroom**

Although the consumption and production of mushrooms is currently low in Mongolia, demand is expected to increase in the future as a healthy food. Therefore, in order to strengthen the domestic supply chain of mushrooms, which is dependent on imports, we recommend 1) promotion of research and dissemination of mushroom production technology, 2) development of a national standard for mushrooms, and 3) educational activities to increase consumption. Note that these efforts are considered common initiatives for minor crops and foods other than mushrooms.

	Input	Production	Processing	Distribution	Selling
Actor	Spawn, mycelium, and substrate producers	Producers, associations, corporations	Food processors	Middlemen, distributors, exporters	Retailers, restaurants
Major issues	There are few types of mushrooms suitable for Mongolia. It is difficult to procure materials and equipment.	Appropriate technology for mushroom production is not established yet. It is necessary to provide technical training to increase the number of producers.	Mushroom packing methods need to be improved. In addition, food development and production using domestic mushrooms is required.	It is necessary to develop a domestic mushroom handler.	Enlightening activities are needed to increase consumption of mushrooms, which contribute to better health.
Counter-measures	7.1 Action Plan on promoting research and dissemination of mushroom production technology		7.2 Action Plan on establishing national standards for mushroom production		7.3 Action Plan on enlightening of mushroom consumption

Figure 4.8 Mushroom supply chain enhancement program

Source: JICA Project Team

Although the consumption of mushrooms is low in Mongolia and the domestic production volume and variety of mushrooms are limited, this product is identified as one that is expected to expand in the future. To strengthen the mushroom supply chain, the following recommendations are made: 1) promoting research and

dissemination on mushroom production technology, 2) establishing national standards for mushroom production, and 3) educating the public to increase mushroom consumption. The relevance of these development plans focusing how well they address challenges or exploit strengths and opportunities, as well as how well they align with development guidelines, is summarized in the table herein below.

Table 4.7 Relevance of the mushroom supply chain enhancement program and development directions

Specific issues, strengths, and development guidelines	Mushroom Supply Chain Enhancement Program			
	7.1	7.2	7.3	
<b>issues</b>	Insufficient research on types and varieties of mushrooms suitable for Mongolia	⊙		
	Standards for mycorrhiza production are not yet in place		⊙	
	Limited to a small number of mycelium producers	○	○	
	Limited scale of mycelial production	○	○	
	Standards for mycelia production not yet in place		⊙	
	Limited to a small number of mushroom producers	○	○	
	Supply system for culture media and equipment necessary for mushroom production is not yet in place.	○	○	
	Mushroom production standards not yet in place		⊙	
	Domestic consumption of mushrooms is very low			⊙
	Inadequate processing and distribution system for domestic mushrooms		○	○
<b>Strengths/Opportunities</b>	A mushroom production and marketing system has been established by the Mushroom Association.	⊙	○	
	Private companies have begun full-scale mycelial production.	⊙	○	
	The number of general mushroom producers is increasing due to the implementation of training and guidance.	⊙	○	
	There are mushroom researchers and leaders in the country and a growing number of university students	⊙	○	○
	A private company has been established to handle mushroom production equipment and materials.	○		
	Food processors exist in the country.	○	○	○
<b>Direction of Development</b>	1-1-1 Strengthening Seed Production System for Grains and Oil Crops			
	1-1-2 Promotion of superior seeds and varieties	⊙	○	
	1-1-3 Training of seed producers	○		
	1-1-4 Promotion of Water Resources Development/Irrigation Development			
	1-1-5 Promotion of Agricultural Mechanization			
	1-1-6 Expansion of greenhouse facility development			
	1-1-7 Dissemination of appropriate cultivation techniques	⊙	○	
	1-1-8 Diffusion of Market-Oriented Agriculture to Small Farmers	○	○	
	1-1-9 Promotion of Promotional Cultivation Technology			
	1-1-10 Establishment of agricultural product distribution (storage) system by agricultural cooperatives	○	○	
	1-1-11 Promoting Contract Cultivation with Food Processing Companies		○	
	1-1-12 Dissemination of Simple Food Processing Technology to Small Farmers	○	○	
	1-1-13 Conducting educational activities related to nutrition and food safety, etc.			⊙
	1-1-14 Cluster Promotion	⊙	○	

○: strongly linked, ⊙: very strongly linked

Source: JICA Project Team

The following is a summary of each plan.

### Action Plan on Promoting Research and Dissemination of Mushroom Production Technology

It is necessary to develop production technology for mushrooms suitable for Mongolia's environmental

conditions. This plan involves the selection of appropriate products and varieties with the support of research conducted by the University of Life Sciences and the Academy of Sciences. Based on the results obtained, the public and private sectors will collaborate and cooperate to further stimulate dissemination and guidance to mushroom producers and expand commercial production of mushrooms.

### Action Plan on Establishing National Standards for Mushroom Production

In order to expand domestic production of mushrooms, it is essential to properly manage the production process in order to achieve profitable sales, and it is desirable to establish a production system in accordance with appropriate standards. Initially, the first step is to accumulate quality data within producer organizations and production companies. As the scale of production expands and more information is accumulated, the government will support the establishment of a national standard based on this data with MASM certification and mechanism of appropriate implementation.

### Action Plan on Enlightening of Mushroom Consumption

The consumption of mushrooms is still very low in Mongolia and there is much potential to expand consumption in line with changes in dietary habits. For this purpose, it is desirable to create widespread public awareness of the nutritional and functional benefits of mushrooms and the superiority of domestic produced mushrooms over imports. It is also important to strengthen cooperation with retailers and food processors to ensure a stable supply. The government should support public relations activities at public events and facilitate business matching opportunities.

#### (1) Action Plan on Promoting Research and Dissemination of Mushroom Production Technology

A/P 7-1: Action Plan on Promoting Research and Dissemination of Mushroom Production Technology			
Objective	Promote production and distribution of mushrooms suitable for the Mongolian environment to replace imports.		
Goal of A/P	Mushroom production technology suitable for the Mongolian environment is developed and widely spread.		
Target area	All of Mongolia		
Expected Outcomes	(1) Efficient production techniques for mushrooms suitable for Mongolia are developed. (2) Mushroom cultivation techniques are widely disseminated.		
Activities	(1) Research and develop production techniques for mushrooms suitable for Mongolia. Support the University of Life Sciences, Academy of Sciences, etc. to conduct research and development on mushroom cultivation techniques according to the environment and available materials in Mongolia, and compile them into technical manuals. (2) Identify mushroom items and varieties suitable for the Mongolian environment Support activities to study the feasibility of cultivating other mushrooms (shiitake, enoki, shimeji, etc.) that are grown domestically, such as hiratake and eringi mushrooms, but also reliant on imports. (3) Disseminate mushroom cultivation techniques widely to general producers. In cooperation with mushroom producer organizations, provide technical training for general producers of mushrooms. In addition, the project will support the establishment of a supply system for equipment and materials necessary for production.		
Input	<table border="0"> <tr> <td style="vertical-align: top;"> <u>Administration</u> <ul style="list-style-type: none"> <li>• Support for research and development related to mushrooms</li> <li>• Support for implementation of mushroom technical training</li> </ul> </td> <td style="vertical-align: top; padding-left: 20px;"> <u>Private</u> <ul style="list-style-type: none"> <li>• Conducting technical training on mushrooms</li> </ul> </td> </tr> </table>	<u>Administration</u> <ul style="list-style-type: none"> <li>• Support for research and development related to mushrooms</li> <li>• Support for implementation of mushroom technical training</li> </ul>	<u>Private</u> <ul style="list-style-type: none"> <li>• Conducting technical training on mushrooms</li> </ul>
<u>Administration</u> <ul style="list-style-type: none"> <li>• Support for research and development related to mushrooms</li> <li>• Support for implementation of mushroom technical training</li> </ul>	<u>Private</u> <ul style="list-style-type: none"> <li>• Conducting technical training on mushrooms</li> </ul>		

Project Cost	Total project cost: 550 Million MNT (209,000 USD)
Beneficiary Effects/Impacts	Increase in the number of mushroom producers (currently about 50 to 500)
Consistency with Policy	<ol style="list-style-type: none"> <li>1. Vision 2050; Objective 2.5 Favorable Living Environment, and Objective 8.2 Sustainable Agriculture</li> <li>2. Resolution No. 36 of the Grand National Assembly of Mongolia</li> <li>3. Food Revolution: Positioned as a crop category equivalent to the goal of achieving 100% domestic self-sufficiency by 2027.</li> </ol>

**Project Implementation Schedule and Budget**

Activities	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total	
(1) Development of production technology												
(2) Identification of appropriate items and varieties												
(3) Technology dissemination												
Project cost (Total)	Mil MNT	70	70	70	70	70	40	40	40	40	40	550
	Thousand USD	27	27	27	27	26	15	15	15	15	15	209

- MOFALI support for research and development (excluding the costs of the research institute) shall be approximately 30 mil. MNT.
- MOFALI support expenses for training shall be approximately 10 mil. MNT and private training related expenses shall be about 30 mil. MNT.

**BOX: Shiitake Mushroom Test Production**

Imported Shiitake mushrooms are in high demand, and cultivation trials were conducted to see if they could be produced in Mongolia with available materials. These trials were conducted with the cooperation of mushroom researchers from the Mongolian University of Life Sciences. The results of comparative tests conducted by combining several varieties of seed fungi ordered from overseas with various fungal bed materials available in Mongolia, showed that shiitake production was possible under certain conditions. However, the productivity is not high enough at the present stage, so the tests need to be continued in order to find the conditions that would enable commercial production.



**(2) Action Plan on Establishing National Standards for Mushroom Production**

A/P 7-2: Action Plan on Establishing National Standards for Mushroom Production	
Objective	Promote production and distribution of mushrooms suitable for the Mongolian environment to replace imports.
Goal of A/P	Standard for Mongolian Domestic Mushrooms Established
Target area	All of Mongolia (especially UB)
Expected Outcomes	<ol style="list-style-type: none"> <li>(1) Internal standards are set for mushroom producer associations.</li> <li>(2) National Standard Criteria for Mushroom Production Established</li> </ol>
Activities	<ol style="list-style-type: none"> <li>(1) Develop rules as internal standards for mushroom producer associations. We will assess the situation regarding the quality of mushrooms grown in the country and, based on this, will guide the establishment of standards among the parties concerned. We will monitor the production of mushrooms of a certain level of quality according to these standards.</li> <li>(2) Develop a national standard for mushrooms</li> </ol>

	Based on the operation of standards among mushroom producers, a Mongolian national standard will be established to further gain market confidence and expand sales favorably. The government will support the process. Monitoring will be carried out to ensure that the quality of the mushrooms produced is in accordance with these standards.	
Input	<u>Administration</u> <ul style="list-style-type: none"> <li>Assistance in setting national standards for mushrooms</li> </ul>	<u>Private</u> <ul style="list-style-type: none"> <li>Development and monitoring of standard regulations within producers</li> <li>Developing and monitoring national standards for mushrooms</li> </ul>
Project Cost	Total project cost: 365 Million MNT (138,000 USD)	
Beneficiary Effects/Impacts	Confidence in domestic mushrooms will grow and sales will increase. The average sales price per kg of mushrooms is assumed to be 10,000 MNT and the current estimated production of 10 tons is expected to increase to 100 tons. Therefore, the sales value will be increased from 100 million MNT to 1,000 million MNT.	
Consistency with Policy	<ol style="list-style-type: none"> <li>Vision 2050; Objective 2.5 Favorable Living Environment, and Objective 8.2 Sustainable Agriculture</li> <li>Resolution No. 36 of the Grand National Assembly of Mongolia</li> <li>Food Revolution: Positioned as a crop category equivalent to the goal of achieving 100% domestic self-sufficiency by 2027.</li> </ol>	
Remarks	<ul style="list-style-type: none"> <li>Although the private sector is the main actor in the establishment and operation of standards, a certain degree of government support is considered necessary. MASM is the certifying body for standards, and MOFALI will provide support for certification and monitoring.</li> </ul>	

#### Project Implementation Schedule and Budget

Activities		2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
(1) Producer Criteria Creation												
(2) Producer Criteria Monitoring												
(3) Creation of national standards												
(4) National Criteria Monitoring												
Project cost (Total)	Mil MNT	60	10	120	25	25	25	25	25	25	25	365
	Thousand USD	27	3	45	9	9	9	9	9	9	9	138

- Upper row of figures shows administrative costs, lower row shows private costs.

#### **BOX: Study of Mushroom Standards**

In order to apply to MASM for registering standard for domestic mushrooms, MONMAP-AVC have prepared a draft standard for Mongolia with reference to standards in other countries, and have been holding meetings with experts in this regard. However, due to the lack of information on the current status of Mongolian domestic mushrooms in terms of specific values and data to be used as standards, and the fact that the urgency of establishing a national standard is not high due to the current scale of mushroom production, it was decided that a preparation period would be set aside for a while. During the preparation period, analytical data on current mushrooms will be collected and used as a standard unique to the mushroom producers' association. Subsequently, it is envisioned to formally apply to MASM for a national standard.

For agricultural and livestock products with high added value but not yet produced in large quantities, it is recommended that instead of establishing national standards from the beginning, producer organizations first accumulate relevant information / data and operate under their own standards, and then formally apply to MASM for national standards..

### (3) Action Plan on Enlightenment to Increase Consumption of Mushrooms

<b>A/P 7-3: Action Plan on Enlightening of Mushroom Consumption</b>	
Objective	Promote production and distribution of mushrooms suitable for the Mongolian environment to replace imports.
Goal of A/P	Increased consumption of mushrooms within Mongolia
Target area	All over Mongolia (especially in the suburbs of cities)
Expected	Consumers' eating habits improve.

Outcomes		
Activities	<p>(1) Develop publicity materials on the functionality of mushrooms.</p> <p>As the nation's diet improves with economic development, create publicity materials on the functionality of mushrooms for general consumers. Disseminate information through the mass media and industry associations' websites.</p> <p>(2) Conduct educational activities to increase consumption of mushrooms.</p> <p>Conduct public relations activities related to mushroom consumption at various events. In addition, conduct tasting campaigns at retail stores and restaurants. In relation to children's dietary education, consider including mushrooms in school lunch menus.</p> <p>(3) Strengthen partnerships with retailers and food processors</p> <p>Promote the matching of retailers and food processors with mushroom producers and establish a system that allows for planned and contracted production.</p>	
Input	<p><u>Administration</u></p> <ul style="list-style-type: none"> <li>Campaign to improve dietary habits (including school lunches)</li> </ul>	<p><u>Private</u></p> <ul style="list-style-type: none"> <li>Disseminating information through the media and websites</li> </ul>
Project Cost	Total project cost: 400 Million MNT	
Beneficiary Effects/Impacts	Consumption of mushrooms will increase from approximately 1,000 tons (at 2022) to 5,000 tons	
Consistency with Policy	<p>1. Vision 2050; Objective 2.5 Favorable Living Environment, and Objective 8.2 Sustainable Agriculture</p> <p>2. Resolution No. 36 of the Grand National Assembly of Mongolia</p>	
Remarks	<ul style="list-style-type: none"> <li>Although there are no official statistics on mushroom consumption, it is estimated that 827 tons of mushrooms consumed annually in the Ulaanbaatar, and it is assumed national consumption to be around 1,000 tons.</li> </ul>	

Project Implementation Schedule and Budget

Activities	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
(1) Creation of mushroom publicity materials											
(2) Consumer awareness activities											
(3) Promote collaboration with vendors											
Project cost (Total)	Mil MNT	105	105	80	80	30					400
	Thousand USD	41	40	30	30	11					152

**BOX: Public Relations for Mushrooms**

In Mongolia, mushroom researchers and consultants operate a website called Muug.mn, that disseminates general information about mushrooms, including content and news on production and consumption, and engages in public relations activities. MONMAP-AVC is working with this website to create video content related to the latest mushroom production information and home cooking methods, and to support the active dissemination of this information with the aim of increasing the number of producers and consumption.

In addition, the company has actively participated in various events, offering tastings of domestic mushrooms, which have been well received by many participants. In the course of such activities, a private TV station has approached them for a series of special programs on mushrooms, and it is hoped to strengthen such PR activities utilizing the mass media in the future.



#### (4) Raw fish supply chain enhancement program

##### Other Agricultural Supply Chain Enhancement Program - Fish

Although Mongolia is an inland country, it has several lakes with an area of more than 500km<sup>2</sup> and an abundance of underutilized fishery resources. Domestic demand for fishery products is increasing due to the growing health consciousness of the people and the globalization of food. Fish processing technology is underdeveloped and there are few specialized companies or experts. It is necessary to set catch quotas based on periodic resource surveys and to conduct planned resource use under resource management that incorporates aquaculture. This programme aims to increase domestic fish consumption by stimulating fish consumption through nutrition education for the public and the supply of easy-to-cook processed foods.

	Input	Production	Processing	Distribution/Export	Sales/Consumption
Actors	Fishing materials, Processing equipment, Storage facilities	Fishermen, Fish processors, Aquaculture cooperatives/NGOs	Fish Processors	Fish processors and distributors	Retail stores, restaurants, etc.
Major issues	No processing and storage facilities and need to be built from scratch. Processing equipment depends on imports and is difficult to procure in rural areas.	The fishing period is limited and year-round fishing is impossible. Regular resource surveys and introduction of aquaculture are necessary to avoid resource depletion due to overfishing.	Lack of processing equipment or immature processing skills. Fewer types of processed products.	It is difficult to supply the products all year round due to inadequate refrigeration facilities for storing raw materials and processed products.	Need to expand consumption by selling processed products and introducing cooking methods. There is a need for domestic fish, but the supply is insufficient.
Counter-measures	<b>7.4 Action Plan on developing fish processing facilities aimed at promoting fish diets.</b>				

Figure 4.9 Raw fish supply chain enhancement program

Source: JICA Project Team

The production of raw fish in Mongolia is limited. The number of processing facilities and the amount of fish consumed by the population are also limited. We propose a raw fish development program to meet the increasing demand for fish due to the promotion of healthy eating habits in recent years and to utilize underutilized fish resources. Since the domestic raw fish supply chain is still in its infancy, the program is comprehensive, covering all stages from production to consumption. The main activities of the "production stage" are to conduct resource surveys to avoid resource depletion, the "processing stage" is to strengthen the processing system by improving processing facilities, the "distribution stage" is to improve frozen storage facilities, and the "sales and consumption stage" is to provide nutrition education to the public. Based on the results of existing fish stock surveys, three lakes (Lake Buir, Dornod; Lake Ugii, Arkhangai; and Lake Tolbo, Bayan-Ulgii) were selected as the most suitable sites for these activities.

A/P 7-4 : Action Plan on Developing Fish Processing Facilities Aimed at Promoting Fish Diets	
Objective	The use of fish from the country's lakes as a food source will be established and the food of the local population will be diversified.
Goal of A/P	Two domestic fish processing facilities will be established in Mongolia to ensure a stable supply of fish products to the local population.
Target area	Lake Buir, Dornod Aimag; Lake Ugii, Arkhangai Aimag; other lakes with abundant fish stocks (e.g. Lake Tolbo, Bayan-Ulgii aimag)
Expected Outcomes	<ol style="list-style-type: none"> <li>(1) Implementation guidelines necessary for the this plan are prepared, and the implementation guidelines are explained to the targeted aimag and soum's Department of Agriculture and Department of Nature, Environment and Tourism.</li> <li>(2) Business operator will be selected to implement the fish processing.</li> <li>(3) Fish processing plants of the selected businesses will be established and fish processing will begin.</li> <li>(4) Fish diets are established in the local population (annual per capita intake in the region increased from 0.18 kg to 0.3 kg).</li> <li>(5) Fish products are recognized throughout the country as a regional specialty.</li> <li>(6) Periodic surveys of the lake's fish stocks will be conducted to indicate the appropriate amount of fish that can be caught.</li> </ol>
Activities	<ol style="list-style-type: none"> <li>(1) Prepare the implementation guidelines necessary for this plan, and explain the such guidelines to the targeted aimag and soum's Department of Agriculture and Department of Natural Environment and Tourism.</li> </ol>

	<p>The Coordination Office for Food Production and Development Policy of the Ministry of Food, Agriculture, Pasture and Light Industry and the Small and Medium Enterprises Agency will take the lead in preparing the implementation guidelines necessary for this plan, in cooperation with the Department of Flora, Fauna and Natural Resources and the Department of Protected Areas Management of the Ministry of Nature, Environment and Tourism, with reference to the work of the Mongolian Chamber of Commerce and Industry Uvs Branch and Sansar Uguuj Company in the Khyargas Lake in 2022 at Zavkhan soum, Uvs aimag. Briefing sessions on the developed implementation guidelines will be held for the targeted aimag, soum and the Department of Nature, Environment and Tourism.</p> <p>(2) Select a business to implement fish processing.</p> <p>Identify and select lakes where fishing for commercial purposes is possible in cooperation with the Department of Flora, Fauna and Natural Resources and the Department of Protected Areas Management of the Ministry of Nature, Environment and Tourism. Local companies and organizations that wish to operate fish processing businesses in the selected lakes will be invited to submit applications, and the selection of operators will be made after consultation with soum, and the fishery licensee for the lakes. The selected business operator will enter into a voluntary contract to provide foodstuffs to local school lunch programs.</p> <p>(3) Fish processing plants of the selected businesses will be established and its operation will begin.</p> <p>Financial assistance will be provided for the purchase of equipment necessary for the production of fish products and the maintenance of the processing plant environment. The production of fish products and the development of processing plants shall be in accordance with the fish product standards "MNS 5170:2002 Fish and Fish Products. Inspection Methods" and "MNS CAC RCP 52:2011 Regulations for the Handling of Fish and Fish Products". Provide training for operators to acquire knowledge and skills in handling freshwater fish. The implementation of this training will be supported by the Mongolian Fish and Aquatic Breeders Association NGO.</p> <p>(4) Promotion of fish eating to the local population.</p> <p>Introduce fish dishes in local school lunches. Provide fish-eating and environmental education to school children with nature conservation officers who manage the lake's fishery resources as instructors.</p> <p>(5) Promote fish products in Mongolia as a local specialty.</p> <p>Establish a local specialty product certification system in cooperation with the department in charge of regional development in AIMAG, the Department of Natural Environment and Tourism, and private companies. Position fish products as regional specialties and conduct domestic publicity. Create a map of local specialty products in each aimag. Conduct joint PR activities with other aimags that handle fish products to promote the product on a larger scale.</p> <p>(6) Conduct periodic surveys of the lake's fish stocks to determine the amount of fish that can be caught.</p> <p>Conduct periodic surveys of fish stocks in the lake in cooperation with aimag and soum, the Department of Flora, Fauna and Natural Resources and the Protected Areas Management Department of the Ministry of Nature, Environment and Tourism, which have jurisdiction over the lake, and the Mongolian Fish and Aquatic Breeding Association NGO.</p>	
Input	<p><u>Administration</u></p> <ul style="list-style-type: none"> <li>• Central and local government officials (daily allowance and transportation)</li> <li>• Exemption from equipment procurement costs and customs duties for processing plant facilities</li> <li>• Fish stock survey expenses</li> <li>• Food and environmental education expenses at local schools (teacher and teaching materials)</li> <li>• Subsidies for the use of local foods in school lunches</li> </ul>	<p><u>Private</u></p> <ul style="list-style-type: none"> <li>• Processing plant maintenance costs</li> <li>• Fish raw material procurement and processing costs</li> <li>• Sales promotion and public relations expenses</li> <li>• Technical training expenses for handling freshwater fish</li> </ul>
Project Cost	Total project cost: 1,025 Million MNT (390,000 USD)	
Beneficiary Effects/Impacts	The total annual catch potential for each lake is 80 tons: 45 tons for Lake Buir, 20 tons for Lake Ugii, and 15 tons for Lake Tolbo. The total price of the new product (vacuum-packed) produced from these resources is 544,000,000 MNT. In addition, it is estimated that each processing plant will create 3 jobs x 12 months (28,800,000 MNT). In addition, the annual fish consumption per local resident will increase to 0.3 kg.	

