# THE REPORT OF DATA COLLECTION SURVEY ON THE PARTNERSHIP BETWEEN THE PRIVATE SECTOR IN HOKKAIDO AND MONGOLIA, CENTRAL ASIA, AND THE CAUCASUS AREA

## Final Report

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Japan International Cooperation Agency (JICA)

Hokkaido Intellect Tank

International Development Center of Japan

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# List of Abbreviations

| Abbreviation | Full name |
|---|---|
| ACG | Azeri-Chirag-Gunashli |
| ADB | Asian Development Bank, |
| ASEAN | Association of South East Asian Nations |
| Azpromo | Azerbaijan Export and Investment Promotion Foundation |
| BDF | Bio Diesel Fuel |
| B&B | Bed & Breakfast |
| BOP | Base of the Economic Pyramid |
| B to B | Business to Business |
| BTC Pipeline | Baku-Tbilisi-Ceyhan Pipeline |
| BTE Pipeline | Baku–Tbilisi–Erzurum Pipeline |
| CIA | Central Intelligence Agency |
| CIS | Commonwealth of Independent States |
| CJSC | Closed Joint Stock Company |
| CPI | Consumer Price Index |
| CSTO | Collective Security Treaty Organization |
| DFR | Draft Final Report |
| EurAsEC(EAEC) | EurAsian Economic Community |
| EEU | Eurasian Economic Union |
| EPA | Economic Partnership Agreement |
| EU | European Union |
| EUR | Euro |
| EXPO | Exposition |
| FAO | Food and Agriculture Organization |
| FIT | Feed-in Tariff |
| FS | Feasibility Study |
| FTA | Free Trade Agreement |
| FR | Final Report |
| GAP | Good Agricultural Practice |
| GDP | Gross Domestic Product |
| GHG | Greenhouse Gas |
| GJ | Giga Joule |
| GOST-R | GOSSTANDART of RUSSIA |
| GPS | Global Positioning System |
| GSP | Generalized System of Preferences |
| GSP+ | Generalized System of Preferences+ |

| Abbreviation | Full name |
|---|---|
| GUAM | GUAM（Georgia, Ukraine, Azerbaijan, Moldova）Organization for Democracy and Economic Development |
| HACCP | Hazard Analysis Critical Control Point |
| HIT | Hokkaido Intellect Tank |
| ICT | Information and Communication Technology |
| IC/R | Inception Report |
| IMF | International Monetary Fund |
| INPEX | International Petroleum Exploration Corporation |
| IT | Information Technology |
| JBIC | Japan Bank for International Cooperation |
| JETRO | Japan External Trade Organization |
| JICA | Japan International Cooperation Agency |
| JOGMEC | Japan Oil, Gas and Metals National Corporation |
| kwh | kilowatt hour |
| LGOTP | Local Government Officials Training Program in Japan |
| MNT | Mongolian Tugrik |
| MOU | Memorandum of Understanding |
| NGO | Non-governmental Organizations |
| NPO | Not-for-Profit Organization |
| NIS | New Independent States |
| NSO | National Statistical Office of Mongolia |
| N/A | Not applicable/not available |
| ODA | Official Development Assistance |
| PPP | Public Private Partnership |
| PR | Public relations |
| SCO | Shanghai Cooperation Organization |
| SCP | South Caucasus Pipeline |
| SOCAR | State Oil Company of Azerbaijan　Republic |
| SOFAZ | The State Oil Fund of Azerbaijan |
| SME | Small Mid Enterprise |
| SNS | Social Network Service |
| SOM | Senior Officials' Meeting |
| PR | Public relations |
| R&D | Research and Development |
| TANAP | Trans Anatolian Natural Gas Pipeline |
| UB | Ulaanbaatar |
| UNCTAD | United Nations Conference on Trade and Development |

| Abbreviation | Full name |
| --- | --- |
| USD | US Dollar |
| WHO | World Health Organization |
| WTO | World Trade Organization |

# Ⅰ Summary

## 1 Background of the Survey

Hokkaido grew from an area with a population of about 60,000 in the Meiji era to the home to 5.7 million people in only a little more than 100 years, as a result of the efforts to develop industries mainly in agriculture, forestry, fishing, and mining and regional development, supported by the land reclamation and development conducted by the government of Japan, as well as the introduction of technologies from overseas and the assistance from international organizations. While Hokkaido is gifted with features promising a great potential, such as vast land, abundant natural resources, fertile fields, and a climate that favors agriculture, the process of regional development has not been an easy one because of harsh environmental conditions in winter, natural disasters, crop failures, pest damage, and other difficulties. Hokkaido has also experienced drastic changes in its economic