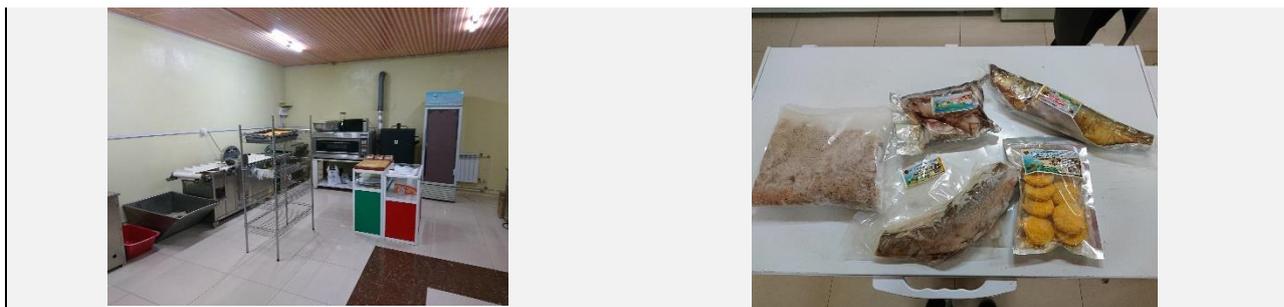
Consistency with Policy	<ol style="list-style-type: none"> <li>1. Vision 2050 6.2.6.1 Increase the diversity of tourism products and services.</li> <li>2. Vision 2050 6.2.7.1 Create a cultural brand that expresses the special characteristics of the region's natural monuments and historical and cultural heritage.</li> <li>3. Mongolian State Grand Council No. 36, 5.6.2 Provide tax support in the form of exempting machinery and equipment in food processing plants from customs duties, postponing tax payment deadlines, etc.</li> <li>4. Mongolian National Grand Council No. 36 5.10.3 Implement targeted projects to improve the public's knowledge of diet and food.</li> <li>5. Safe and Healthy Food/Healthy Mongolian Program Objective 1.3 Support fish and poultry industry</li> <li>6. Safe and Healthy Food/Healthy Mongolians Program Objective 1.6 Implement tax and non-tax adjustments to support domestic food production</li> <li>7. Safe and Healthy Food/Healthy Mongolian Program Objective 4.8 Sustainably develop local specific food production</li> <li>8. Safe and Healthy Food/Healthy Mongolians Program Objective 4.6 Diversify domestically manufactured food purchased with national and local budgets</li> <li>9. Food Revolution, a Presidential Initiative</li> </ol>
Remarks	<ul style="list-style-type: none"> <li>• Preventing the depletion of the lake's fisheries resources is a top priority, and this project should be suspended if a reliable stock assessment cannot be conducted.</li> <li>• What is important in fish conservation is to avoid overfishing, to identify fish spawning areas and preserve those areas as no-take zones, and to establish a period when fishing is not allowed.</li> <li>• If necessary, a frozen warehouse will be maintained to store raw materials during the closed season.</li> </ul>

Project Implementation Schedule and Budget

Activity	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total	
(1) Prepare the system and implementation guidelines necessary for the implementation of the plan												
(2) Select a business to implement fish processing.												
(3) Fish processing plants of the selected businesses will be established and fish processing will begin.												
(4) Promotion of fish eating to local residents.												
(5) Promote fish products as local specialty products.												
(6) Conduct periodic surveys of the lake's fish stocks to determine the appropriate amount of fish that can be caught.												
Project cost (Total)	Mil MNT	55	136	108	108	103	103	103	103	103	103	1,025
	Thousand USD	23	51	41	41	39	39	39	39	39	39	390

**BOX: Fish Processing Facility Improvement Project**

A fish processing facility was constructed and fish processing equipment was tested at Khyargas Lake in Uvs aimag. The fish resources, which had not been effectively utilized until now and were only consumed by local residents for personal use, have enabled commercialization through newly built integrated processing facilities. However, new issues were identified, such as the need to adjust activities to comply with laws and regulations regarding the protection of the lake's natural environment, and the need for storage facilities due to the limited fishing period.



#### 4.2.8 Strengthening quality and sanitation management systems for agro-pastoral products program

### Strengthening quality and sanitation management systems for agro-pastoral products program

The administrative structure for sanitation management is being reorganized, and the roles of each agency are not clear, despite the need to raise the overall level of sanitation management. Immediate restructuring of the administrative structure is needed to provide appropriate corporate support. While sanitation management is one of the most important trade conditions, there are limitations in the analytical capacity of inspection laboratories. In addition, to promote exports, it is necessary to introduce international-level quality control and food safety certification to strengthen competitiveness.

Actor	Government Agencies	Inspection laboratories	Public interests organizations (accreditation & certification bodies, etc.)	Companies, producers
Major issues	There is no agency responsible for the coordination function of relevant ministries and agencies. Administrative agencies involved in food safety are undergoing reorganization. Lack of specialized human resources.	Lack of analytical equipment and reagents. Some companies are dissatisfied with sampling and laboratory services. Documentation capacity is low. Although international accreditation has been obtained, they are not trusted by importing countries.	There is a problem with the audit capability of the certification body. Lack of consultants for certification. Lack of resources to train company personnel.	Insufficient information collection and difficulties in trade procedures. There is wide variation in efforts to introduce international certification, traceability, etc. Human resource development within companies is lagging.
Counter-measures	<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="border: 1px solid black; background-color: #004a7c; color: white; padding: 5px; width: 30%; text-align: center;">8.1 Action Plan on strengthening the capacity of food safety administration</div> <div style="border: 1px solid black; background-color: #004a7c; color: white; padding: 5px; width: 30%; text-align: center;">8.2 Action Plan on strengthening export inspection capacities</div> <div style="border: 1px solid black; background-color: #004a7c; color: white; padding: 5px; width: 30%; text-align: center;">8.3 Action Plan on training human resources in sanitation and quality control</div> <div style="border: 1px solid black; background-color: #004a7c; color: white; padding: 5px; width: 30%; text-align: center;">8.4 Action Plan on strengthening export competitiveness through acquisition of international certification</div> </div>			

Figure 4.10 Strengthening quality and sanitation management systems for agro-pastoral products program  
Source: JICA Project Team

Mongolia is currently in the process of reorganizing its administrative structure for sanitation and quality control, which needs a restructuring as soon as possible. In order to manage at the international level, the overall system must be enhanced, including inspection capacity. Although laws are in place, corporate support is limited, and the burden on SMEs to perform quality control at the international level is quite heavy. There are need of expert personnel who can assist companies in this regards.

Table 4.8 Relevance of strengthening quality and sanitation management systems for agro-pastoral products program and development directions

	Specific issues, strengths, and development guidelines	Strengthening Quality and Sanitation Management Systems for Agro-pastoral Products Program				
		8.1	8.2	8.3	8.4	8.5
<b>issues</b>	Administrative agencies are not fully capable of managing	⊙	○	○	○	
	Insufficient training of inspection agencies.	○	⊙		○	○
	Limited quality assurance at the international level	○	○		○	⊙
	Lack of corporate capacity	○			⊙	○
<b>Direction of Development</b>	Improving Food Safety Management Systems	⊙	○			
	Strengthening the capacity of food and product inspection agencies	○	⊙	○	○	
	Training of sanitation and quality control personnel in the private sector	○		○	⊙	○
	Promote acquisition of international certification		○		○	⊙

○: strongly linked, ⊙: very strongly linked

Source: JICA Project Team

Under " **Action Plan on Strengthening the Capacity of Food Safety Administration** " the roles and legal basis of administrative agencies involved in the food safety system will be organized, and each agency will develop and implement a risk management and monitoring plan. The plan aims to clarify the roles and responsibilities of agencies involved in food safety and sanitation management, to establish a system for continuous improvement of sanitation and quality management capacity, and to improve the capacity of administrative personnel in the field of food safety to enable them to take appropriate measures.

The purpose of " **Action Plan on Strengthening Export Inspection Capacities** " is to strengthen the inspection capacity required for export of agricultural and pastoral products. A system to regularly update quarantine information will be established, and the equipment of inspection agencies will be improved to ensure that export inspections can be carried out properly. To systematically improve equipment and the capacity of inspectors so that necessary inspections can be carried out efficiently, strengthen the testing capabilities of inspection agencies and expand the acquisition of international accreditation.

The " **Action Plan on Preparatory Survey for Post-harvest Reduction** " will identify the actual situation of food losses from post-harvest to distribution, and design a food loss reduction plan. Since the actual situation of post-harvest losses has not yet been fully understood, through this plan, food products and supply chain stages with particularly high food loss rates will be identified, and food loss reduction plan to reduce the losses of such food products will be developed

Under " **Action Plan on Training Human Resources in Sanitation and Quality Control** " a hygiene and quality control trainer system will be developed and trainers will be trained who will help to improve the hygiene and quality control capabilities of private companies. Establishing and operating quality control system is generally not linked with the price of the product and hence, require to spend upfront cost. Compared to large enterprises that have more financial resources, SMEs tend to lag behind in their quality control efforts and often lack departments and personnel specializing in quality control. A/P 8.4 aims to create an environment where a continuous human resource development system is in place and SMEs can obtain international certifications such as HACCP and FSSC22000.

In parallel to the activities for improving the capacity of private companies in A/P 8.4, the " **Action Plan on Strengthening Export Competitiveness through Acquisition of International Certification** " will lead to the acquisition of international certifications that are valid in the export target markets to expand exports. International certifications that are advantageous for Mongolian agro-pastoral products exports will be identified, and the system for international certifications will be strengthened. At the same time, the certification bodies will be strengthened, including increasing the number of auditors and improving their auditing capacity. In addition, support will be provided to companies those are willing to obtain certification.

**(1) Action Plan on Strengthening the Capacity of Food Safety Administration**

<b>A/P 8-1: Action Plan on Strengthening the Capacity of Food Safety Administration</b>	
Objective	Raise the level of food hygiene and quality control functions
Baseline of A/P	No policy assessment based on risk management plan
Goal of A/P	The results of the policy evaluation based on the risk management plan are published annually.
Target area	Whole country
Expected Outcomes	The roles and responsibilities of agencies involved in food safety and sanitation will be clearly defined and the basis for administrative activities will be established. A system for continuous improvement of sanitation and quality control capacity will be established, and administrative personnel will become more competent in the field of food safety and will be able to take appropriate measures.
Activities	<p>(1) Organize the roles of the agencies involved in the food safety system and ensure that they have a discussion forum for food safety.</p> <p>Organize and clarify terms of reference related organizations (GAVS, SME Agency, MASM, Ministry of Environment, quarantine stations, private food inspection agencies, and other related organizations) In organizing terms of reference, overseas systems and cases should be investigated, analyzed, and utilized as models. Establish a committee with the participation of relevant organizations to discuss food safety on a regular basis.</p> <p>(2) Identify deficiencies in the legal system, revise and improve the legal system as and when necessary.</p> <p>Review the current legal system and develop laws and regulations to ensure each terms of reference.</p> <p>(3) Each administrative agency will develop a risk management plan based on the terms of reference.</p> <p>Each government agency will develop a risk management plan to ensure effective and timely implementation of measures. As one of the risk management methods, MOFALI will urgently develop GAP and other norms that are missing. The risk management agency will monitor the company's food hygiene and quality management efforts, including the implementation of GAP, GHP, and GMP, and will develop an evaluation monitoring plan. The agency in charge will allocate personnel and budget for monitoring in accordance with the terms of reference. If any violations are found as a result of the monitoring, the agency will take pre-established measures such as reporting, enforcing recalls, providing guidance, and imposing penalties. Establish a system to develop human resources and experts in administrative agencies, and conduct regular training programs.</p> <p>(4) Strengthen the function of safety inspections of food products distributed in the country.</p> <p>The MOFALI Inspection Department will take the lead in designating/registering the laboratories responsible for the inspection of food produced and processed in the country and imported food, in collaboration with the MOH, the Customs Service and the Food Safety Reference laboratory.</p> <p>For foods produced and processed domestically in (3), the production process is controlled through the introduction of GAP, GHP, and GMP, and safety is theoretically ensured, the administrative agency in charge establishes a plan for spot checks in the market and on-site inspections at companies, and designated / registered inspection agencies conducts the inspection and reports it to the administrative agency in charge. The administrative agency in charge publicizes the plans and takes necessary administrative measures in accordance with the management plan.</p> <p>For imported food products, the administrative agency in charge will organize control procedures, and establish a system to review risk assessment criteria and sampling/inspection plans. For the time being, the various specific standards for food safety can be adapted from the decisions made in CODEX. The quarantine station will inspect the samples based on the sampling and inspection</p>

	<p>plan, and report the results to the administrative agency in charge. Upon receiving the results, the administrative agency in charge will revise the sampling/inspection plan as necessary, announce the results and the new plans, and takes necessary administrative measures.</p> <p>(5) Conduct policy evaluation of food safety administration. Each institution will conduct the evaluation, and the committee will share and discuss the evaluation results and make necessary revisions.</p>	
Input	<p><u>Administration</u></p> <ul style="list-style-type: none"> <li>• Invitation fee for policy advisors</li> <li>• research funds (expenses)</li> <li>• Council operating expenses</li> <li>• personnel expenses</li> </ul>	<p><u>Private</u></p> <p>-</p>
Project Cost	Total project cost: 1,882 Million MNT (716,000 USD)	
Beneficiary Effects/Impacts	<p>Mongolia's food safety situation improves, gains consumer confidence, and promotes import substitution</p> <p>Food companies are becoming more compliant with the law.</p>	
Consistency with Policy	<p>1. Vision 2050 2.5.20: Strengthen policies to ensure national food supply, stabilize food access, ensure food safety at the distribution stage, and bring standards in food production into conformity with international, regional, and developed country standards.</p>	
Remarks	<ul style="list-style-type: none"> <li>• Actively and closely working with donors and obtaining advice.</li> <li>• To establish a system modeled after overseas systems, but with a primary focus on exports.</li> <li>• Actively utilize the knowledge of other countries and international organizations, and carefully consider the prioritization of matters to be done domestically and the selection of functions to be performed.</li> <li>• To build a pipeline in this field with international organizations and major foreign countries</li> </ul>	

Project Implementation Schedule and Budget

Activities	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total	
(1) Organize the roles of agencies involved in the food safety system and ensure a forum for deliberating food safety.												
(2) Identify deficiencies in the legal system and revise and improve the legal system as necessary.												
(3) Each administrative agency will develop a risk management plan based on the terms of reference.												
(4) Strengthen the function of safety inspection of food distributed domestically.												
(5) Conduct policy evaluation of food safety administration.												
Project cost (Total)	Mil MNT	462	423	423	82	82	82	82	82	82	82	1,882
	Thousand USD	177	161	161	31	31	31	31	31	31	31	716

**Box: Foundation for Ensuring Food Safety**

**Changes in the System for Ensuring Food Safety in Japan:** Efforts to ensure food safety have shifted from regulation of individual food products to a focus on control of the entire production process, and eventually to a system of certification by a third party. In addition to pollution incidents that has extensively contaminated nature, such as Minamata disease, there have been major food incidents involving food companies, each of which has led to revisions of laws and the enactment of new legal systems. In recent years, the Yukijirushi mass food poisoning in 2000 led to the introduction of an updated system for comprehensive sanitation control manufacturing processes (equivalent to so-called HACCP) based on the Food Sanitation Law, and the 2002 pesticide residue problem in imported frozen vegetables led to the introduction of a positive pesticide residue system and the strengthening of the monitoring system for imported foods. In 2001, an outbreak of Bovine Spongiform Encephalopathy (BSE) in Japan led to the enactment of the Food Safety Basic Law, and this outbreak also led to the introduction of traceability and the revision of the Livestock Infectious Disease Prevention Law and the Feed Safety Law. The enactment of the Food Safety Basic Law has drastically changed Japan's food safety administration, which persists to this day. The Food Safety Commission was established in the Cabinet Office to conduct health impact assessments (risk assessments) of food products. Based on the results, the Ministry of Health, Labor and Welfare (MHLW) and the Ministry of Agriculture, Forestry and Fisheries (MAFF) are responsible for risk management. The Food Safety Commission, as the risk assessor, is independent of the relevant administrative agencies responsible for risk management, and conducts risk assessments objectively, neutrally, and fairly based on scientific knowledge. The basis of policy formulation is the two-way exchange of information and opinions among all parties concerned, including risk assessors, risk managers, food business operators and consumers.

**GAP/GHP/GMP under development in Mongolia:** 1) Livestock GAPs have been developed by the IFC Mongolian Meat Project. In addition, a draft GHP/GMP has been developed for meat processors, and the creation of specific guidelines will begin soon. The project will support the development of necessary checklists and Standard Operating Procedures (SOP) by inspection authorities and the provision of training to both the public and private sectors. (ii) MONMAP-AVC is working with beekeeping officials and MOFALI to develop a honey GAP. (iii) The Seabuckthorn GAP has already been completed with ADB support and manuals and record books have been issued. The Food Safety Law requires food businesses to implement GAP, GHP, and GMP, and the infrastructure for compliance with the law is currently under development.

**(2) Action Plan on Strengthening Export Inspection Capacities**

<b>A/P 8-2: Action Plan on Strengthening Export Inspection Capacities</b>	
Objective	Strengthen inspection capacity for export of agricultural and pastoral products
Baseline of A/P	There is no plan for the development and operation of an identified export inspection agency for agricultural and pastoral products.
Goal of A/P	The maintenance and operation plan of the identified export inspection agency for agricultural and pastoral products is reviewed every five years.
Target area	Whole country
Expected Outcomes	Inspection agencies responsible for export inspections will be identified and test reports will be issued by export inspection agencies to meet the requirements of importing countries.
Activities	<p>(1) Evaluate the current status of inspection agencies and designate inspection agencies to conduct export inspections of agricultural and pastoral products</p> <p>The MOFALI Industrial Inspection Department will take the lead in conducting a survey of the inspection capacity of domestic inspection agencies (evaluating personnel, equipment, budget, inspection methods, number of inspections, etc.) in cooperation with the Customs Service, MASM, and the FSRL. Evaluate the capacity of each inspection agency and identify an inspection agency (export inspection agency) for agricultural and pastoral products for export. In addition, clarify the division of roles with other agencies, including private inspection agencies, so that export inspections can be conducted without delay. Develop a legal basis for conducting these inspections, or revise the current "Law on Quality Control and Inspection of Raw Materials and Products of Animal and Plant Origin" and "Administrative Inspection Law" as necessary.</p> <p>(2) Regularly update quarantine information</p> <p>Collect and organize information on quarantine systems, priority items, quarantine requirements, etc. of importing countries in cooperation with MOFALI Industrial Inspection Department, External Relations Department, Customs Agency, and inspection agencies. Establish a department in charge of collecting and maintaining quarantine information on a regular basis.</p> <p>(3) Develop a plan for the development of an export inspection agency</p> <p>Based on the collection and analysis of quarantine information and overseas examples, an inspection equipment development and operation plan for export inspection agencies will be developed and reviewed at every five years. When formulating the plan, the plan should include the inspection agency's operation and budget, inspection methods, inspection facilities, personnel</p>

	<p>structure, and perspectives on improving inspection capacity, while keeping in mind priorities and strategies regarding priority export items and export destination markets.</p> <p>(4) Strengthen the testing capacity of export inspection agencies Equipment will be installed and inspectors and other personnel will be assigned in accordance with the maintenance and operation plan. Improve inspectors' inspection capabilities.</p> <p>(5) Expanding international accreditation Obtain international certification for testing and analysis, such as ISO 17025, 17020, 17043, 17045, etc., in order to obtain reliability in testing. Ensure equivalence with destination countries.</p>	
Input	<p><u>Administration</u></p> <ul style="list-style-type: none"> <li>• Research funds</li> <li>• Invitation fee for experts</li> <li>• Laboratory maintenance expenses</li> <li>• Training implementation costs</li> <li>• Overseas training expenses</li> <li>• Certification fee</li> </ul>	<p><u>Private</u></p> <p>-</p>
Project Cost	Total project cost: 760 Million MNT (2,893,000 USD)	
Beneficiary Effects/Impacts	<p>Mongolia's food safety situation improves, gains consumer confidence, and promotes import substitution</p> <p>The Mongolian domestic analysis results will be adopted in the export market, quarantine rates in the importing country will be reduced, and export procedures will be simplified.</p>	
Consistency with Policy	<ol style="list-style-type: none"> <li>1. Revise the requirements, criteria, and certifications for environmental health indicators to bring them closer to international standards.</li> <li>2. Vision 2050 2.5.19. Introduce hazard assessment and critical point detection system mechanisms, food safety quality control mechanisms, process control systems, and standardization in food processing plants.</li> <li>3. Strengthen policies to ensure national food supply, stabilize food access, ensure food safety at the distribution stage, and bring standards in food production into conformity with international, regional, and developed country standards.</li> </ol>	
Remarks	<ul style="list-style-type: none"> <li>• Actively and closely working with donors, obtaining their advice, and/or leveraging donor projects</li> <li>• Inspection agency development and operation plans should be coordinated to ensure that there is no duplication or discrepancy in donor support in order to ensure efficient use of facilities.</li> <li>• To improve the capacity of inspectors, international experts should be invited with donor support, and overseas training opportunities should be provided to reduce the gap in inspection capacity between Mongolia and other countries.</li> </ul>	

Project Implementation Schedule and Budget

Activities	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total	
(1) Evaluate the current status of inspection agencies and designate inspection agencies to conduct export inspections of agricultural and pastoral products.												
(2) Update quarantine information regularly												
(3) Develop a plan for the development of an export inspection agency.												
(4) Strengthen the testing capacity of export inspection agencies.												
(5) Expand the acquisition of international accreditation.												
Project Cost (Total)	Mil MNT	831	1,254	1,229	696	615	590	590	590	615	590	7,600
	Thousand USD	321	477	467	264	234	224	224	224	234	224	2,893

**Box: Enhanced Quarantine**

The Case of Japan:

**[Animal Quarantine]**In FY 2001, the Animal Quarantine Service began to develop a system to ensure the reliability of inspections, and in FY 2002, the Management and Guidance Section of the Quarantine Department was established as a specialized department. Subsequently, in 2003, the Animal Quarantine Service formulated related guidelines such as the "Operational Management Guidelines for Inspections in the Laboratory of the Animal Quarantine Station" and has been working to ensure the reliability of inspections by establishing and operating methods for creating and keeping records of inspections, etc., managing inspection equipment, inspection reagents, and inspection materials, and conducting inspection operations checks. In addition to these efforts, it has been working to acquire ISO/IEC17025 accreditation since FY 2011.

**[Plant Quarantine]**The government is expanding export inspections and export consultations at collection points and growing areas, and regularly updates information on import requirements of each country and disseminates this information to production areas and exporting companies. In addition, as support for growers and others seeking to export, the government have organized experts in plant quarantine and pest control, provide consultation and offer technical support for cultivation methods that comply with the plant quarantine conditions and pesticide residue standards of export destination countries.

The Case of Mongolia:

The IFC Mongolian Meat Project provided translations of key requirements from Chinese to Mongolian, including the requirements for registration of meat processors by the Chinese customs authorities and for the national agency in charge of inspections. MONMAP-AVC also translated six Chinese standards relevant to the meat and food processing sector. The next step is to collect specific requirements and share them in a way that is easy for stakeholders to utilize.

**(3) Action Plan on Preparatory Survey for Post-harvest Reduction**

A/P 8-3: Action Plan on Preparatory Survey for Post-harvest Reduction	
Objective	To understand the actual status of food loss from post-harvest to distribution, and to design loss reduction plan.
Baseline of A/P	The project implementation of post-harvest loss reduction will be realized.
Goal of A/P	The actual status of post-harvest losses is unknown, and no efforts have been made to reduce post-harvest losses.
Target area	Whole country
Expected Outcomes	<p>(1) For food losses that occur from post-harvest to just before retail, food commodities and supply chain stages with particularly high loss rates will be identified in Mongolia.</p> <p>(2) A pilot project for loss reduction will be conducted in accordance with the business plan, and a post-harvest processing loss reduction model for the food products in question will be established.</p> <p>(3) For the food products and supply chain identified in (1) above, a plan to reduce losses will be developed.</p>
Activities	<p>(1) Prepare the specifications for conducting a preparatory study and select a contractor through public solicitation.</p> <p>The MOFALI Industrial Inspection Department shall take the lead in preparing the specifications for the commissioned work to identify actual losses and develop a loss reduction approach. Since food losses and wastage occur in all processes of the supply chain, food products and processes with particularly high loss rates and potential for significant reductions shall be identified. The contracted services shall also include the development and implementation of a pilot project plan for loss reduction targeting the critical food products and processes identified through the study.</p> <p>(2) Manage the progress of the survey conducted by the contractor.</p> <p>The MOFALI Industrial Inspection Department will take the lead in managing the progress of the studies conducted by the contractor. For pilot projects, depending on the targeted food products and processes, the scale, implementation area, companies, producers, and distributors will be selected in consultation with relevant organizations. In addition, the project will actively seek advice from experts from FAO and other organizations.</p> <p>(3) Scrutinize the output of the outsourcing company.</p> <p>The MOFALI Industrial Inspection Department will take the lead in scrutinizing the output of the contractor. If necessary, MOFALI will request the subcontractor to make corrections and compile the results of the investigation.</p>

	(4) Develop a plan for post-harvest processing loss reduction. The MOFALI Industrial Inspection Department will take the lead in developing the business plan based on the results of the commissioned work. The MOFALI Inspection Audit Department will collaborate with the FAO in the preparation of the plan. Once the plan is prepared, the necessary procedures for its realization, such as budget acquisition and preparation of project implementation guidelines, will be carried out.	
Input	<u>Administration</u> <ul style="list-style-type: none"> <li>Survey outsourcing expenses</li> <li>Expenses for project progress management (travel, meeting expenses, etc.)</li> </ul>	<u>Private</u> <ul style="list-style-type: none"> <li>-</li> </ul>
Project Cost	Total project cost: 1,266 Million MNT (481,000 USD)	
Beneficiary Effects/Impacts	Food loss is reduced and food supply is stabilized. Cost savings and increased price competitiveness.	
Consistency with Policy	<ol style="list-style-type: none"> <li>Vision2050 4.2.38. Establish an international transportation and logistics center and develop a domestic transportation and logistics system.</li> <li>Vision2050 6.4.2. develop and implement legislation for eco-programs to reduce waste and reuse waste.</li> <li>Vision2050 6.4.4. Promote clean production and savings through subsidy programs by introducing low waste, natural resource conservative and state-of-the-art green technology and machinery.</li> </ol>	
Remarks	<ul style="list-style-type: none"> <li>Loss measurement should incorporate a quantification method that takes economic value into account.</li> <li>(4) In planning for post-harvest loss reduction, incentives and constraints should be considered with a view to private sector efforts.</li> </ul>	

#### Project Implementation Schedule and Budget

Activities	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
(1) The specifications for implementing this plan shall be prepared and a contractor shall be selected through public solicitation.											
(2) Manage the project progress of the survey conducted by the contractor.											
(3) Scrutinize the output of the subcontractor.											
(4) Develop a plan for post-harvest processing loss reduction.											
Project cost (Total)	Mil MNT	359	907								1,266
	Thousand USD	136	345								481

#### Box: from the State of Food and Agriculture 2019 (FAO)

The estimates of global food loss and waste rates reveal a wide variation in food loss estimates. Identifying the areas of food loss with the greatest potential for reduction will be critical in determining appropriate measures. Globally, it is estimated that around 14% of food products (in terms of economic value) are lost from post-harvest, just before retail stage. Food loss and waste occur at all stages of the supply chain to varying degrees, but they tend to be particularly high for certain food groups. It also suggests that there is significant potential for reduction, especially in areas where loss and waste rates are high.

#### (4) Action Plan on Training Human Resources in Sanitation and Quality Control

A/P 8-4: Action Plan on Training Human Resources in Sanitation and Quality Control	
Objective	Develop personnel to conduct hygiene and quality control training for companies
Baseline of A/P	0 hygiene and quality control trainers who have passed the exam
Goal of A/P	400 hygiene and quality control trainers who have passed the exam have been trained, and more than 40 training sessions are held annually for SMEs.

Target area	Whole country	
Expected Outcomes	A system for continuous training of personnel specializing in sanitation and quality control will be established, and the sanitation and quality control capabilities of companies will be improved; acquisition of international certifications such as HACCP and FSSC22000 will be promoted; and the risk of food safety for domestic food products distributed in the domestic market will be reduced. Food safety risks for domestic food products distributed in the domestic market will be reduced.	
Activities	<p>(1) Develop a training system of sanitation and quality control</p> <p>Training system specializing in sanitation and quality control will be developed, led by the MOFALI Industrial Inspection Department, in cooperation with the MOFALI Food Policy Implementation Coordination Department, MOH, universities, inspection laboratories, and food business associations.</p> <p>1) Establish trainer registration implementation guidelines, including criteria for trainer qualification, qualification renewal system, roles of trainers, supervisory authorities, and related organizations</p> <p>2) Review and develop training programs for trainer development, while confirming curriculum at related educational institutions</p> <p>3) Establish qualifications for attending trainer training (e.g., already have a related qualification such as medical doctor, dentist, pharmacist, veterinarian or have completed a related course such as medicine, dentistry, pharmacy, veterinary medicine, animal husbandry, fisheries, agricultural chemistry at a four-year university).</p> <p>(2) Develop sanitation and quality control training materials</p> <p>The MOFALI Industrial Inspection Department will commission national and international experts and experts from food-related faculties of universities to develop training programs and certification examinations for trainers and training programs and respective textbooks for companies to be held by the trainers. The textbooks will cover general hygiene management, HACCP, food safety management systems, and related legal systems and administrative agencies.</p> <p>(3) Establish a registration system for sanitation and quality control personnel</p> <p>The MOFALI Industrial Inspection Department will set up an organization to register those who have passed the examinations. This organization will conduct examinations for trainers and organize training for the renewal of trainer certification. It will also support the trainer organizations in their activities to continuously collect and share the latest information.</p> <p>(4) Conduct hygiene and quality control trainer development training</p> <p>MOFALI will invite international-level experts to conduct training to develop trainers, utilizing the program and lecture materials.</p> <p>(5) Plan and implement quality control training for SMEs as a subsidized project</p> <p>The MOFALI Industrial Inspection Department, in cooperation with the SME Agency will develop a training assistance program for SMEs and establish implementation guidelines and procedures. The MOFALI Food Policy and Implementation Coordination Department will require all companies that handle food products to have a designated department or person in charge of sanitation and quality control, staffed by a trained person. The necessary legislation will be enacted to support it.</p>	
Input	<u>Administration</u> <ul style="list-style-type: none"> <li>• Short-term expert invitation fee</li> <li>• Text development and preparation costs</li> <li>• Training implementation costs</li> <li>• Support for trainer organization activities</li> </ul>	<u>Private</u> <ul style="list-style-type: none"> <li>Employee training expenses</li> <li>Trainer renewal fee</li> </ul>
Project Cost	Total project cost: 2,131 Million MNT (811,000 USD)	
Beneficiary Effects/Impacts	Companies will be able to improve their hygiene and quality management capacity, meet the prerequisites for certification, and obtain international certification. Companies will be able to identify international trends in the field of hygiene and quality management and will be able to make appropriate market choices and select which certifications to obtain.	
Consistency with Policy	<ol style="list-style-type: none"> <li>1. Vision 2050 2.5.19. Introduce hazard assessment and critical point detection system mechanisms, food safety quality control mechanisms, process control systems, and standardization in food processing plants.</li> <li>2. Strengthen policies to ensure national food supply, stabilize food access, ensure food safety at the distribution stage, and bring standards in food production into conformity with international, regional, and developed country standards.</li> </ol>	
Remarks	<ul style="list-style-type: none"> <li>• Actively and closely working with donors and obtaining advice</li> <li>• In training trainers, international experts should be invited and involved with the support of donors to improve the level of training. In addition, universities should also be actively involved.</li> <li>• Training of trainers should be linked to university curriculum.</li> </ul>	

Project Implementation Schedule and Budget

Activities	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total	
(1) Establish a sanitation and quality control trainer system.												
(2) Develop hygiene and quality control training texts, materials, and exams												
(3) Establish a registration system for sanitation and quality control personnel.												
(4) Conduct trainer development training.												
(5) Plan and implement auxiliary projects for dissemination.												
Project cost (Total)	Mil MNT	230	266	224	287	273	345	121	104	140	141	2,131
	Thousand USD	91	101	85	109	103	131	46	39	53	53	811

**Box: Certification Examinations Related to Food Safety**

In Japan, food labeling certification has been in place since 2009. Food labels provide essential information such as, "place of origin," "ingredients," "additives," and "nutritional information," and play an important role in conveying information about the characteristics of the food products. Through labeling, food business operators must convey accurate information about food products. Those who pass the advanced level examination for this certification may engage in food-related consultancy services as an advanced food labeling diagnostician. In addition, an association for those who have passed the advanced level has been organized, which holds study sessions on food safety and conducts activities to promote awareness of food safety among consumers.

In March 2015, a food safety certification test (intermediate level) was launched for those aspiring to become on-site leaders in food safety, such as in the food manufacturing industry. In September 2015, an elementary level certification test was also launched for those more broadly involved in food. The certification aims to ensure safety in the production, processing, and marketing process of food based on scientific evidence. In 2024, the development of an advanced level certification test and the creation of an organization for those who passed this advanced level certification test are planned.

**(5) Action Plan on Strengthening Export Competitiveness through Acquisition of International Certification**

A/P 8-5: Action Plan on Strengthening Export Competitiveness through Acquisition of International Certification	
Objective	Expand exports by acquiring international certifications that are valid in target markets
Baseline of A/P	Since it is difficult to obtain statistics on the current status, the current status is set to 0 and the increase is used as the index.
Goal of A/P	The number of international certifications for food safety or quality control will increase by 114 companies.
Target area	Whole country
Expected Outcomes	International certifications favorable to exports will be obtained more efficiently. Certifications obtained in Mongolia will be recognized in destination markets, increasing the number of international certifications required for export.
Activities	<p>(1) Investigate international certifications favorable to the export of Mongolian agro-pastoral products.</p> <p>MOFALI's External Relations Department and other related organizations will consult with each other to investigate priority export items, expected target sectors and markets, and international certifications required by the market (HACCP, ISO22000, FSSC22000, Leather WG, Animal Welfare WG, Halal (Indonesia, Malaysia, GAC, ESMA, etc.).</p> <p>(2) Strengthen the accreditation system for international certification</p> <p>Improve the capacity of MNAS accredited auditors. Promote international mutual recognition and assurance of equivalence. Actively engage with and utilize overseas accreditation bodies.</p> <p>(3) Strengthen certification bodies</p>

	<p>Increase the number of certification bodies and auditors, and strengthen the capacity of auditors. Increase Mongolia's presence in overseas certification bodies.</p> <p>(4) Develop a plan to support certification and increase the number of companies obtaining certification</p> <p>Develop a grant program for SMEs to obtain certification, develop implementation guidelines, provide grants to companies, and periodically hold training for SMEs on certification.</p>	
Input	<p><u>Administration</u></p> <ul style="list-style-type: none"> <li>• Market research and analysis expenses</li> <li>• Advisor invitation fee</li> <li>• Jury training fee</li> <li>• Accreditation body auditor training fees</li> <li>• Certification body auditor training fee</li> <li>• Subsidy for certification for companies</li> <li>• Cost of holding training for companies</li> <li>• Subsidy for corporate capital investment</li> </ul>	<p><u>Private</u></p> <ul style="list-style-type: none"> <li>• Consultation expenses</li> <li>• Employee training costs for certification</li> <li>• Certification and maintenance expenses</li> <li>• Certification administration fee</li> </ul>
Project Cost	Total project cost: 14,990 Million MNT (5,706,000 USD)	
Beneficiary Effects/Impacts	<p>Certification by companies will be promoted and international-level quality control will be disseminated. Mongolian agro-pastoral products will be more easily accepted by importing countries and exports will increase. Mongolian companies will have more confidence in quality control, and business transactions will be smoother.</p>	
Consistency with Policy	<ol style="list-style-type: none"> <li>1. Vision 2050 2.5.19. Introduce hazard assessment and critical point detection system mechanisms, food safety quality control mechanisms, process control systems, and standardization in food processing plants.</li> <li>2. Strengthen policies to ensure national food supply, stabilize food access, ensure food safety at the distribution stage, and bring standards in food production into conformity with international, regional, and developed country standards.</li> <li>3. Vision 2050 4.5.7. to ensure that SMEs meet the requirements of global value chains by strengthening their management, improving employee skills, introducing technological advances and innovations, and improving product quality and standards.</li> </ol>	

**Project Implementation Schedule and Budget**

Activities	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total	
(1) Investigate international certifications favorable to the export of Mongolian agro-pastoral products.												
(2) Strengthen the accreditation system for international certification.												
(3) Strengthen the certification body.												
(4) Develop a plan to support certification and increase the number of companies obtaining certification.												
Project cost (Total)	Mil MNT	283	533	1,619	1,692	1,559	1,647	1,744	1,850	1,967	2,096	14,990
	Thousand USD	113	202	616	644	593	626	663	704	748	797	5,706

**Box: Mongolia Export Development Project (UNIDO and MOFALI Funded by WB)**

The Mongolia Export Development Project (EDP) was launched in December 2021 with WB funding, and UNIDO is providing technical assistance to improve Mongolia's accreditation and certification capabilities. By training local Mongolian experts in services related to international certification for potential export products, the project is helping SMEs in non-mining sectors to strengthen their export capacity and expand their access to export markets. Efforts are also being made to ensure the equivalence of international certifications. For example, in the area of organic certification, the government is analyzing legal documents, selecting potential crops and food products, and attempting to revise specific regulations with the aim of ensuring equivalence with Chinese organic certification standards.

#### 4.2.9 Promoting export of agricultural and pastoral products program

##### Promoting Export of Agricultural and Pastoral Products Program

Duplicated documents for export, complicated and time-consuming procedures. Mistakes are often made, placing a heavy burden on companies. In trade negotiations, there is insufficient information sharing among relevant ministries and agencies, and limited cooperation between the private sector and government agencies. Negotiations proceed with only a few agencies and there is no strategy. It is difficult for companies to fully understand the conditions of export destinations by themselves, but support organizations do not cooperate with each other, and companies do not receive sufficient support.

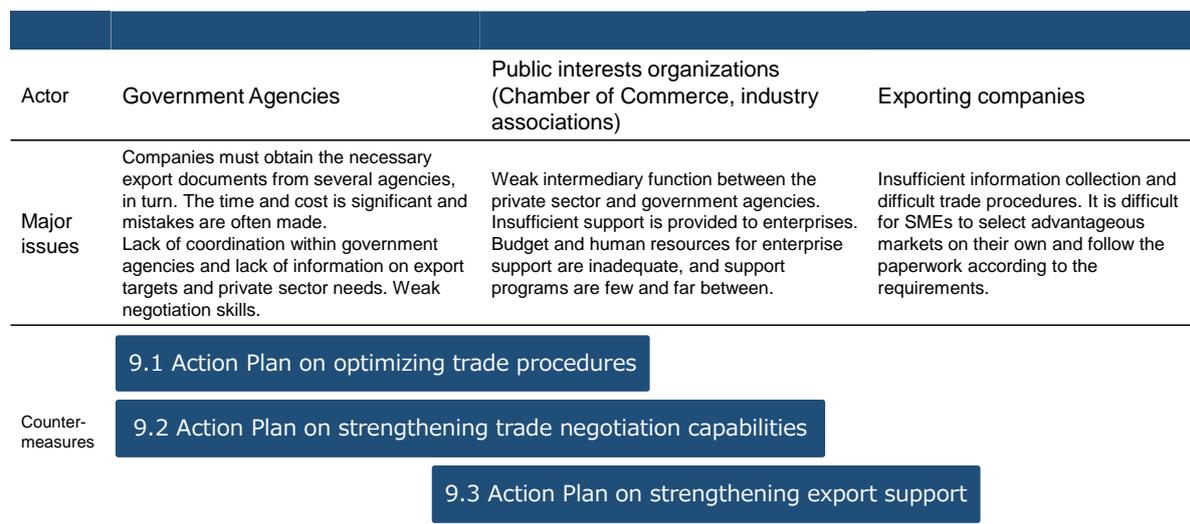


Figure 4.11 Promoting export of agricultural and pastoral products program

Source: JICA Project Team

Export procedures are cumbersome and time-consuming and costly for companies, which hinders exports. In addition, there is a lack of information on partner countries and the needs of the private sector in trade negotiations, and there is insufficient coordination among related agencies. Government support for exporting enterprises is also limited, and the hurdles to exporting are very high, especially for SMEs.

Table 4.9 Relevance of promoting export of agricultural and pastoral products program and development directions

	Specific issues, strengths, and development guidelines	Promoting Export of Agricultural and Pastoral Products Program		
		9.1	9.2	9.3
issues	Inadequate agreements/negotiations	○	◎	○
	Cumbersome and inefficient trade administration	◎	○	○
	Lack of capacity of SMEs	○	○	◎
Direction of Development	Simplification and streamlining of trade procedures	◎	○	○
	Strengthening Trade Negotiation Capabilities	○	◎	○
	Promote participation in international exhibitions, etc.			◎

○: strongly linked, ◎: very strongly linked

Source: JICA Project Team

Under the " Action Plan on Optimizing Trade Procedures " with the aim of reducing the cost and time required for export-related procedures, a system of accreditation and registration of exporting companies will be introduced, a system for maintenance of documentary information required by importing countries will be established, one-stop service will be promoted through computerization, and the logistics capacity of relevant agencies will be enhanced. The number of hours and the deficiencies in the procedures of each

agency will be evaluated and made public, and a system will be established to incorporate the opinions of the private sector to continuously optimize the procedures.

In the " **Action Plan on Strengthening Trade Negotiation Capabilities** ", it aims to ensure that information on export target countries and sectors is collected, shared among government agencies and the private sector involved in trade on a permanent basis, and that strategies are formulated in advance based on the needs and current status of the private sector in negotiations with target countries. In order to develop a system for strategic trade negotiations in line with the needs of the private sector, full-time officers in charge will be assigned to administrative agencies involved in agricultural trade, and a mechanism for cooperation between the relevant agencies and the private sector will be established. Continuous training will be provided to strengthen the negotiating skills of the officers in charge at each agency to raise the level of their negotiating ability. Select priority agricultural exports and priority target countries, and prepare for trade negotiations.

The " **Action Plan on Strengthening Export Support** " targets the Mongolian National Chamber of Commerce and Industry (MNCCI) to develop business support programs, such as business negotiation assistance, contracting assistance with companies in importing countries, and information on selecting favorable tariffs, with the aim of increasing company exports, while strengthening the capacity of the MNCCI. The strengthening of the MNCCI capacity include the facilitation of cooperation between the private sector and government agencies and the collection and accumulation of information, thus contributing to the strengthening of trade negotiation capacity and simplification of export procedures and cost reduction.

### (1) Action Plan on Optimizing Trade Procedures

A/P 9-1: Action Plan on Optimizing Trade Procedures	
Objective	Reduce trade processing costs
Baseline of A/P	260 hours on average for trade procedures (in case of meat)
Goal of A/P	106 hours on average for trade procedures (in case of meat)
Target area	Whole country
Expected Outcomes	Time and processing fees related to exports will be reduced and exports will increase.
Activities	<p>(1) A system to certify and register exporting companies will be introduced. MASM and the Customs Agency will take the lead in establishing a pre-qualification and registration system for exporting companies.</p> <p>(2) Documentation information required by each importing country will be maintained. The Customs Agency will work with MOFALI and MED to collect, organize, and regularly update information on the documents required by importing countries and related contents. The MOFA will share information with MOFALI and MED and consolidate the necessary information for the Customs Agency. Relevant organizations (MASM, MOFALI, GAVS, inspection agencies, and MNCCI) will prepare and periodically update procedural implementation guidelines, including checklists and formats, for items required by each importing country.</p> <p>(3) One stop service through digitization will expand. MOFALI will enhance the website to expand the procedures on the MOFALI One Window Service page. Companies will apply electronically to the export processing system. Relevant agencies will set and announce time targets for these procedures in advance. Relevant agencies will start each procedure as soon as they receive an application from a company.</p> <p>(4) The document processing capacity of the agencies involved will be improved. The relevant agencies shall annually evaluate and publicize their performance against time targets and the number of document errors, and conduct document control training for the persons in charge. Every year, the Customs Agency will gather procedural staff from relevant agencies and</p>

	provide training on the overview of requirements and update items for each importing country. (5) Comments from the private sector will be solicited and published. The Customs Agency shall receive and consolidate opinions from the private sector on trade procedures and disseminate them to relevant agencies. It will also organize these opinions and make them public.	
Input	<u>Administration</u> <ul style="list-style-type: none"> <li>• Administrative costs for certification and registration of exporting companies</li> <li>• Electronic system operating expenses</li> <li>• Information collection and development expenses</li> <li>• conference expenses</li> <li>• Cost for preparation of implementation rules and regulations, formats, etc.</li> <li>• Personnel expenses</li> </ul>	<u>Private</u>
Project Cost	Total project cost: 1,793 Million MNT (682,000 USD)	
Beneficiary Effects/Impacts	Costs associated with export procedures will be reduced. Simplification, collection and organization of information on the part of the government will reduce the burden on firms and increase exports. The number of exporting companies will also increase.	
Consistency with Policy	<ol style="list-style-type: none"> <li>1. Vision 2050 4.4.11. take measures to diversify the economy and expand export opportunities and markets in several sectors that can compete in the long term by advancing regional economic integration and simplifying trade.</li> <li>2. Vision 2050 4.5.7. to ensure that SMEs meet the requirements of global value chains by strengthening their management, improving employee skills, introducing technological advances and innovations, and improving product quality and standards.</li> <li>3. Vision 2050 4.5.8. obtain information on necessary innovations for SMEs through diplomatic missions abroad and expand investment partnerships through international exhibitions and business meetings.</li> </ol>	

**Project Implementation Schedule and Budget**

Activities	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total	
(1) A system to certify and register exporting companies will be introduced.												
(2) Documentation information required by each importing country is maintained.												
(3) One stop service by computerization will expand.												
(4) The document processing capacity of the institutions concerned will be improved.												
(5) Solicit and publicize comments from the private sector.												
Project cost (Total)	Mil MNT	159	160	165	168	174	178	188	193	201	207	1,793
	Thousand USD	62	62	64	63	66	67	71	73	76	78	682

**Box: from World Bank Export Report**

Export and international veterinary certificates are issued based on samples taken by inspectors from specialized laboratories and the results of tests conducted by the SCVL or Food Safety Reference Laboratory. On the other hand, Australia, for example, monitors and certifies the plants of meat exporting companies so that export procedures can proceed without sample inspections of all exported products. In addition, in Mongolian customs, a specific senior inspector checks all declarations, but by improving the capacity of customs inspectors, the same quality of administrative procedures can be carried out regardless of the fact that who is in charge, thus saving time. Implementing regulations and specified formats also help to homogenize administrative procedures.

**(2) Action Plan on strengthening trade negotiation capabilities**

<b>A/P 9-2: Action Plan on strengthening trade negotiation capabilities</b>					
Objective	Strategically engage in trade negotiations and address the needs of the private sector				
Baseline of A/P	A full-time international negotiator will be assigned to the administrative agencies involved in the international trade (MOFA, MOFALI, and MED), and an information sharing system will be established.				
Goal of A/P	Dedicated international negotiators will be assigned to each ministry in the administrative agencies involved in trade (MOFA, MOFALI, and MED), and a system of information sharing with the private sector will be established.				
Target area	Whole country				
Expected Outcomes	Information on export target countries and sectors is collected and shared among trade-related government agencies and the private sector on a permanent basis. In negotiations with export target countries, strategies are developed in advance based on the needs and current status of the private sector, and the results of negotiations are promptly shared with the private sector.				
Activities	<p>(1) Dedicated trade officers are assigned to administrative agencies related to agricultural trade. MOFA will assign a full-time person within the Ministry to coordinate on a permanent basis with MOFALI, MED, Customs Agency, and MNCCI on trade matters. MOFA, MOFALI, MED, and the Customs Agency will have a full-time international negotiation team within the Ministries.</p> <p>(2) Training to strengthen negotiation skills will be provided for full-time liaison coordinators, international negotiators, and candidates for such positions. MOFA will invite experts from abroad to provide on-the-job training and advice to the relevant ministries. The MOFA, MOFALI, and MED will organize study groups on trade agreements and trade negotiations to raise the level of capacity.</p> <p>(3) Priority countries and products for export of agricultural and pastoral products will be selected. MOFALI and MED will conduct a survey of target countries, markets, and products with export potential in the near future and publish the results. MOFALI will organize and dispatch a survey team and utilize its network of economic officers in diplomatic missions abroad. In addition to market needs, information on relevant SPS / TBT agreements will be developed and shared among all parties concerned. Priority export countries and items will be reviewed annually.</p> <p>(4) A negotiating structure will be established after the start of trade negotiations. As soon as the possibility of trade negotiations arises, the MOFA will convene the relevant organizations and form a working group; the MED will ensure that the MNCCI secures the participation of key companies. The working group will analyze the inquiries from the counterpart countries, discuss responses according to the needs of the private sector in the relevant areas, and determine a negotiating policy. Minutes of the discussions will be prepared and made public as soon as possible after the discussions with the counterpart countries.</p>				
Input	<table border="1"> <thead> <tr> <th><u>Administration</u></th> <th><u>Private</u></th> </tr> </thead> <tbody> <tr> <td> <ul style="list-style-type: none"> <li>• Conference hosting expenses</li> <li>• Full-time personnel expenses</li> <li>• Research implementation expenses</li> <li>• Information gathering expenses</li> <li>• Invitation fee for experts</li> </ul> </td> <td> <ul style="list-style-type: none"> <li>• Conference registration fee</li> <li>• Negotiation participation fee</li> </ul> </td> </tr> </tbody> </table>	<u>Administration</u>	<u>Private</u>	<ul style="list-style-type: none"> <li>• Conference hosting expenses</li> <li>• Full-time personnel expenses</li> <li>• Research implementation expenses</li> <li>• Information gathering expenses</li> <li>• Invitation fee for experts</li> </ul>	<ul style="list-style-type: none"> <li>• Conference registration fee</li> <li>• Negotiation participation fee</li> </ul>
<u>Administration</u>	<u>Private</u>				
<ul style="list-style-type: none"> <li>• Conference hosting expenses</li> <li>• Full-time personnel expenses</li> <li>• Research implementation expenses</li> <li>• Information gathering expenses</li> <li>• Invitation fee for experts</li> </ul>	<ul style="list-style-type: none"> <li>• Conference registration fee</li> <li>• Negotiation participation fee</li> </ul>				
Project Cost	Total project cost: 7,852 Million MNT (2,988,000 USD)				
Beneficiary Effects/Impacts	Priorities in negotiations are clarified and the needs of the private sector are reflected in the negotiations. Policy assessments of trade negotiations will be conducted and feedback will be obtained.				
Consistency with Policy	<ol style="list-style-type: none"> <li>1. Vision 2050 4.4.11. take measures to diversify the economy and expand export opportunities and markets in several sectors that can compete in the long term by advancing regional economic integration and simplifying trade.</li> <li>2. Vision 2050 4.5.7. to ensure that SMEs meet the requirements of global value chains by strengthening their management, improving employee skills, introducing technological advances and innovations, and improving product quality and standards.</li> <li>3. Vision 2050 4.5.8. obtain information on necessary innovations for SMEs through diplomatic missions abroad and expand investment partnerships through international exhibitions and business meetings.</li> </ol>				
Remarks	<ul style="list-style-type: none"> <li>• Close cooperation and coordination among related agencies.</li> </ul>				

Project Implementation Schedule and Budget

Activities	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total	
(1) Dedicated trade officers are assigned to administrative agencies related to agricultural trade.												
(2) Priority countries and products for export of agricultural and pastoral products will be selected.												
(3) Priority countries and products for export of agricultural and pastoral products will be selected.												
(4) A negotiating framework will be established after the start of trade negotiations.												
Project cost (Total)	Mil MNT	978	976	977	655	675	694	714	695	715	773	7,852
	Thousand USD	376	371	371	249	256	264	271	264	272	294	2,988

**Box: Japan-Thailand EPA Negotiations and Beyond**

After agreeing to establish a working group in April 2002, negotiations began in February 2004, were signed in April 2007, and entered into force in November of the same year. For negotiations with Asian countries, including Thailand, the Ministry of Agriculture, Forestry and Fisheries (MAFF) established a new negotiation team specializing in EPAs, with approximately 40 members assigned to the team in 2023. A Free Trade Agreement Headquarters was established with the participation of ministers and director-general-level officials, and a Negotiation Strategy Study Group examined strategies and made domestic adjustments. MAFF tried to prevent tariff reductions on agricultural products to avoid any impact on domestic agriculture, but Thailand was strongly interested in liberalizing trade in rice, and negotiations had been stalled for a long time. Therefore, MAFF proposed to the Thailand side to work on technical cooperation and improvement of rural livelihoods to the benefit of both countries, and also decided to provide assistance in responding to the SPS measures. For Japanese society, the agreement was positioned as a contribution to the stabilization and diversification of food imports and the promotion of exports of Japanese agricultural products such as fruit. The Japan Agriculture Cooperative (JA) was actively involved and cooperated in the formulation of the new negotiating policy of MAFF. During the negotiations, a delegation led by the chairman of JA-Zenchu visited Thailand agricultural cooperatives and proposed the OVOP project and technical cooperation among agricultural cooperatives, and also engaged them through private channels. As a result, tariffs on rice were maintained and agricultural exports increased.

In 2015, a study was conducted on the impact of concluded EPAs on Japan's agriculture, forestry, and fisheries industries. The survey was undertaken in preparation for EPA reconsideration and revision negotiations, and a field survey was also conducted in Thailand. According to the survey, exports of agricultural, forestry, and fishery products from Japan to Thailand increased from 13.4 billion yen in 2004 to 35.8 billion yen in 2015.

**(3) Action Plan on Strengthening Export Support**

A/P 9-3: Action Plan on Strengthening Export Support	
Objective	Appropriate and adequate export support by the MNCCI for small and medium agro-pastoral enterprises
Baseline of A/P	Number of small and medium-sized agro-pastoral enterprises supported by the Export Promotion Support Program: 0 per year
Goal of A/P	Number of small and medium-sized agro-pastoral enterprises supported by the Export Promotion Support Program: 1,000 enterprises per year
Target area	Whole country
Expected Outcomes	An export enterprise support program will be developed for SMEs that have difficulty exporting on their own. In addition, export procedures will be simplified and the costs required for export procedures will be reduced.
Activities	(1) To develop a legal basis and form a subsidy program to promote export support activities of small and medium-sized enterprises (SMEs). The MNCCI will develop and revise legislation as necessary to implement export assistance programs; MOFALI, in collaboration with the SME agency will develop implementation guidelines and procedures for assistance programs for small and medium agro-pastoral related enterprises,

	<p>with MNCCI as the implementer.</p> <p>(2) Organize an Agricultural and Pastoral Products Export Promotion Council to share the challenges and needs of the private sector with government agencies.</p> <p>The MNCCI will establish an Agricultural and Pastoral Products Export Promotion Council, led by the SME agency. Regular meetings will be organized and coordinated by the MNCCI. The SME agency will provide technical assistance to the MNCCI; MED, MASM, Customs Agency, and industry associations will have representatives in the Council to discuss export promotion; MNCCI and SME agency will invite other relevant agencies and business representatives to the Council as needed. The Export Promotion Council will identify areas of information that need to be collected and updated and make MNCCI collect and maintain information on export markets. Council participants will cooperate in the collection of information in the identified areas.</p> <p>(3) Conduct training to strengthen SMEs support capacity of MNCCI.</p> <p>Invite experts from overseas to MNCCI for human resource development. Request overseas export support organizations to dispatch MNCCI staff for training.</p> <p>(4) Assist MNCCI in supporting companies.</p> <p>MNCCI will manage the information collected and provide it to the member. MNCCI will also provide SMEs support on priority issues discussed by the Export Promotion Council; MOFALI will subsidize SME support provided by MNCCI; MNCCI will organize training programs for companies and develop human resources; and MNCCI will provide support to companies through exhibitions and antenna shops.</p>	
Input	<p><u>Administration</u></p> <ul style="list-style-type: none"> <li>• Conference hosting expenses</li> <li>• Invitation fee for experts</li> <li>• Overseas training expenses</li> <li>• Corporate support program implementation costs</li> <li>• Subsidy for participation in exhibitions and antenna store operation</li> <li>• Subsidy for industry association activities</li> <li>• Cost of preparation of implementation rules and regulations, etc.</li> </ul>	<p><u>Administration</u></p> <ul style="list-style-type: none"> <li>• Conference hosting expenses</li> <li>• Invitation fee for experts</li> <li>• Overseas training expenses</li> <li>• Corporate support program implementation costs</li> <li>• Cost for the participation in exhibitions and antenna store operation</li> <li>• Cost for industry association activities</li> <li>• Cost of preparation of implementation rules and regulations, etc.</li> </ul>
Project Cost	Total project cost: 24,505 Million MNT (9,328,000 USD)	
Beneficiary Effects/Impacts	Enables companies to take advantage of more favorable trade terms. Costs associated with export procedures are reduced. Companies will be able to find business partners more easily and sign contracts on more favorable terms. The government will have a better understanding of the specific needs of the private sector and will be able to provide better support to the private sector. Exports of agricultural and pastoral products will increase.	
Consistency with Policy	<ol style="list-style-type: none"> <li>1. Vision 2050 4.4.11. take measures to diversify the economy and expand export opportunities and markets in several sectors that can compete in the long term by advancing regional economic integration and simplifying trade.</li> <li>2. Vision 2050 4.5.7. to ensure that SMEs meet the requirements of global value chains by strengthening their management, improving employee skills, introducing technological advances and innovations, and improving product quality and standards.</li> <li>3. Vision 2050 4.5.8. obtain information on necessary innovations for SMEs through diplomatic missions abroad and expand investment partnerships through international exhibitions and business meetings.</li> </ol>	

Project Implementation Schedule and Budget

Activities	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
(1) To form a subsidiary project to promote export support activities of SMEs.											
(2) Hold export promotion councils to share private sector issues and needs with government agencies											
(3) Conduct training to strengthen the corporate support capacity of MNCCI staff.											
(4) Subsidize corporate											

support by MNCCI.												
Project cost (Total)	Mil MNT	760	1,058	2,762	2,421	2,479	2,684	2,733	3,141	3,201	3,266	24,505
	Thousand USD	294	402	1,051	921	943	1,021	1,040	1,195	1,218	1,243	9,328

**Box JETRO "10,000 New Exporters Program".**

Currently, JETRO offers program for export assistance to companies and individuals with no prior experience in exporting. Interested parties can apply for assistance by registering free of cost on the JETRO website. The programs include (1) consultation by experts, (2) assistance with product development and promotion, (3) introductions to promising export destinations and local market research, and (4) assistance with matching and international exhibition participation and contract support. In addition to JETRO, local governments, financial institutions, and trading companies form consortiums to support companies. In addition, coordinators with local networks are assigned in 27 cities in 19 countries/regions.

This includes activities dedicated to supporting the export of agricultural, forestry, marine, and food products. Efforts to support specific transactions include the creation and publication of specialized websites that summarize regulations and export procedures by item and country, country-specific event calendars, market reports by export item and country, and the creation and expansion of a certification system for Japanese food product supporter stores overseas. JFOODO, which aims to enhance the brand power of Japanese food and food products, has also been established under the umbrella of JETRO. JFOODO was established based on the "Collaboration Agreement for Strengthening the All-Japan Export Support System for Agricultural, Forestry and Marine Products and Foods" signed by 15 organizations including MAFF, JETRO and JA Group. JFOODO is an organization specializing in the implementation of export promotions for agricultural, forestry, marine, and food products.

**4.2.10 Strengthening the business management capacity of SMEs and agricultural cooperatives program**

**Strengthening the business management capacity of SMEs and Agricultural Cooperatives Program**

In establishing agro-pastoral value chains, it is essential to strengthen the management capacity of SMEs and cooperatives that takes role for distribution and commercialization of related products. Although the revision of the Law on Cooperatives has made it possible for cooperatives to access funds from the financial market, they face a high hurdle in accessing funds due to their fragile management base and governance structure. In addition, it is necessary to improve and streamline indirect operations such as sales, customer service, and back-office operations (general affairs, accounting, human resources, labor relations, inventory control, etc.).

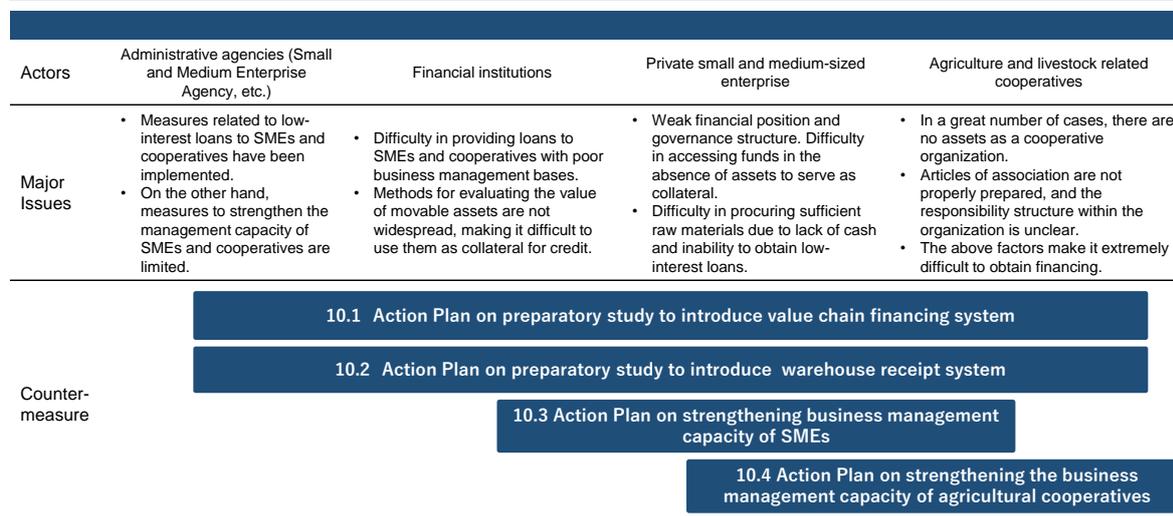


Figure 4.12 Strengthening the business management capacity of SMEs and agricultural cooperatives program

Source: JICA Project Team

Improving access to finance is crucial for building agro-pastoral value chains, from the perspective of increasing the scale of agro-pastoral businesses and creating competitiveness in agro-pastoral products. This program outlines A/Ps for new financing systems other than credit secured by real estate and movable assets,

and for strengthening organizations of private companies and associations related to the agro-pastoral industry. The table herein below shows how these plans relate to the development guidelines.

Table 4.10 Relevance of strengthening the business management capacity of SMEs and agricultural cooperatives program and development directions

	Specific issues, strengths, and development guidelines	Strengthening the Business Management Capacity of SMEs and Agricultural Cooperatives Program			
		10.1	10.2	10.3	10.4
Direction of Development	3-1-1 Formation of Value Chain Financing Structure	◎			
	3-1-2 Introductory Test for Warehouse Securities System		◎		
	3-2-1 Strengthening the Financial Management Capacity of the Private Sector			◎	
	3-2-2 Strengthening the organizational structure and financial management capacity of agro-pastoral cooperatives				◎
	3-3-1 Legislative Revisions Related to the Agricultural Sector	○	○	○	○
	3-3-2 Legal Revisions Related to the Livestock Sector	○	○	○	○

○: strongly linked, ◎: very strongly linked

Source: JICA Project Team

The following is a summary of each plan.

**Action Plan on Preparatory Study to Introduce Value Chain Financing System** is a plan to establish a mechanism whereby the buyer of raw materials issues a purchase guarantee, which is then used as collateral by commercial banks to provide loans to SMEs and agro-pastoral cooperatives for improving access to finance for SMEs and agro-pastoral cooperatives that have difficulty in obtaining loans from a credit risk perspective.

**Action Plan on preparatory study to introduce warehouse receipt system** is a plan to form a mechanism for warehouse operators to issue warehouse receipts to depositors of agricultural and pastoral products that are recognized as having a certain asset value. The study should start from the identification of possible items to be deposited among the agro-pastoral products in Mongolia.

Under the **Action Plan on Strengthening Business Management Capacity of SMEs**, support programs will be expanded for SMEs in the agricultural and pastoral industries to help them achieve more efficient and stable management. Specifically, by partially supporting the dispatch of experts to provide consulting services in the field of business management, the plan will create an environment that facilitates access to advice on optimizing financial management, reducing costs, and improving sales promotion and marketing.

**Action Plan on Strengthening the Business Management Capacity of Agricultural Cooperatives** is a plan to strengthen the management capacities of the cooperatives by providing opportunities for them to see the cooperatives that are implementing advanced initiatives in terms of value-adding and trading of agricultural and pastoral products, and provide training related to the management of the cooperatives.

### (1) Action Plan on Preparatory Study to Introduce Value Chain Financing System

A/P 10-1: Action Plan on Preparatory Study to Introduce Value Chain Financing System	
Objective	In order to improve access to finance for SMEs and cooperatives related to the agro-pastoral industry that have difficulty in obtaining loans from the perspective of credit risk, a basic study (including a demonstration project) on the introduction of a value chain financing system will be

	conducted, and the system will be designed and institutionalized.	
Baseline of A/P	With regard to the value chain financing system, donors and commercial banks have so far begun to consider introducing the system, but no demonstration projects or other activities have been conducted.	
Goal of A/P	A basic study (including a demonstration project) on the introduction of a value chain financing system will be conducted, and based on the results, a value chain financing system applicable in Mongolia will be established.	
Target area	Whole country	
Expected Outcomes	<p>(1) Case studies from other countries on value chain financing schemes will be collected and reviewed, and drafts of financing schemes that may be appropriate in Mongolia will be developed.</p> <p>(2) After selecting commercial banks that can be linked to the project, a value chain financing demonstration project will be conducted in coordination with specific value chain stakeholders.</p> <p>(3) After organizing the results of the demonstration project, the draft guideline for the value chain financing program will be revised.</p> <p>(4) Value chain financing will be institutionalized.</p>	
Activities	<p>(1) The specifications for implementing this plan will be prepared and a contractor will be selected through a public solicitation process.</p> <p>MOFALI, in collaboration with the SME agency will take the lead in preparing the specifications for the commissioned work to design a value chain financing system. The specifications will include the collection and review of case studies from other countries, planning and implementation of the demonstration project, and designing a value chain financing system applicable in Mongolia based on the results of the demonstration project.</p> <p>(2) Manage the project progress of the survey conducted by the contractor.</p> <p>MOFALI, in collaboration with the SME Agency will take the lead in managing the project progress of the study conducted by the contractor. In the demonstration project, decisions regarding the selection of the target value chain and the commercial banks for linkage will be made based on the advice of the contractor. A system will be established to enable MOFALI's regional agricultural administration staff to coordinate among the value chain stakeholders involved in the demonstration project.</p> <p>(3) Scrutiny of outsourced output</p> <p>MOFALI, in collaboration with the SME Agency will take the lead in scrutinizing the outputs of the outsourced companies. The opinions of experts from each development partner (especially Worldbank, ADB, IFC, etc.) will also be collected, and if necessary, requests for revisions will be made to the contractors to compile the results of the study.</p> <p>(4) Design a system for a value chain financing program.</p> <p>MOFALI, in collaboration with the SME agency will take the lead in designing the institutional design of the value chain loan system based on the results of the outsourced work. In designing the system, experts from each development partner (especially Worldbank, ADB, IFC, etc.) and commercial bank officials will be consulted to ensure that the system is designed to better suit Mongolia's actual conditions. Once the system design is complete, proceed with the prescribed procedures, including parliamentary deliberations, leading to its institutionalization.</p>	
Input	<p><u>Administration</u></p> <ul style="list-style-type: none"> <li>• Expenses for commissioned research work related to value chain financing</li> <li>• Transportation, meeting fees, etc. for staff of the Agricultural administration of each aimag and soum.</li> </ul>	<p><u>Private</u></p>
Project Cost	Total project cost 931 Million MNT (354,000USD)	
Beneficiary Effects/Impacts	Improved access to finance, especially for SMEs and agro-pastoral cooperatives that are unable to obtain loans due to high credit risk, will facilitate the scaling up of individual businesses. Improved functions related to the collection, shipment, and primary processing of raw materials in agro-pastoral cooperatives will ensure that raw materials are supplied in line with the needs of processors and consumers.	
Consistency with Policy	<p>Vision 2050 4.1.17. Advance green financing, tax and subsidy, and purchasing and incentive programs that promote stable and risk responsive green economic development supported by nature-friendly, efficient, clean technologies and economic consumption.</p> <p>Vision 2050 4.3.20. Reduce interest rates to support business activities and investments.</p>	

Remarks	<ul style="list-style-type: none"> <li>IFC and commercial banks in Mongolia are already studying the feasibility of introducing a value chain financing system. It should be noted that prior coordination with the IFC is required for the implementation of this plan.</li> </ul>
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**Project Implementation Schedule and Budget**

Activities	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
(1) The specifications for implementing this plan will be prepared and a contractor will be selected through public solicitation.											
(2) Manage the project progress of the survey to be conducted by the contractor.											
(3) Scrutiny of outsourced output											
(4) Design a value chain financing system.											
Project cost (Total)	Mil MNT	372	559								931
	Thousand USD	142	212								354

**(2) Action Plan on Preparatory Study to Introduce Warehouse Receipt System**

<b>A/P 10-2: Action Plan on Preparatory Study to Introduce Warehouse Receipt System</b>	
Objective	In order to improve access to finance for SMEs and cooperatives related to the agro-pastoral industry that have difficulty in obtaining loans from the perspective of credit risk, a basic study (including a demonstration project) on the introduction of a warehouse receipt system will be conducted, followed by the design and institutionalization of such a system.
Baseline of A/P	As for the warehouse receipt system, the Mongolian Commodity Exchange has begun to study its introduction, but no demonstration projects have been conducted.
Goal of A/P	A basic study (including a demonstration project) on the introduction of a warehouse receipt system will be conducted, and based on the results, a warehouse receipt system applicable in Mongolia will be established.
Target area	Whole country
Expected Outcomes	<ol style="list-style-type: none"> <li>Examples of warehouse receipt systems in other countries will be collected and reviewed, and a draft of a warehouse securities system considered appropriate for Mongolia will be developed.</li> <li>Commodities to be covered by the warehouse receipt system will be selected.</li> <li>After organizing the results of the demonstration project, the institutional design of the warehouse receipt system will be conducted.</li> <li>The warehouse receipt system is institutionalized.</li> </ol>
Activities	<ol style="list-style-type: none"> <li>The specifications for implementing this plan shall be prepared and a contractor shall be selected through public solicitation.  MOFALI in collaboration with the Mongolian Commodity Exchange will take the lead in preparing specifications for a commissioned project to design a warehouse receipt system. These specifications will include the collection and review of case studies from other countries, the selection of commodities to be covered by the system, the planning and implementation of the demonstration project, and the design of a warehouse receipt system suitable for Mongolia based on the results of the demonstration project.</li> <li>Manage the project progress of the survey conducted by the contractor.  MOFALI in collaboration with the Mongolian Commodity Exchange will take the lead in managing the project progress of the study conducted by the contractor. The selection of items for the warehouse receipt system will be decided after gathering opinions not only from the advice of the contractor, but also from experts of each development partner who have extensive experience in related businesses. In the demonstration project, the target items and the selection of warehouse operators to collaborate with will also be determined based on the advice of the contractor. For coordination among the parties involved in the targeted demonstration projects, such a system will be established where MOFALI's regional agricultural administration department staff will be able to carry out such coordination.</li> <li>Scrutiny of outsourced output</li> </ol>

	<p>MOFALI in collaboration with the Mongolian Commodity Exchange will take the lead in scrutinizing the output of the contractor. The opinions of experts from each development partner (especially Worldbank, ADB, IFC, etc.) will also be collected, and if necessary, requests for revisions will be made to the contractor to compile the findings.</p> <p>(4) Design a system for a warehouse receipt system.</p> <p>MOFALI in collaboration with the Mongolian Commodity Exchange will take the lead in designing the system for the warehouse receipt system based on the results of the work commission. The institutional design will include the registration procedures for warehouse operators and the establishment of warehouse standards that can be certified. In addition, opinions will be exchanged with experts from each development partner (especially Worldbank, ADB, IFC, etc.), and care will be taken to ensure that the system design is aligns with Mongolian conditions. After designing the system, proceed with the prescribed procedures, including parliamentary deliberations, to institutionalize the system.</p>	
Input	<p><u>Administration</u></p> <ul style="list-style-type: none"> <li>• Outsourcing expenses for research work related to the warehouse securities system</li> <li>• Transportation, meeting fees, etc. for the staff of the agricultural administration of each aimag and soum.</li> </ul>	<p><u>Private</u></p>
Project Cost	Total project cost 655 Million MNT (249,000 USD)	
Beneficiary Effects/Impacts	Improved access to finance, especially for SMEs and agro-pastoral cooperatives that are unable to obtain loans due to high credit risk, will facilitate the scaling up of individual businesses.	
Consistency with Policy	<p>Vision 2050 4.1.17. Advance green financing, tax and subsidy, and purchasing and incentive programs that promote stable and risk responsive green economic development supported by nature-friendly, efficient, clean technologies and economic consumption.</p> <p>Vision 2050 4.3.20. Reduce interest rates to support business activities and investments.</p>	
Remarks	<ul style="list-style-type: none"> <li>• Coordinate opinions with relevant development partners in the design of the warehouse receipt system.</li> </ul>	

#### Project Implementation Schedule and Budget

Activities	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
(1) The specifications for implementing this plan will be prepared and a contractor will be selected through public solicitation.											
(2) Manage the project progress of the survey to be conducted by the contractor.											
(3) Scrutiny of outsourced output											
(4) Design a system for a warehouse securities system.											
Project cost (Total)	Mil MNT	262	393								655
	Thousand USD	100	149								249

### (3) Action Plan on Strengthening Business Management Capacity of SMEs

A/P 10-3: Action Plan on Strengthening Business Management Capacity of SMEs	
Objective	Establish a support system to strengthen the management foundation of SMEs related to agriculture and livestock industry, especially those exporting, and create an environment that facilitates access to expert advice on business management, financial management, product development, sales promotion, marketing, and other aspects of business.
Baseline of A/P	Currently, there is no support system for dispatching experts to SMEs related to the agro-pastoral industry.
Goal of A/P	The number of companies receiving expert dispatch support for SMEs related to the agro-pastoral industry reached 10 per year, for a total of 100 companies.

Target area	Whole country	
Expected Outcomes	<p>(1) A review of similar systems in place in other countries will be conducted.</p> <p>(2) A system for dispatching experts appropriate for Mongolia will be designed.</p> <p>(3) Business and financial management aspects and product development, promotion, and marketing in SMEs related to the agro-pastoral industry that use the program will be strengthened.</p>	
Activities	<p>(1) The specifications for implementing this plan will be prepared and a contractor will be selected through a public solicitation process.</p> <p>MOFALI in collaboration with the SME agency will take the lead in preparing the specifications for the commissioned work to design a support system for dispatching experts to SMEs. The specifications will include the collection and review of case studies from other countries, as well as the design of an expert dispatch system applicable in Mongolia.</p> <p>(2) Manage the project progress of the survey conducted by the contractor.</p> <p>MOFALI in collaboration with SME agency will take the lead in managing the project progress of the survey conducted by the contractor. The contractor will conduct a wide-ranging interview survey of SMEs in the agro-pastoral industry to identify their support needs. MOFALI will also survey service providers of business management consulting to identify their human resources and service content.</p> <p>(3) Scrutiny of outsourced output</p> <p>MOFALI in collaboration with the SME Agency will take the lead in scrutinizing the output of the contractor. The draft institutional design proposed by the contractor will be revised based on the opinions of private organizations belonging to the agro-pastoral industry (MNCCI, related associations, etc.).</p> <p>(4) Design an expert dispatch program for SMEs.</p> <p>MOFALI in collaboration with the SME Agency will take the lead in designing the expert dispatch system based on the results of the outsourced work. During the designing process of the system, opinions will be exchanged with experts from each development partner and private organizations related to the agro-pastoral industry to ensure that the system is designed more in line with the actual situation in Mongolia. Once the system is designed, it will be institutionalized through the prescribed procedures, including parliamentary deliberations.</p> <p>(5) The system is operated by the SME agency.</p> <p>The SME agency will take the lead in operating the expert dispatch system. Since this program is intended to promote matching between business management experts and SMEs in the agricultural and pastoral industries, the subsidy under the program will be small (specifically, only the initial dispatch of the expert will be covered by the government).</p>	
Input	<p><u>Administration</u></p> <ul style="list-style-type: none"> <li>• Outsourcing expenses for basic research necessary for institutional design</li> <li>• Subsidy for expert dispatch program</li> <li>• Transportation, meeting fees, etc. for staff of the agricultural administration of each aimag and soum.</li> </ul>	<p><u>Private</u></p>
Project Cost	Total project cost 500 Million MNT (190,000 USD)	
Beneficiary Effects/Impacts	The dispatch of experts will review the management of SME businesses. This will improve the efficiency of financial management and product manufacturing, resulting in improved profitability.	
Consistency with Policy	<p>Vision 2050 4.1.17. Advance green financing, tax and subsidy, and purchasing and incentive programs that promote stable and risk responsive green economic development supported by nature-friendly, efficient, clean technologies and economic consumption.</p> <p>Vision 2050 4.3.20. Reduce interest rates to support business activities and investments.</p>	
Remarks		

Project Implementation Schedule and Budget

Activities	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
(1) The specifications for implementing this plan will be prepared and a contractor will be selected through public solicitation.											
(2) Manage the project progress of the survey to be conducted by the											

contractor.												
(3) Scrutiny of outsourced output												
(4) Design an expert dispatch system for SMEs.												
(5) The system is operated by the Small and Medium Enterprise Agency.												
Project cost (Total)	Mil MNT	160	190	30	30	30	30	30				500
	Thousand USD	63	72	11	11	11	11	11				190

#### (4) Action Plan on Strengthening the Business Management Capacity of Agricultural Cooperatives

A/P 10-4: Action Plan on Strengthening the Business Management Capacity of Agricultural Cooperatives			
Objective	To strengthen the management base of developing agro-pastoral cooperatives and increase the number of cooperatives that collect, ship, and add value to agro-pastoral products on a cooperative basis through study tours of cooperatives that are making advanced efforts and training programs to strengthen cooperative organizations.		
Baseline of A/P	The number of agro-pastoral cooperatives actually conducting business activities such as collection and shipment of agro-pastoral products and primary processing is limited at this point.		
Goal of A/P	Increase the number of agro-pastoral cooperatives actually conducting business activities such as collection and shipping of agro-pastoral products and primary processing to 230.		
Target area	Whole country		
Expected Outcomes	(1) Business activities and management realities conducted by agro-pastoral cooperatives will be organized. (2) Training will be provided to agricultural and pastoral cooperatives to help strengthen the management foundation of the cooperatives.		
Activities	(1) Survey of needs for capacity building of existing agro-pastoral cooperatives A survey of existing agro-pastoral cooperatives will be conducted by staff from the agricultural department of each aimag and soum. This survey will mainly focus on the business activities of each cooperative, and will identify the profitability and challenges of the business, as well as the training needs for business development. (2) Select agricultural and pastoral cooperatives for the project. The agricultural department of each aimag will take the lead in selecting agro-pastoral cooperatives in need of organizational strengthening. The selection will be based on the development policy of each aimag, the business development potential of the cooperative, and its past activities as a cooperative. (3) Training will be provided to the agro-pastoral cooperatives selected for the project. The agricultural department of each aimag will take the lead in providing training to agricultural and pastoral cooperatives. The training will likely to include: 1) study visits to cooperatives that are implementing advanced initiatives; 2) training related to business management, including production management, financial management, and inventory management; and 3) review of the articles of incorporation of the cooperatives. (4) Monitoring To assess and verify the effectiveness of the project after its implementation, monitoring will be carried out for the agro-pastoral cooperatives that have participated in the training.		
Input	<table border="0"> <tr> <td style="vertical-align: top;"> <u>Administration</u> <ul style="list-style-type: none"> <li>• Transportation, meeting fees, etc. for staff of the agricultural administration of each aimag and soum.</li> <li>• Training expenses for agro-pastoral cooperatives</li> </ul> </td> <td style="vertical-align: top; padding-left: 20px;"> <u>Private</u> </td> </tr> </table>	<u>Administration</u> <ul style="list-style-type: none"> <li>• Transportation, meeting fees, etc. for staff of the agricultural administration of each aimag and soum.</li> <li>• Training expenses for agro-pastoral cooperatives</li> </ul>	<u>Private</u>
<u>Administration</u> <ul style="list-style-type: none"> <li>• Transportation, meeting fees, etc. for staff of the agricultural administration of each aimag and soum.</li> <li>• Training expenses for agro-pastoral cooperatives</li> </ul>	<u>Private</u>		
Project Cost	Total project cost 1,897 Million MNT (722,000 USD)		
Beneficiary Effects/Impacts	Strengthening the governance of the cooperatives will improve their external creditworthiness and improve access to finance for agro-pastoral cooperatives. It will also improve the business initiatives of the cooperatives and improve the profitability of the cooperatives and their members.		

Consistency with Policy	Vision 2050 3.3.1 Form a value chain with access to capital and markets for cooperative businesses in aimag and soum. Ensure that the cooperatives are connected to the supply chain as a business that increases employment in the cooperatives.
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Project Implementation Schedule and Budget

Activities	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
(1) Survey of needs for capacity building of existing agro-pastoral cooperatives											
(2) Select agricultural and pastoral cooperatives for the project.											
(3) Training will be provided to the agricultural and pastoral cooperatives selected for the project.											
(4) Monitoring											
Project cost (Total)	Mil MNT	379	300	300	300	300	9	9			1,897
	Thousand USD	146	114	114	114	114	3	3			722

4.2.11 Regional agriculture and pastoral industry promotion program

Regional Agriculture and Pastoral Industry Promotion Program

Various export clusters have been formed in Mongolia with the support of development partners. Currently, a cosmetics cluster, a sea buckthorn cluster, a honey cluster, and other clusters have been formed around the MNCCI, and efforts are being made to export to the EU, Japan, and China markets. In the future, it is necessary to institutionalize these efforts so that they will not be transitory, and to expand the support system for the clusters. In addition, the OVOP movement and the development of industrial centers, including the establishment of industrial parks, are necessary for the development of local agricultural and pastoral industries.

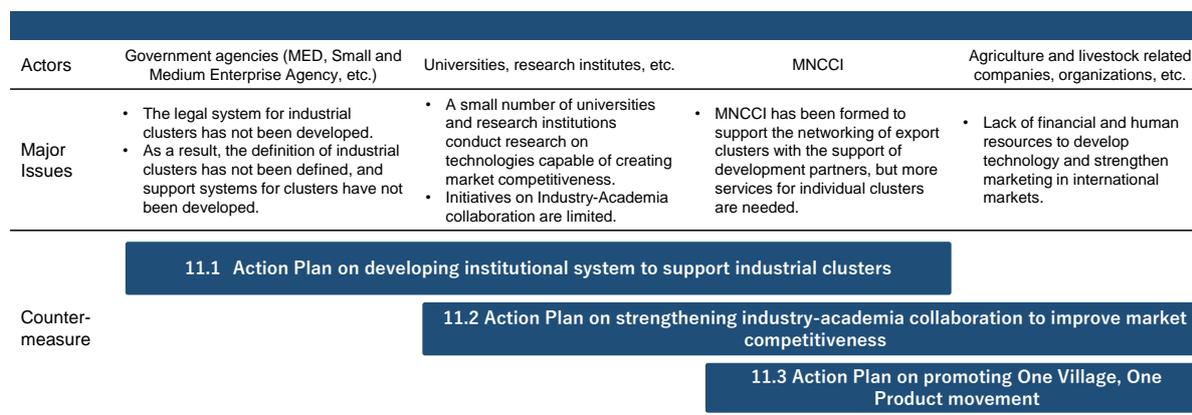


Figure 4.13 Regional agriculture and pastoral industry promotion program

Source: JICA Project Team

The regional agriculture and pastoral industry promotion program is a program aimed to create an environment to enhance market competitiveness in the rural agro-pastoral industry. The table herein below shows the relationship between the plan and the development guidelines.

Table 4.11 Relevance of regional agriculture and pastoral industry promotion program and development directions

Direction of	Specific issues, strengths, and development guidelines	Regional Agriculture and Pastoral Industry Promotion Program		
		11.1	11.2	11.3
Direction of	4-1-1 Development of legal framework for cluster development	◎	○	
	4-1-2 Implementation of a support system for export clusters	◎	○	

Specific issues, strengths, and development guidelines	Regional Agriculture and Pastoral Industry Promotion Program		
	11.1	11.2	11.3
	<b>Development</b> 4-1-3 Assignment of Industry-Academia Collaboration Coordinators 4-2-1 Formation of regional logistics centers 4-2-2 One Village, One Product Movement	○	◎

○: strongly linked, ◎: very strongly linked

Source: JICA Project Team

The following is a summary of each plan.

**Action Plan on Developing Institutional System to Support Industrial Clusters** aims to institutionalize industrial clusters that lacks a clear institutional basis, and to establish a support system for industrial clusters that have been formed, based on the cluster development guidelines developed by the MONMAP-AVC, promote the formation of a system that clarifies the roles of the public and private sectors in cluster development, and establish a mechanism to support private-sector-led initiatives such as joint marketing in the international market.

**Action Plan on Strengthening Industry-academia Collaboration to Improve Market Competitiveness** is a plan to assign industry-academia collaboration coordinators mainly at universities and research institutes related to agriculture and pasture to strengthen matching and collaboration between the two sides. The plan is intended to promote the utilization of knowledge and technology generated at universities in the industrial field, and to establish a mechanism to support this effort.

Under the " **Action Plan on promoting One Village, One Product movement** " the OVOP concept will be disseminated and promoted in order to stimulate the production and sales of specialty agro-pastoral products in rural areas. At the same time, a brand committee will be established to certify local brands of agro-pastoral products, and an organization will be formed to support the development of agro-pastoral products, thereby building a system that can provide products that appeal to urban residents and tourists in Mongolia.

**(1) Action Plan on Developing Institutional System to Support Industrial Clusters**

A/P 11-1: Action Plan on Developing Institutional System to Support Industrial Clusters	
Objective	For industrial cluster development, identify definitions and requirements for industrial clusters and establish a support system for qualified industrial clusters.
Baseline of A/P	At this time, there is no support system for industrial cluster development.
Goal of A/P	Establish a support system for the development of industrial clusters.
Target area	Whole country
Expected Outcomes	(1) Definitions and requirements for industrial clusters in Mongolia will be organized. (2) A support system for industrial clusters that meet the requirements will be established. (3) A support system for industrial clusters that meet the requirements will be operated. (4) Monitoring will be conducted on the operation of the established system, and its effectiveness will be measured and evaluated.
Activities	(1) Organize a meeting to institutionalize the industrial cluster.  MOFALI, in collaboration with the SME agency will play a central role in setting up a conference body for the institutionalization of industrial cluster development, and discussions will be held at the conference. The guideline for cluster development, jointly prepared by MONMAP-AVC and the faculty of economics of the national university of Mongolia, has already organized the concept of cluster development, including examples from Mongolia and other countries. This guideline will be used to clearly define what constitute an industrial cluster and the requirements for its recognition as a cluster.

	<p>(2) Establish a support system for industrial clusters.</p> <p>Organize support programs to be implemented by the government for industrial clusters that meet the requirements. The role of the public sector in cluster development should be considered with an emphasis on promoting competition among clusters. Specifically, the government should evaluate the efforts and performance of clusters and provide subsidies to support best practices. It is also desirable to consider a mechanism to provide low-interest loans to companies belonging to clusters on a preferential basis.</p> <p>(3) Establish a system for implementing support programs for industrial clusters.</p> <p>A system for applying the support system for industrial clusters will be developed. While the Small and Medium Enterprise Agency will mainly be responsible for overall supervision, it will be necessary to coordinate with MEDs, commercial banks, universities, and other research institutions involved in fostering local industries. In addition, developing a monitoring system within the government during the implementation of the system is necessary.</p> <p>(4) Operate a support system for industrial clusters.</p> <p>Based on the established system, start operating the support system.</p>	
Input	<p><u>Administration</u></p> <ul style="list-style-type: none"> <li>• Assignment of experts for institution building</li> <li>• Expenses for system operation (e.g., subsidies for clusters)</li> <li>• Meeting and transportation expenses</li> </ul>	<p><u>Private</u></p>
Project Cost	Total project cost: 9,031 Million MNT (3,437,000 USD)	
Beneficiary Effects/Impacts	The institutionalization of a support system for industrial clusters will accelerate efforts to develop clusters in Mongolia. This will promote the development of competitive products in domestic and international markets.	
Consistency with Policy	Vision 2050 4.2.20. identify and brand priority creative industry sectors and industry clusters	
Remarks	Cluster development guideline shall be used as a reference.	

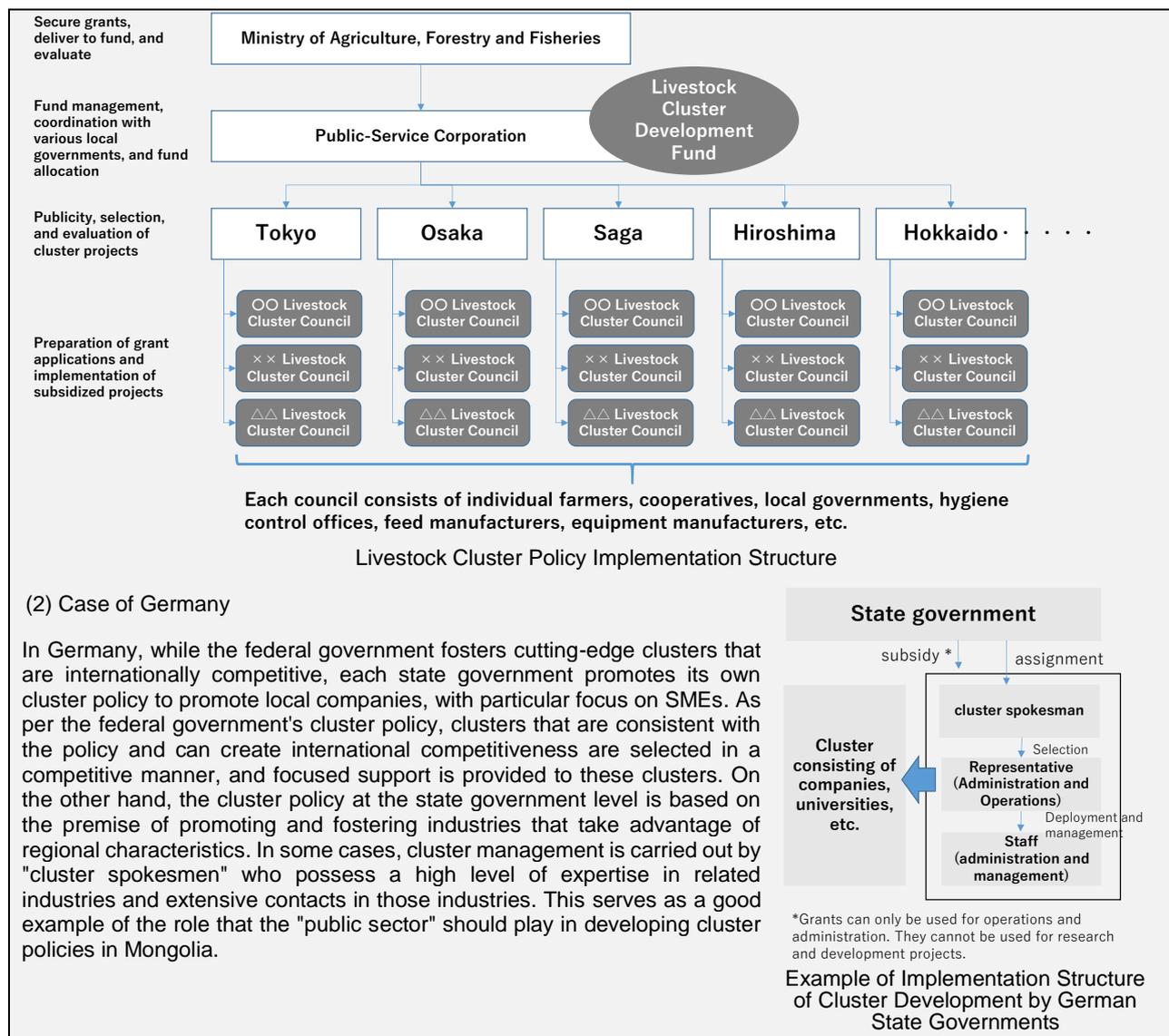
**Project Implementation Schedule and Budget**

Activities		2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
(1) Hold meetings to institutionalize industrial clusters.												
(2) Establish a support system for industrial clusters.												
(3) Establish an implementation system for the support system for industrial clusters.												
(4) Operate a support system for industrial clusters.												
Project cost (Total)	Mil MNT	31	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	9,031
	Thousand USD	17	380	380	380	380	380	380	380	380	380	3,437

**Box. Examples of Cluster Policies in Other Countries**

(1) Case of Japan

Since 2014, Japan's Ministry of Agriculture, Forestry, and Fisheries (MAFF) has been implementing a policy to promote livestock clusters. These clusters represent a system in which livestock farmers and other related businesses in the region collaborate to achieve highly profitable livestock production on a region-wide basis. The policy's objectives are 1) to reduce the cost of livestock production, 2) to add value, and 3) to create new demand, and to provide consumers with valuable livestock products, including those for export. The implementation structure of this policy is shown in the figure herein below. A public interest incorporated association manages the Livestock Industry Cluster Development Fund (funded by a subsidy from the MAFF), and subsidies are granted to "livestock cluster councils" selected by each local government. These councils, comprising of individual farmers, cooperatives, local governments, sanitation centers, feed makers, and equipment manufacturers, receive subsidies for projects that involved cooperation with various actors. The concept of providing support to "councils" comprised of various related actors is considered as a useful approach in Mongolia for promoting cooperation, coordination, and networking within the private sector.



**(2) Action Plan on Strengthening Industry-academia Collaboration to Improve Market Competitiveness**

A/P 11-2: Action Plan on Strengthening Industry-academia Collaboration to Improve Market Competitiveness	
Objective	Strengthen industry-academia collaboration to promote the creation of competitive products in domestic and international markets.
Baseline of A/P	At present, there is no support system for the assignment of industry-academia collaboration coordinators at universities and research institutes related to agriculture and pasture.
Goal of A/P	Establish a system to assign industry-academia collaboration coordinators to agro-pastoral related universities and research institutions.
Target area	Whole country
Expected Outcomes	(1) A system for the assignment of industry-academia collaboration coordinators will be established. (2) The industry-academia collaboration coordinator system is put into operation. (3) Monitoring will be conducted on the operation of the established system, and its effectiveness will be measured and evaluated.
Activities	(1) Hold meetings to institutionalize the assignment of industry-academia collaboration coordinators. MOFALI will take the lead in establishing a conference body to institutionalize the assignment of

	<p>coordinators for industry-academia collaboration and promote discussions at this conference. In particular, the qualities required for coordinators. As well as the roles and outcomes that coordinators they should fulfill will be clearly defined. These coordinators for industry-academia collaboration will mainly belong to the respective universities and research institutes, and where appropriate, consideration will be given to having existing staff members serve concurrently in these roles.</p> <p>(2) Establish a system for the assignment of industry-academia collaboration coordinators.</p> <p>The institutionalization process will be conducted based on the aforementioned discussions and prescribed procedures. In cases where coordination with other ministries and agencies is necessary, MOFALI will take the lead in the institutionalization procedures.</p> <p>(3) Establish an implementation system for the industry-academia collaboration coordinator system.</p> <p>Establish a system to apply the industry-academia collaboration coordinator system; MOFALI will be responsible for overall supervision, but in addition to coordination with universities and other research institutions, it is considered necessary to establish a monitoring system as an administrative body at the time of system implementation.</p> <p>(4) Operate a support system for industrial clusters.</p> <p>Based on the established system, start operating the support system.</p>	
Input	<p><u>Administration</u></p> <ul style="list-style-type: none"> <li>• Assignment of experts for institution building</li> <li>• Expenses for system operation (e.g., personnel expenses for industry-academia collaboration coordinators)</li> <li>• Meeting and transportation expenses</li> </ul>	<p><u>Private</u></p>
Project Cost	Total project cost: 1,906 Million MNT (725,000 USD)	
Beneficiary Effects/Impacts	The institutionalization of industry-academia collaboration coordinators will accelerate efforts to develop clusters in Mongolia. This will promote the development of competitive products in the domestic and international markets.	
Consistency with Policy	Vision 2050 4.2.20. identify and brand priority creative industry sectors and industry clusters	

#### Project Implementation Schedule and Budget

Activities	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
(1) Hold meetings to institutionalize industrial clusters.											
(2) Establish a support system for industrial clusters.											
(3) Establish an implementation system for the support system for industrial clusters.											
(4) Operate a support system for industrial clusters.											
Project cost (Total)	Mil MNT	31	375	375	375	375	375				1,906
	Thousand USD	15	142	142	142	142	142				725

### (3) Action Plan on Promoting One Village, One Product movement

A/P 11-3: Action Plan on Promoting One Village, One Product Movement	
Objective	Develop an OVOP movement based on the effective use of each region's resources, geographical strengths and weaknesses, etc., to encourage the revitalization of local agricultural and pastoral industries.
Baseline of A/P	At present, there is no system in place to promote and raise awareness of the OVOP movement and to support such efforts.
Goal of A/P	Expand the number of aimags that have initiated OVOP movement to 22.
Target area	Whole country
Expected	(1) Human resource development related to the promotion and awareness of the OVOP Movement

Outcomes	<p>will be conducted.</p> <p>(2) OVOP promotion and awareness activities will be held at each aimag and soum.</p> <p>(3) Each aimag will organize a committee to certify its own brand.</p> <p>(4) An organization will be formed to support the manufacturing and marketing activities at each aimag.</p>	
Activities	<p>(1) Human resource development related to the dissemination and promotion of the OVOP Movement.</p> <p>OVOP training will be conducted for staff in charge of economic development in the agricultural department and governor's office of each aimag. This will include case studies of OVOP initiatives in Japan and other countries. In addition, training will also be provided in neighboring countries (Kyrgyzstan and Kazakhstan) to observe examples of OVOP initiatives in those countries.</p> <p>(2) Promotion of the OVOP Movement in each aimag and soum and implementation of awareness-raising activities.</p> <p>In each aimag and soum, economic development staff from the department of agriculture and the governor's office will take the lead in identifying agricultural and pastoral products and resources that are strong in each region. Subsequently, public and private sector stakeholders will be brought together to develop a plan of action to foster competitive regional brands.</p> <p>(3) Establishment of a unique brand certification committee in each aimag</p> <p>A committee for brand certification will be established in each aimag. Committee members should be selected from university, local large business company, and other individuals who can scrutinize product quality and are influential in terms of public relations. The economic development staff of the department of agriculture and the governor's office will coordinate meeting of this committee to be held once in a year.</p> <p>(4) Formation of organizations to support manufacturing and marketing</p> <p>In order to ensure the competitiveness of agricultural and pastoral products produced through the OVOP Movement, a separate organization will be formed to provide manufacturing and marketing support. MNCCI, which has branches throughout Mongolia, is expected to play this role, but collaboration with private companies interested in fostering local industry will also be explored and considered. The goal is to create an organization capable of building a series of supply chains, from manufacturing to actual marketing, and to establish a system and the government supports this process.</p>	
Input	<p><u>Administration</u></p> <ul style="list-style-type: none"> <li>• Training expenses for the dissemination and awareness of the OVOP Movement</li> <li>• Operating expenses for the Brand Certification Committee</li> </ul>	<p><u>Private</u></p>
Project Cost	Total project cost: 10.9 Million MNT (414,000 USD)	
Beneficiary Effects/Impacts	The production and sale of unique and marketable agro-pastoral products will be promoted in each aimag, and the local agro-pastoral industry will be stimulated.	
Consistency with Policy	Vision 2050 4.2.20. identify and brand priority creative industry sectors and industry clusters	
Remarks		

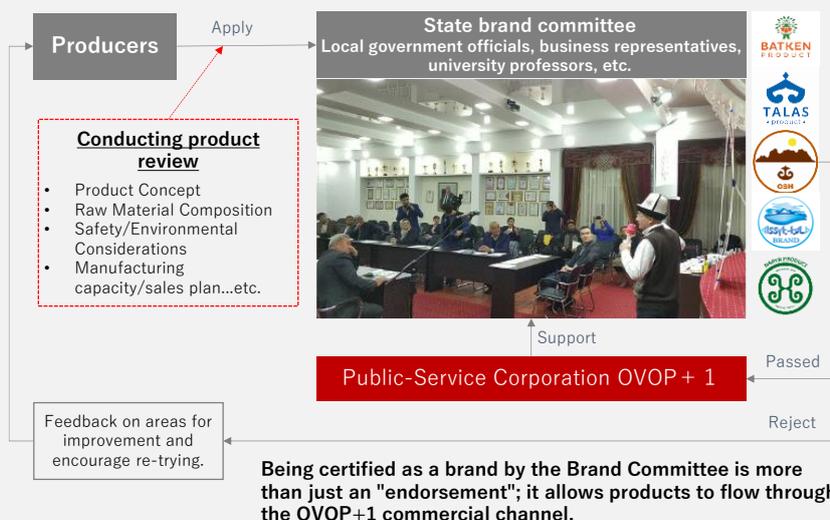
Project Implementation Schedule and Budget

Activities	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
(1) Human resource development related to the dissemination and promotion of the OVOP Movement											
Promotion of the OVOP Movement in each aimag and soum and implementation of educational activities											
(3) Establishment of a unique brand certification committee in each aimag											
(4) Formation of organizations to support manufacturing and marketing											

Project cost (Total)	Mil MNT	200	282	83	75	75	75	75	75	75	75	1,090
	Thousand USD	80	107	31	28	28	28	28	28	28	28	414

**Box: Case Study of the One Village, One Product Project in Kyrgyzstan**

In Kyrgyzstan, the OVOP project, implemented by JICA, is greatly contributing to the revitalization of local industry in Kyrgyzstan. This JICA project is a public interest corporation (corporation name: OVOP+1) that serves as a link between local producers and consumers in Kyrgyzstan and abroad. OVOP+1 is responsible for product development, development of production technology, operation of stores to sell products, and securing distribution networks. To date, the OVOP store handles more than 2,000 products, which has not only increased sales of these products but also provided work opportunities and income for local producers, especially women and young people. Although many public officials and private businesses in Mongolia understand the concept of the OVOP Movement, its implementation has not been very active. This section introduces a few examples from the OVOP project in Kyrgyzstan that can be particularly helpful in promoting the revitalization of local industries in Mongolia. The first is the formation of an organization that serves as a link between producers and consumers. In Kyrgyzstan's case this is done through a public interest corporation (OVOP+1). In Mongolia, the MNCCI, with branches in each aimag, could play the aforementioned role. It is essential that this organization possesses 1) the ability to develop products that meet market needs and 2) the marketing ability to its own establish sales channels. Private companies, NGOs, etc. with these capabilities may also be suitable candidates. Second is the introduction of a "brand committee" in each administrative district (e.g., aimag). Such committees will examine the products produced in the region, and only those that pass the examination will be certified as regional brand products, allowing them to display the brand logo on the products. Members of the "Brand Committee" include local government officials, representatives of private companies, university professors and others who act as "cheerleaders" to promote the product to consumers, are selected after passing out the rigorous screening and subsequently, been certified. In addition, products certified by the "Brand Committee" as regional brand products have the privilege of being placed in OVOP+1's commercial channels (OVOP stores, souvenir stores, supermarkets, etc.), so that product manufacturers can find high value in acquiring a regional brand. MONMAP-AVC has conducted training programs for several government officials and private sector business individuals to observe the OVOP project in Kyrgyzstan, fostering a good understanding of the project's activities. It is hoped that the OVOP Movement in Mongolia can be revitalized by utilizing these trained staff members and private businesses.



Brand Creation Mechanism of OVOP Project in Kyrgyzstan

## Chapter 5. Implementation Structure of Each Development Program

### 5.1 Relevant Organizations Involved in the Implementation of the Master Plan

The Agro-Pastoral Value Chain Master Plan is envisioned to be implemented under the leadership of MOFALI in coordination with relevant ministries, agencies, local administrations, and donor agencies in the country. The relevant ministries include the Ministry of Economic Development, for regional development planning, Ministry of Finance, for budget coordination, and Ministry of Foreign Affairs, for coordination with donor agencies. Other government agencies include the Small and Medium Enterprises Agency (SMEA), Mongolian Agency for Standardization and Metrology (MASM), the Food Safety Reference Laboratory (FSRL), General Agency of Veterinary Services (GAVS), National Veterinary Institute of Health, the Veterinary Medicine Institute, Agriculture Development Fund, Research and Development Center for Agriculture, Livestock and Light Industry, the Ministry of Nature, Environment and Tourism, National University of Life Sciences, Mongolian National Chamber of Commerce (MNCCI), and others. The General Agency for Specialized Inspection (GASI) was dismantled at the end of 2022 and its functions transferred to the relevant ministries by inspection item; from 2023, MOFALI is responsible for food quality and standards, plant protection, crop seeds, livestock, etc., and the Ministry of Health, for food hygiene management.

Within MOFALI, the main implementing agency of the M/P and A/P, the Department of Policy and Planning manages the overall project, while the Department of Coordination of Agricultural Policy Implementation, Department of Animal Husbandry Policy Implementation Coordination, Department of Light Industry Policy Implementation Coordination, and Department of Food Industry Policy Implementation Coordination manage individual A/Ps.

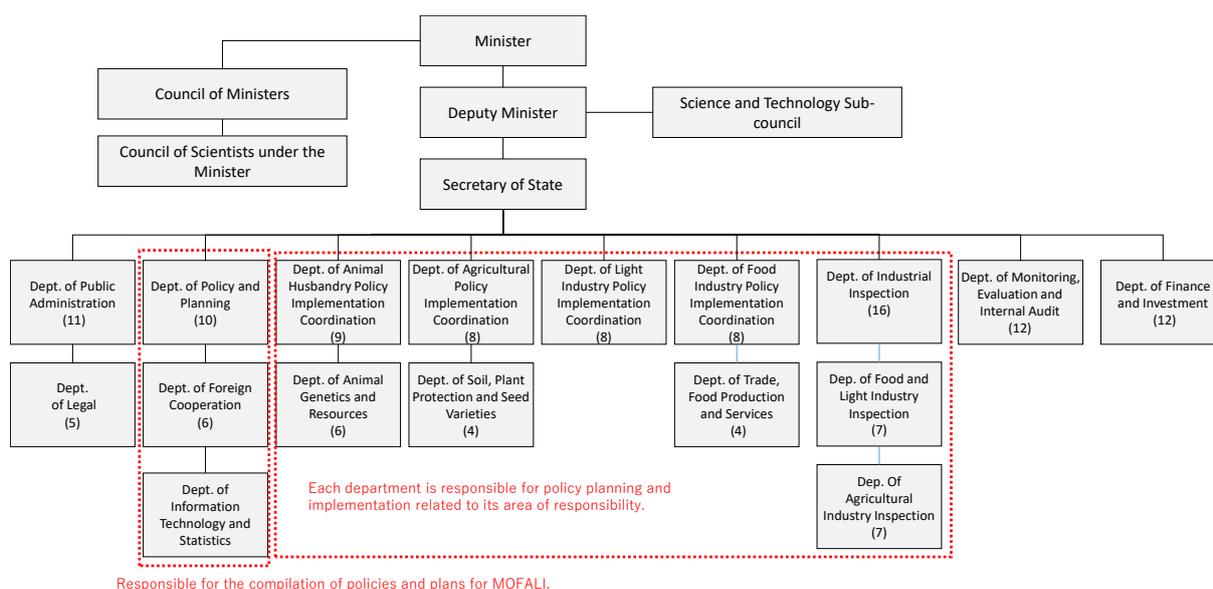


Figure 5.1 MOFALI's organizational structure in the implementation of the M/P

Source: JICA Project Team using data of MOFALI

## **5.2 Implementation Mechanism for Each Development Program**

### **5.2.1 Organizations in charge of each development program**

In general, the development issues related to agro-pastoral value chains are diverse. Issues related to a series of value chains, such as production, processing, distribution, marketing, and export of a single commodity, are currently handled by the departments in charge of each chain. For example, the Department of Coordination of Agricultural Policy Implementation is in charge of issues related to vegetable production, while Department of Food Industry Policy Implementation Coordination is in charge of the distribution and marketing of vegetables and their safety as food products. However, because policy formulations and public investment plans in the agricultural and pastoral sectors are made by individual departments, it is difficult to identify priorities and take measures based on a cross-sectional view of issues related to value chain development for specific commodities. Therefore, the Department of Policy and Planning, which has a diverse staff in charge of agriculture, livestock, light industry, food safety, industrial development, and cooperative development, is also involved in the coordination and priority setting of each policy among the sectors. For operational simplification of the implementation of this M/P, the existing policy-planning flow will be followed. Specifically, the following provisions are made.

- All development programs are under the jurisdiction of one of the following departments: the Department of Agricultural Policy Implementation Coordination, Department of Animal Husbandry Policy Implementation Coordination, Department of Light Industry Policy Implementation Coordination, Department of Food Industry Policy Implementation Coordination and Department of Industrial Inspection.
- Each development program will be administered by the department that has the greatest affinity for the contents of the A/Ps that comprise the program (specifically, the target commodities and characteristics of the development issues).
- When cross-sectoral or cross-ministry measures are required in policy formulation for a development program, the Department of Policy Planning will take the lead in coordination, to determine the roles of stakeholders and implementation priorities.

Additionally, the Department of Finance and Investment will take responsibility for budget management tied to policies compiled by the Department of Policy Planning. The Department of Monitoring, Evaluation, and Internal Audit will monitor each development program that is made into policy, and conduct policy evaluations based on development indicators. While policy formulation and budgeting will be conducted by MOFALI, the local offices under MOFALI will take the lead in policy implementation.

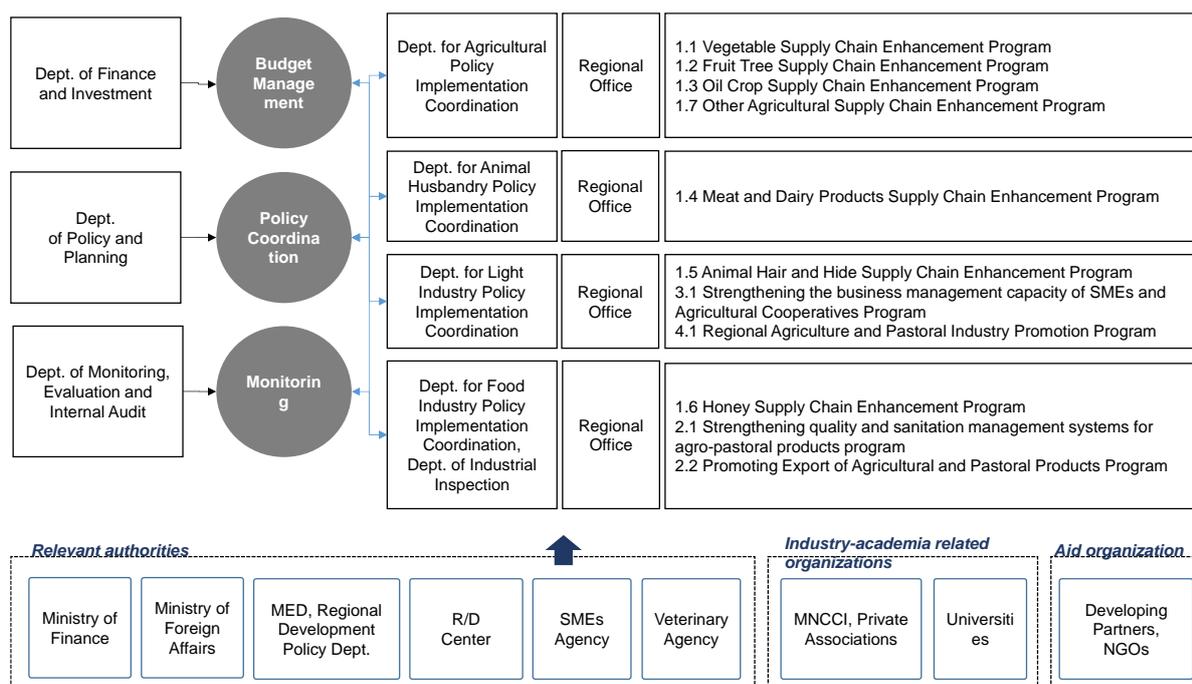


Figure 5.2 Jurisdictional organization and management structure for each development program

Source: JICA Project Team

### 5.2.2 Budgeting for each development program and action plan

#### (1) Schedule for budgeting

Figure 5.3 illustrates the approval process for the budget plan associated with the medium-term strategic and annual A/P documents as stipulated in the Budget Law of July 2023 (amendment)<sup>108</sup>. The medium-term plan associated with this M/P is the Five-Year Basic Development Policy (2025-2029), for which a budget plan is expected to be prepared by April 15, 2024. Once the mid-term strategic document has been approved, the annual budget planning process will begin for the following year, which will be approved by the parliament in November.



Figure 5.3 Budget plan approval process

Source: JICA project team based on the Mongolian Budget Law

#### (2) Budget planning

Budget planning is conducted by the relevant department in charge of each development program. The A/Ps developed in this M/P include information required by the Mongolian Planning Law; however, budgeting of the A/Ps will be done after hearing opinions from the Department of Policy Planning, related organizations

<sup>108</sup> <https://legalinfo.mn/mn/detail/12254>

of other ministries and agencies, and private companies and organizations in related fields. Some A/Ps are implemented by the private sector, with the government providing support. It is essential to consider the degree of government involvement in the activities of related companies, agricultural cooperatives, and individual farmers on a case-by-case basis, to revitalize business activities related to the target commodities. In addition, considering the possibility that a sufficient budget may not be available, it is essential to identify development priorities and create a well-defined budget plan.

In the process of preparing this M/P, workshops were held for officers of the relevant development programs to identify the priorities of the A/Ps for each department, using the Analytic Hierarchy Process<sup>109</sup> (Table 5.1). As shown in the results, 12 A/Ps were selected as the top three priority plans for each responsible department at the time of formulating this M/P; however, it should be noted that these are A/Ps that are deemed to be prioritized from the perspective of each policymaker. During the budgeting process, it is necessary for the Department of Policy Planning to make adjustments in terms of the priority of each A/P, considering consistency with higher-level national plans and requests from private companies and organizations.

Table 5.1 Priorities for each A/P

Development Program	Action Plan	Degree of relative priority	Priority plan
<b>Dept. for Agricultural Policy Implementation Coordination</b>			
• 1. Vegetable Supply Chain Enhancement Program	1-1. Action Plan on expanding vegetable supply period through the introduction of excellent seeds and forcing cultivation	2.593	✓
• 1. Vegetable Supply Chain Enhancement Program	1-2. Action Plan on promoting market-oriented agriculture	2.221	
• 1. Vegetable Supply Chain Enhancement Program	1-3. Action Plan on establishing agricultural products distribution system by agricultural cooperatives	2.395	✓
• 1. Vegetable Supply Chain Enhancement Program	1-4. Action Plan on implementing various training and awareness-raising activities related to simple vegetable processing and consumption	2.127	
• 2. Fruit Supply Chain Enhancement Program	2-1. Action Plan on strengthening the supply chain based on the Fruit Tree Seedling Center	2.266	
• 2. Fruit Supply Chain Enhancement Program	2-2. Action Plan on disseminating appropriate cultivation techniques	2.366	
• 2. Fruit Supply Chain Enhancement Program	2-3. Action Plan on promoting export of sea buckthorn products	2.524	✓
• 3. Oil Crop Supply Chain Enhancement Program	3-1. Action Plan on strengthening of domestic production of rapeseeds	2.264	
• 3. Oil Crop Supply Chain Enhancement Program	3-2. Action Plan on rapeseed production technology development and production support	2.329	
• 3. Oil Crop Supply Chain Enhancement Program	3-3. Action Plan on improving trading system of rapeseeds	2.077	
• 3. Oil Crop Supply Chain Enhancement Program	3-4. Action Plan on increasing consumption of rapeseed oil	2.025	
• 7. Other Agricultural Supply Chain Enhancement Program	7-1. Action Plan on promoting research and dissemination of mushroom production technology	2.312	
• 7. Other Agricultural Supply Chain Enhancement Program	7-2. Action Plan on establishing national standards for mushroom production	2.132	
• 7. Other Agricultural Supply Chain Enhancement Program	7-3. Action Plan on enlightening of mushroom consumption	2.188	
• 7. Other Agricultural Supply Chain Enhancement Program	7-4. Action Plan on developing fish processing facilities aimed at promoting fish diets	2.065	
<b>Dept. for Animal Husbandry Policy Implementation Coordination</b>			
• 4. Meat and Dairy Supply Chain Enhancement Program	4-1. Action Plan on establishing a system for livestock breed improvement	3.000	✓
• 4. Meat and Dairy Supply Chain Enhancement Program	4-2. Action Plan on promoting younger livestock fattening business	2.661	✓
• 4. Meat and Dairy Supply Chain Enhancement Program	4-3. Action Plan on introducing meat grading system based on market needs	1.577	
• 4. Meat and Dairy Supply Chain Enhancement Program	4-4. Action Plan on slaughterhouse modernization	2.068	✓

<sup>109</sup> A process of decision-making by structuring a hierarchical structure of comprehensive human judgment and evaluation mechanisms. One of the decision-making methods in uncertain situations and diverse evaluation criteria.

Development Program	Action Plan	Degree of relative priority	Priority plan
•4. Meat and Dairy Supply Chain Enhancement Program	4-5. Action Plan on promoting pet food business by using by-products from livestock	1.277	
•4. Meat and Dairy Supply Chain Enhancement Program	4-6. Action Plan on improving quality raw milk collection system	1.039	
<b>Dept. for Light Industry Policy Implementation Coordination</b>			
•5. Animal Hair and Hide Supply Chain Enhancement Program	5-2. Action Plan on strengthening the supply chain of raw wool, cashmere, and raw hides based on the herders' cooperatives	2.433	✓
•5. Animal Hair and Hide Supply Chain Enhancement Program	5-3. Action Plan on establishing a sustainable textile and leather production system	2.303	
•5. Animal Hair and Hide Supply Chain Enhancement Program	5-4. Action Plan on developing industrial cluster in textile sector	2.433	✓
•10. Strengthening the business management capacity of SMEs and Agricultural Cooperatives Program	10-1. Action Plan on preparatory study to introduce value chain financing system	2.275	
•10. Strengthening the business management capacity of SMEs and Agricultural Cooperatives Program	10-2. Action Plan on preparatory study to introduce warehouse receipt system	2.065	
•10. Strengthening the business management capacity of SMEs and Agricultural Cooperatives Program	10-3. Action Plan on strengthening business management capacity of SMEs	2.325	
•10. Strengthening the business management capacity of SMEs and Agricultural Cooperatives Program	10-4. Action Plan on strengthening the business management capacity of agricultural cooperatives	2.422	✓
•11. Regional Agriculture and Pastoral Industry Promotion Program	11-1. Action Plan on developing institutional system to support industrial clusters	2.236	
•11. Regional Agriculture and Pastoral Industry Promotion Program	11-2. Action Plan on strengthening industry-academia collaboration to improve market competitiveness	2.201	
•11. Regional Agriculture and Pastoral Industry Promotion Program	11-3. Action Plan on promoting One Village, One Product movement	2.322	
<b>Dept. for Food Industry Policy Implementation Coordination, Dept. of Industrial Inspection</b>			
•6. Honey Supply Chain Enhancement Program	6-1. Action Plan on developing capacity of beekeeping veterinarians and technology for pest and disease-resistant beekeeping	2.193	
•6. Honey Supply Chain Enhancement Program	6-2. Action Plan on strengthening market competitiveness of honey products through the introduction of proper quality assurance system	2.022	
•6. Honey Supply Chain Enhancement Program	6-3. Action Plan on promoting honey exports through honey cluster strengthening	2.171	
•6. Honey Supply Chain Enhancement Program	6-4. Action Plan on promoting beekeeping industry in collaboration with other industries	1.967	
•8. Strengthening quality and sanitation management systems for agro-pastoral products program	8-1. Action Plan on strengthening the capacity of food safety administration	2.459	✓
•8. Strengthening quality and sanitation management systems for agro-pastoral products program	8-2. Action Plan on strengthening export inspection capacities	2.077	
•8. Strengthening quality and sanitation management systems for agro-pastoral products program	8-3. Action Plan on preparatory survey for post-harvest reduction	2.270	✓
•8. Strengthening quality and sanitation management systems for agro-pastoral products program	8-4. Action Plan on training human resources in sanitation and quality control	2.280	✓
•8. Strengthening quality and sanitation management systems for agro-pastoral products program	8-5. Action Plan on strengthening export competitiveness through acquisition of international certification	2.183	
•9. Promoting Export of Agricultural and Pastoral Products Program	9-1. Action Plan on optimizing trade procedures	2.226	
•9. Promoting Export of Agricultural and Pastoral Products Program	9-2. Action Plan on strengthening trade negotiation capabilities	2.114	
•9. Promoting Export of Agricultural and Pastoral Products Program	9-3. Action Plan on strengthening export support	2.248	

Source: JICA Project Team

### 5.2.3 Implementation of each development program and action plan

The A/P with budgetary provisions will be implemented by provincial and *soum*-level government bodies under the direction of the central government (MOFALI). This coordination between the central and local governments for policy implementation has been conducted several times per fiscal year in the existing system. Generally, policy briefings are held for the heads of local agricultural administration offices, and central government officials visit these offices to explain the implementation guidelines for individual policies. The implementation of this M/P is expected to follow the same mechanism. However, when budgets and human resources are not plentiful, it is difficult to ensure smooth communication and a shared

understanding between central and local governments regarding policy implementation. Although these problems cannot be solved easily, it is essential to thoroughly implement the following processes to ensure efficient policy implementation.

- Clarification of policy objectives and their careful explanation
- Develop procedures, guidelines, and common formats for policy implementation
- Develop indicators and their monitoring methods
- Conduct regular meetings for the report of project progress

Considering that this M/P is dedicated to the value-chain development of agro-pastoral products, it is important to explain accurately, its policy significance to local officials. For example, if the policy is to realize an efficient supply of raw materials through the organization of agro-pastoralists, it is important not only to develop the necessary facilities to realize the policy, but also to get the organized agro-pastoralists' business through raw material trade on track. In this regard, it is necessary to select agro-pastoral organizations that are willing to expand their businesses and place more emphasis on capacity-building, related to business management and facility development.

#### 5.2.4 Development indicators and monitoring for each development program/action plan

The figures and statuses related to the baseline and expected results as development indicators for each A/P are presented in Table 5.2. For these indicators, the Department of Monitoring, Evaluation, and Internal Audit will be primarily responsible for collecting and organizing monitoring results; however, actual monitoring activities shall be conducted periodically by the department in charge of each A/P, in coordination with the local Agricultural Administration staff. Although most A/Ps are 10-year long-term plans, their implementation and achievement shall be evaluated every year; if necessary, the plans shall be revised before the annual budget plan is formulated.

Table 5.2 Development indicators for each A/P

Action Plan	Indicator	Baseline	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
1-1. Action Plan on expanding vegetable supply period through the introduction of excellent seeds and forcing cultivation	Vegetable production volume per year	148,859 ton	157,859 ton	166,859 ton	175,859 ton	184,859 ton	193,859 ton	202,859 ton	211,859 ton	220,859 ton	229,859 ton	238,859 ton
1-2. Action Plan on promoting market-oriented agriculture	Farmer's Average Revenue per year	3,600,000 MNT/year	3,750,000 MNT/year	3,900,000 MNT/year	4,050,000 MNT/year	4,200,000 MNT/year	4,350,000 MNT/year	4,500,000 MNT/year	4,650,000 MNT/year	4,800,000 MNT/year		
1-3. Action Plan on establishing agricultural products distribution system by agricultural cooperatives	Number of cooperatives with enhanced capacity	10 Cooperatives	10 Cooperatives	20 Cooperatives	30 Cooperatives	50 Cooperatives	70 Cooperatives	100 Cooperatives				
1-4. Action Plan on implementing various training and awareness-raising activities related to simple vegetable processing and consumption	Vegetable consumption volume per person	2.1kg/Person	2.1 kg/Person	2.2 kg/Person	2.3 kg/Person	2.4 kg/Person	2.5 kg/Person	2.6 kg/Person	2.7 kg/Person	2.8 kg/Person	2.9 kg/Person	3.0 kg/Person

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Action Plan	Indicator	Baseline	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
2-1. Action Plan on strengthening the supply chain based on the Fruit Tree Seedling Center	Number of seedling produced by seedling centers	0	0	100,000 seedling /year	200,000 seedling /year	300,000 seedling /year	400,000 seedling /year	500,000 seedling /year	600,000 seedling /year	700,000 seedling /year	800,000 seedling /year	1,000,000 seedling /year
2-2. Action Plan on disseminating appropriate cultivation techniques	Number of farmers trained in proper cultivation techniques	0	0	500 Person	1,000 Person	1,500 Person	2,000 Person	2,500 Person				
2-3. Action Plan on promoting export of sea buckthorn products	Total Export Value of sea buckthorn	890 Million MNT	979 Million MNT	1,068 Million MNT	1,157 Million MNT	1,246 Million MNT	1,335 Million MNT	1,424 Million MNT	1,513 Million MNT	1,602 Million MNT	1,691 Million MNT	1,780 Million MNT
3-1. Action Plan on strengthening of domestic production of rapeseeds	Rapeseed production volume per year	0 ton	50 ton	100 ton	150 ton	200 ton	250 ton	300 ton	350 ton	400 ton	450 ton	500 ton
3-2. Action Plan on rapeseed production technology development and production support	Yield of rapeseed	0.6 ton/ha	0.65 ton/ha	0.65 ton/ha	0.65 ton/ha	0.75 ton/ha	0.75 ton/ha	0.75 ton/ha	0.85 ton/ha	0.85 ton/ha	0.85 ton/ha	1.0 ton/ha
3-3. Action Plan on improving trading system of rapeseeds	Planted area of rapeseed per year	17,000 ha	20,300 ha	23,600 ha	26,900 ha	30,200 ha	33,500 ha	36,800 ha	40,100 ha	43,400 ha	46,700 ha	50,000 ha
3-4. Action Plan on enlightening to increase consumption of rapeseed oil	Rape seed oil consumption as a percentage of total oil consumption	10 %	11 %	12 %	13 %	14 %	15 %	16 %	17 %	18 %	19 %	20 %
4-1. Action Plan on establishing a system for livestock breed improvement	Number of provinces establishing a system for livestock breed improvement	5 Provinces	5 Provinces	7 Provinces	9 Provinces	11 Provinces	13 Provinces	15 Provinces	17 Provinces	19 Provinces	21 Provinces	22 Provinces
4-2. Action Plan on promoting younger livestock fattening business	Export volume of Sheep meat	500 ton	2,000 ton	3,000 ton	4,000 ton	5,000 ton	8,000 ton	12,000 ton	16,000 ton	20,000 ton	30,000 ton	50,000 ton
4-3. Action Plan on introducing meat grading system based on market needs	Existence of meat grading system	Non-existent	Non-existent	Exists	Exists	Exists	Exists	Exists	Exists	Exists	Exists	Exists
4-4. Action Plan on slaughterhouse modernization	Ratio of improved slaughterhouse	10%	14%	18%	22%	26%	30%	34%	38%	42%	46%	50%
4-5. Action Plan on promoting pet food business by using by-products from livestock	Export volume of pet food per year	106 ton	110 ton	120 ton	130 ton	140 ton	150 ton					
4-6. Action Plan on improving quality raw milk collection system	Collected milk volume per year	40,000 ton	42,000 ton	44,000 ton	46,000 ton	48,000 ton	50,000 ton	52,000 ton	54,000 ton	56,000 ton	58,000 ton	60,000 ton
5-2. Action Plan on strengthening the supply chain of raw wool, cashmere, and raw hides based on the herders' cooperatives	Wool and hide supply volume per year from herders' cooperatives	Wool : 50 ton Hide : 3,000 piece	Wool : 50 ton Hide : 3,000 piece	Wool : 1,010 ton Hide : 103,000 piece	Wool : 1,010 ton Hide : 103,000 piece	Wool : 2,240 ton Hide : 231,000 piece	Wool : 3,470 ton Hide : 359,000 piece	Wool : 4,700 ton Hide : 487,000 piece	Wool : 5,930 ton Hide : 615,000 piece	Wool : 7,170 ton Hide : 743,000 piece	Wool : 8,450 ton Hide : 871,000 piece	Wool : 9,600 ton Hide : 1,000,000 piece
5-3. Action Plan on establishing a sustainable textile and leather production system	Number of certified companies	Textile company : 21 Textile company : 17	Textile company : 23 Textile company : 19	Textile company : 25 Textile company : 22	Textile company : 27 社 Textile company : 25	Textile company : 29 Textile company : 28	Textile company : 31 Textile company : 31	Textile company : 33 Textile company : 34	Textile company : 35 Textile company : 37	Textile company : 37 Textile company : 40	Textile company : 39 Textile company : 42	Textile company : 43 Textile company : 44

Master Plan for Agro-Pastoral Value Chain Development in Mongolia

Action Plan	Indicator	Baseline	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
5-4. Action Plan on developing industrial cluster in textile sector	Yarn (HS5109) export volume per year, Clothing (HS61) export volume per year	Yarn : 7.8 ton Clothing : 558 ton	Yarn : 9.0 ton Clothing : 593 ton	Yarn : 10.3 ton Clothing : 628 ton	Yarn : 11.5 ton Clothing : 663 ton	Yarn : 12.8 ton Clothing : 698 ton	Yarn : 14 ton Clothing : 733 ton	Yarn : 15.2 ton Clothing : 768 ton	Yarn : 16.5 ton Clothing : 803 ton	Yarn : 17.7 ton Clothing : 838 ton	Yarn : 19 ton Clothing : 873 ton	Yarn : 20.2 ton Clothing : 908 ton
6-1. Action Plan on developing capacity of beekeeping veterinarians and technology for pest and disease-resistant beekeeping	Percentage of contracts between veterinarians and beekeepers	13%	20%	27%	34%	41%	48%	55%	62%	69%	76%	80%
6-2. Action Plan on strengthening market competitiveness of honey products through the introduction of proper quality assurance system	Traceable honey distribution volume per year	0 ton	10 ton	20 ton	30 ton	40 ton	50 ton	100 ton	130 ton	160 ton	190 ton	200 ton
6-3. Action Plan on promoting honey exports through honey cluster strengthening	Honey export volume per year	0.3 ton	0.5 ton	1.0 ton	5.0 ton	10 ton	20 ton	30 ton	50 ton	70 ton	90 ton	100 ton
6-4. Action Plan on promoting beekeeping industry in collaboration with other industries	Honey production volume	0 t	7 ton	14 ton	21 ton	28 ton	35 ton	42 ton	49 ton	56 ton	63 ton	70 ton
7-1. Action Plan on promoting research and dissemination of mushroom production technology	Number of mushroom growers	50	60	70	80	90	100	150	200	300	400	500
7-2. Action Plan on establishing national standards for mushroom production	Total sales value of mushrooms per year	100 Million MNT	150 Million MNT	200 Million MNT	250 Million MNT	300 Million MNT	350 Million MNT	400 Million MNT	500 Million MNT	650 Million MNT	800 Million MNT	1,000 Million MNT
7-3. Action Plan on enlightening of mushroom consumption	Total mushroom consumption per year	1,000 ton	1,200 ton	1,400 ton	1,600 ton	1,800 ton	2,000 ton					
7-4. Action Plan on developing fish processing facilities aimed at promoting fish diets	Total fish consumption per year	0.18kg	0.2 kg	0.22 kg	0.24 kg	0.26 kg	0.28 kg	0.30 kg	0.30 kg	0.30 kg	0.30 kg	0.30 kg
8-1. Action Plan on strengthening the capacity of food safety administration	Existence of related policy	Non-existent	Non-existent	Non-existent	Exists	Exists	Exists	Exists	Exists	Exists	Exists	Exists
8-2. Action Plan on strengthening export inspection capacities	Existence of related policy	Non-existent	Non-existent	Exists	Exists	Exists	Exists	Exists	Exists	Exists	Exists	Exists
8-3. Action Plan on preparatory survey for post-harvest reduction	Existence of related policy	Non-existent	Non-existent	Exists								
8-4. Action Plan on training human resources in sanitation and quality control	Number of trainers	0 Persons	0 Persons	0 Persons	0 Persons	10 Persons	20 Persons	30 Persons	50 Persons	60 Persons	80 Persons	100 Persons
8-5. Action Plan on strengthening export competitiveness through acquisition of international certification	Number of certifications obtained	0	0	10	20	30	40	50	60	70	90	114
9-1. Action Plan on optimizing trade procedures	Time required for the procedure (hour)	260	260	200	140	106	106	106	106	106	106	106

Action Plan	Indicator	Baseline	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
9-2. Action Plan on strengthening trade negotiation capabilities	Assignment of full-time negotiators	0	0	0	3	3	3	3	3	3	3	3
9-3. Action Plan on strengthening export support	Number of companies assisted	0	100	200	300	400	500	600	700	800	900	1000
10-1. Action Plan on preparatory study to introduce value chain financing system	Existence of institution	Non-existent	Non-existent	Exists								
10-2. Action Plan on preparatory study to introduce warehouse receipt system	Existence of institution	Non-existent	Non-existent	Exists								
10-3. Action Plan on strengthening business management capacity of SMEs	Number of companies assisted	0	10	20	30	40	50	60	70	80	90	100
10-4. Action Plan on strengthening the business management capacity of agricultural cooperatives	Number of cooperatives engaged in business activities such as collection, shipping, and primary processing	10	20	30	40	50	80	110	140	170	200	230
11-1. Action Plan on developing institutional systems to support industrial clusters	Existence of institution	Non-existent	Non-existent	Exists								
11-2. Action Plan on strengthening industry-academia collaborations to improve market competitiveness	Existence of institution	Non-existent	Non-existent	Exists	Exists	Exists	Exists	Exists				
11-3. Action Plan on promoting One Village, One Product movement	Number of provinces that have initiated the OVOP Movement	0	3	3	3	8	8	13	13	22	22	22

Source: JICA project team. Note: Costs in MNT million

## 5.3 Project Costs for Each Development Program

### 5.3.1 Project cost

Table 5.3 shows the implementation schedule and project costs of the action plans, to achieve their goals for the 10-year period from 2025 to 2034. Almost all A/Ps begin in 2025, being 10-year plans. If it is financially or organizationally difficult to start all A/Ps simultaneously, the option of phasing the implementation with reference to the priorities shown in Table 5.1, may be considered. The total project cost for the 10-year period is MNT 625,471 million.

Table 5.3 A/P implementation schedule and project costs

Development Program/ action plan	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total cost
<b>1. Vegetable Supply Chain Enhancement Program</b>											<b>34,346</b>
1-1. Action Plan on expanding vegetable supply period through the introduction of excellent seeds and forcing cultivation	353	750	1,000	1,250	1,500	1,750	2,000	2,250	2,500	2,750	16,103

Development Program/ action plan	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total cost
1-2. Action Plan on promoting market-oriented agriculture	599	700	700	700	700	700	700	800			5,599
1-3. Action Plan on establishing agricultural products distribution system by agricultural cooperatives	255	1,500	1,500	1,500	1,500	1,500					7,755
1-4. Action Plan on implementing various training and awareness-raising activities related to simple vegetable processing and consumption	130	517	517	517	517	517	517	517	517	623	4,889
<b>2. Fruit Supply Chain Enhancement Program</b>											<b>16,849</b>
2-1. Action Plan on strengthening the supply chain based on the Fruit Tree Seedling Center	200	2,000	2,000	2,000	500	500	500	500	500	700	9,400
2-2. Action Plan on disseminating appropriate cultivation techniques	599	700	700	700	700	800					4,199
2-3. Action Plan on promoting export of sea buckthorn products	200	350	350	350	350	350	350	350	350	250	3,250
<b>3. Oil Crop Supply Chain Enhancement Program</b>											<b>8,885</b>
3-1. Action Plan on strengthening of domestic production of rapeseeds	54	77	106	154	193	193	193	193	193	193	1,549
3-2. Action Plan on rapeseed production technology development and production support	430	646	790	740	740	720	720	720	720	720	6,946
3-3. Action Plan on improving trading system of rapeseeds	20	20	20	20	20	20	20	20	20	20	200
3-4. Action Plan on increasing consumption of rapeseed oil	60	50	40	20	20						190
<b>4. Meat and Dairy Products Supply Chain Enhancement Program</b>											<b>187,644</b>
4-1. Action Plan on establishing a system for livestock breed improvement	5,371	5,168	5,168	5,168	5,168	5,168	5,168	5,168	5,168	5,191	51,906
4-2. Action Plan on promoting younger livestock fattening business	331	128	128	128	128	128	128	128	128	151	1,506
4-3. Action Plan on introducing meat grading system based on market needs	388	185	185	185	185	185	185	185	185	208	2,076
4-4. Action Plan on slaughterhouse modernization	5,396	5,193	5,193	5,193	5,193	5,193	5,193	5,193	5,193	5,216	52,156
4-5. Action Plan on promoting pet food business by using by-products from livestock	100	800	800	800	50	50					2,600
4-6. Action Plan on improving quality raw milk collection system	100	8,600	8,600	8,600	8,600	8,600	8,600	8,600	8,600	8,500	77,400
<b>5. Animal Hair and Hide Supply Chain Enhancement Program</b>											<b>289,141</b>
5-2. Action Plan on strengthening the supply chain of raw wool, cashmere, and raw hides based on the herders' cooperatives	25,001	20,363	26,471	26,471	24,435	24,435	20,363	20,363	20,363	20,363	228,628
5-3. Action Plan on establishing a sustainable textile and leather production system	660	1,467	1,467	1,467	1,467	1,467	1,467	1,467	1,467	1,467	13,863
5-4. Action Plan on developing industrial cluster in textile sector	50	8,975	8,925	9,200	9,200	9,200	275	275	275	275	46,650
<b>6. Honey Supply Chain Enhancement Program</b>											<b>8,237</b>
6-1. Action Plan on developing capacity of beekeeping veterinarians and technology for pest and disease-resistant beekeeping	201	160	161	161	149	149	149	136	136	136	1,538
6-2. Action Plan on strengthening market competitiveness of honey products through the introduction of proper quality assurance system	299	276	286	286	310	338	226	237	228	240	2,726
6-3. Action Plan on promoting honey exports through honey cluster strengthening	342	399	183	244	156	183	114	177	110	175	2,083

Development Program/ action plan	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total cost
6-4. Action Plan on promoting beekeeping industry in collaboration with other industries	223	233	201	225	193	183	158	158	158	158	1,890
<b>7. Other Agricultural Supply Chain Enhancement Program</b>											<b>2,340</b>
7-1. Action Plan on promoting research and dissemination of mushroom production technology	70	70	70	70	70	40	40	40	40	40	550
7-2. Action Plan on establishing national standards for mushroom production	60	10	120	25	25	25	25	25	25	25	365
7-3. Action Plan on enlightening of mushroom consumption	105	105	80	80	30						400
7-4. Action Plan on developing fish processing facilities aimed at promoting fish diets	55	136	108	108	103	103	103	103	103	103	1,025
<b>8. Strengthening quality and sanitation management systems for agro-pastoral products program</b>											<b>27,869</b>
8-1. Action Plan on strengthening the capacity of food safety administration	462	423	423	82	82	82	82	82	82	82	1,882
8-2. Action Plan on strengthening export inspection capacities	831	1,254	1,229	696	615	590	590	590	615	590	7,600
8-3. Action Plan on preparatory survey for post-harvest reduction	359	907									1,266
8-4. Action Plan on training human resources in sanitation and quality control	230	266	224	287	273	345	121	104	140	141	2,131
8-5. Action Plan on strengthening export competitiveness through acquisition of international certification	283	533	1,619	1,692	1,559	1,647	1,744	1,850	1,967	2,096	14,990
<b>9. Promoting Export of Agricultural and Pastoral Products Program</b>											<b>34,150</b>
9-1. Action Plan on optimizing trade procedures	159	160	165	168	174	178	188	193	201	207	1,793
9-2. Action Plan on strengthening trade negotiation capabilities	978	976	977	655	675	694	714	695	715	773	7,852
9-3. Action Plan on strengthening export support	760	1,058	2,762	2,421	2,479	2,684	2,733	3,141	3,201	3,266	24,505
<b>10. Strengthening the business management capacity of SMEs and Agricultural Cooperatives Program</b>											<b>3,983</b>
10-1. Action Plan on preparatory study to introduce value chain financing system	372	559									931
10-2. Action Plan on preparatory study to introduce warehouse receipt system	262	393									655
10-3. Action Plan on strengthening business management capacity of SMEs	160	190	30	30	30	30	30				500
10-4. Action Plan on strengthening the business management capacity of agricultural cooperatives	379	300	300	300	300	300	9	9			1,897
<b>11. Regional Agriculture and Pastoral Industry Promotion Program</b>											<b>12,027</b>
11-1. Action Plan on developing institutional system to support industrial clusters	31	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	9,031
11-2. Action Plan on strengthening industry-academia collaboration to improve market competitiveness	31	375	375	375	375	375	0	0	0	0	1,906
11-3. Action Plan on promoting One Village, One Product movement	200	282	83	75	75	75	75	75	75	75	1,090
<b>Total amount</b>	<b>47,149</b>	<b>68,254</b>	<b>75,056</b>	<b>74,143</b>	<b>69,839</b>	<b>70,497</b>	<b>54,480</b>	<b>55,344</b>	<b>54,975</b>	<b>55,734</b>	<b>625,471</b>

Source: JICA project team. Note: Costs are in MNT million.

### 5.3.2 Efforts to secure budget

#### (1) Working with development partners

Several development partners in Mongolia have been providing support to the agro-pastoral sector from various perspectives and approaches. In recent years, there have been cases of insufficient coordination among development partners for synergistic support, resulting in duplication of assistance. Therefore, the Food and Agriculture Development Partner Group (FADPG) was established under the joint sponsorship of MOFALI and the Ministry of Nature, Environment, and Tourism with the support of the FAO and ADB. The purpose of establishing the FADPG is to "improve the quality and frequency of communication among development partners; form a common understanding of key policy priorities and project monitoring, review, and evaluation methods; avoid duplication of activities; facilitate the exchange of information on findings; and promote the development of a transparent approach for investment and support related to the food and agriculture sector".

In the process of preparing this M/P, we were able to explain its contents to the members of the FADPG and had the opportunity to exchange opinions on the M/P. The FADPG can be an effective tool to ensure that development plans in the agro-pastoral sector, including this M/P, are implemented without waste. The FADPG is currently managed by the FAO, ADB, and JICA, but it is necessary to incorporate the secretariat into MOFALI's routine work as a tool for policy implementation and to proactively manage and operate the FADPG, rather than leaving it to development partners. The following are some specific suggestions by which the MOFALI Secretariat can be managed and administered:

**1) Management and operating entity of the secretariat**

Since its establishment, MOFALI and MOET have been involved in the FADPG. Since MOFALI has been leading the FADPG, it is considered appropriate for MOFALI to continue to be responsible for the management and operation of the secretariat. In this case, the secretariat shall be placed in the Overseas Cooperation Division of the Department of Policy Planning to perform the necessary secretariat work related to the FADPG.

**2) Timing on the reviews of FADPG**

Although the original plan was for the FADPG reviews to be held quarterly, consideration must be given to MOFALI officials who have many duties such as policy planning and implementation, preparation of budget plans, and administrative work related to various events. Therefore, it is necessary to minimize the frequency of FADPG meetings and schedule them outside the busy periods of MOFALI officials. Specifically, it would be desirable to hold the FADPG meet twice a year, in May-June and November-December; however, appropriate scheduling should be coordinated on a case-by-case basis, mainly by the Department of Policy Planning.

**3) Topics discussed at the FADPG**

At the FADPG meeting, MOFALI shall explain policy trends and decisions in the agro-pastoral sector, including this M/P, and the support it expects from its development partners. Development Partners shall be provided with opportunities to share information on the progress of projects currently being implemented and of those that are planned or in the planning stage. Assuming that the FADPG meets twice

a year, the following meeting agenda, shown in Table 5.4, can be used in conjunction with the budget planning approval process.

Table 5.4 Draft topics to be discussed at the FADPG

Holding period	MOFALI	Development partners
Around May-June every year	<ul style="list-style-type: none"> <li>• Information sharing on mid-term plan decisions</li> <li>• Issues related to information sharing and policy implementation for the following year's plan</li> <li>• Expected Support from developing partners</li> </ul>	<ul style="list-style-type: none"> <li>• Sharing of project progress being implemented by each development partner.</li> <li>• Sharing information on projects that each development partner plans to implement or are in the planning stage</li> <li>• Requests to the government, etc.</li> </ul>
Around November-December every year	<ul style="list-style-type: none"> <li>• Information sharing regarding decisions for the following year's plan</li> <li>• Information sharing on draft mid-term plan and issues related to policy implementation</li> <li>• Expected Support from developing partners</li> </ul>	

Source: JICA Project Team

## (2) Collaboration with private companies and organizations

By 2030, which is the deadline for achieving Sustainable Development Goals (SDGs), countries worldwide are expected to strengthen their efforts to achieve these goals. The movement to derive sufficient development funds from abundant private sector funds is becoming apparent in Mongolia, and efforts are being made to contribute to the development of the agro-pastoral sector, particularly by mining-related companies with abundant financial resources. In addition, UNDP has published the "MONGOLIA SDG Investor Map,"<sup>110</sup> which identifies potential investment areas in the agro-pastoral sector as follows.

- High nutrient and organic milk and dairy product processing
- Upgrading sustainable wool and cashmere processing plants
- Organic fertilizer produced from animal byproducts and waste
- Energy efficient winter greenhouse
- Artisan cosmetic products made with agricultural byproducts
- Sea buckthorn tree plantations and affiliated products

The above investment areas are highly compatible with the individual A/Ps in this M/P and are expected to be implemented in cooperation with the private sector. In the FADPG reviews, discussions should be held on how to promote development in a manner that involves the private sector.

<sup>110</sup> UNDP, 2023.9, MONGOLIA SDG Investor Map Report on Investment Opportunity Areas, UNDP

## Chapter 6. Conclusion and Recommendation

### 6.1 Conclusion

- This M/P (2025-2034) aims for the promotion of strategic value chains in the agro-pastoral sector, which is necessary to realize "Vision 2050," Mongolia's long-term development plan. Vision 2050 aims to reduce the poverty rate from 28% to 5% and the unemployment rate from 8.6% to 3%. The contribution of the agro-pastoral sector to achieving these goals is of high importance. Vision 2050 also calls for an increase in the share of the manufacturing sector in the GDP from 4.6% to 27.4%, indicating that the agro-pastoral sector should also increase the degree of domestic processing of raw materials.
- The agro-pastoral sector in Mongolia has grown significantly over the past decade (2012-2021). The average agricultural GDP growth rate of 4.25% is higher than the world average of 3.54%, and almost equal to the average for East Asia and the Pacific region, where the agricultural sector has grown particularly rapidly. However, this growth has been driven mainly by the expansion of the scale of production, specifically the expansion of farmland area and an increase in the number of livestock, with limited contributions from productivity and value addition. Given the increasing number of livestock resulting in overgrazing and grassland degradation, and the effects of climate change, the quantitative expansion of the agro-pastoral sector is reaching its limits. In the future, Mongolia's agro-pastoral sector will need to focus on policies to improve productivity and value-addition to agro-pastoral products.
- The basic policy in the agricultural sector is to build a production and supply system that ensures national food security. The country has already achieved 100% self-sufficiency in wheat and potatoes, and with the current production scale and yields, it is expected to maintain 100% self-sufficiency till 2034. However, the current self-sufficiency rates for vegetables, fruits, and vegetable oil are low at 57%, 1%, and 18%, respectively, and efforts to improve these rates are needed. Since Mongolia does not have a climate suitable for agriculture, productivity is lower than that in other countries; hence, it will be necessary not only to expand the scale of production but also to strengthen efforts to improve productivity. Specifically, this requires the establishment of a supply system for high-quality seeds and the dissemination of appropriate cultivation techniques. It is also important to expand the vegetable supply period using winter greenhouse cultivation and storage facilities. In addition, considering people's evolving interests in food products due to the rapid increase in the urban population, it will be necessary to differentiate vegetables compared to imported ones not only in terms of price, but also in terms of quality, hygiene, and reliability.
- Unlike the agricultural sector, the main issue in the pastoral sector is adding value and linking it to domestic consumption and export expansion. In terms of export expansion, in addition to the main market China, exports are expected to expand to Southeast Asia and the Middle East, where the market size is expected to grow. In addition to the general demand for food safety, quality, price, and functionality, international market trends show an increasing demand for products that are more sustainable, environmentally friendly, and compatible with animal welfare.

- Based on the development directions indicated above, the JICA project team, in cooperation and collaboration with MOFALI, MED, academic institutions, private organizations in the agro-pastoral sector, and development partners, prepared this M/P for strategic agro-pastoral value chain promotion based on the findings and lessons learned through the implementation of basic studies and pilot projects in Mongolia. While preparing this M/P, in-depth discussions were held with the above-mentioned organizations and groups, and the direction and contents of the implementation plan for agro-pastoral value chain development were examined. Eleven development programs and 43 A/Ps are listed in this M/P, of which 12 A/Ps have been selected as priority projects by MOFALI counterparts.
- The A/Ps in this M/P were prepared in accordance with the Development Policy Planning and Management Law of Mongolia. Each A/P is developed as a single independent project. While budgeting for the A/Ps, detailed adjustments to priorities and activities will be necessary, but the plan itself is designed to be used flexibly. For example, it does not preclude the implementation of only some components or activities of an A/P. In other words, the A/P should not be viewed as a plan that limits the scope of individual policies or activities but rather as a guideline for what should be done and propose actions based on the best available information and activities.
- In the budgeting and implementation of this M/P, it is extremely important to work with development partners and the private sector, rather than using only the government budget, in order to increase its viability. Therefore, MOFALI, the lead organization of the M/P, is required to proactively create opportunities for dialogue with development partners and private companies related to value chain promotion in the agro-pastoral sector and establish a cooperative framework to achieve each development indicator and realize policy goals.

## 6.2 Recommendation

The following is a list of issues that need to be taken into consideration when implementing measures to achieve the development indicators outlined in Table 5.2, over the 10-year period 2025-2034, toward the goal of **"Realization of a strong Mongolian agro-pastoral industry through strengthening the market competitiveness of agro-pastoral products"** as set forth in this M/P.

### **Reflection of the M/P in the Five-Year Basic Development Policy and the Government Action Plan**

This M/P has been prepared in accordance with the Development Policy Planning and Management Law of Mongolia, but its legal status as a plan will be recognized only when it is reflected in the Five-Year Basic Development Policy and the Government Action Plan, as stipulated by the law. The former covers the period 2025-2029 and the latter covers the period 2024-2028; both are expected to commence in 2024. The JICA project team strongly recommends that MOFALI, which is the lead organization for this M/P, reflect this M/P in both mid-term plans while coordinating policy priorities and activities under the auspices of the Policy Planning Department. As previously mentioned, the A/Ps developed in this M/P do not limit the scope of individual policies or activities. It should be viewed as a guideline for actions to be taken to promote the agro-pastoral value chain and should be used with a flexible approach to its application.

### **Horizontal Development of Good Practices**

While preparing this M/P, the JICA Project Team consulted the World Bank, FAO, ADB, IFC, UNIDO, SDC, UNDP, EU, and many other development partners implementing financial and technical cooperation in the agro-pastoral sector in Mongolia, and confirmed that many good practices have already been established. Some of the A/Ps proposed in this M/P are formulated based on good practices developed by the development partners in the agro-pastoral sector. The JICA Project Team recommends that MOFALI not let these valuable achievements fade away but rather analyze and generalize the factors that led to the success of initiatives and widely implement similar initiatives.

### **Activation of FADPG**

As described in Section 5.3.2, to create synergies among development partners, avoid duplication of support, share knowledge, including good practices, and strengthen coordination between development partners' efforts and central government policies, it is of primary importance that the FADPG is managed and operated by MOFALI. While MOFALI's Policy Planning Department is responsible for the administrative functions of the FADPG, the JICA Project Team recommends that the FADPG function as a consultative forum, for realistic and feasible policy implementation, with the participation of officials from departments in charge of agriculture, livestock, light industry, and other sectors, as necessary.

### **Administrative Operations Management System**

The preparation of this M/P involved face-to-face and online discussions with MOFALI officials and relevant MED departments. Each staff member has a wealth of knowledge in his/her own field and has provided many useful comments during the M/P preparation stage. However, when the officials-in-charge retired, there were cases in which the knowledge of the officials-in-charge was not sufficiently transferred to his/her successors. While it is understandable that administrative work is being done with limited personnel and budget, the JICA Project Team would like to recommend that a more flexible management system be established as an organization, such as by appointing and assigning a deputy-in-charge, in addition to the main officer-in-charge.

### **Cooperation with the Private Sector**

In Mongolia, where the domestic market is small compared to other countries, expanding the exports of agro-pastoral products is extremely important for the development of the agro-pastoral sector. In particular, for food exports, it is essential to negotiate and agree on export/import conditions with the destination country; however, there is a lack of personnel within MOFALI to deal with this issue. In fact, the JICA project team worked closely with MOFALI staff to address the issue of honey export to China, but unfortunately, this did not materialize during the project period, due to a considerable delay in responding to inquiries from the Chinese side. The expansion of agro-pastoral exports is extremely important for the development of the Mongolian agro-pastoral industry, and it is essential to strengthen the MOFALI Secretariat in charge of external negotiations to resolve this issue. In addition, to establish more solid partnerships with private companies that aim to export agro-pastoral products, it is necessary to promote the formation of industrial

clusters consisting of export-oriented companies, and build a system in which the public and private sectors work together to overcome the individual requirements of export destination countries.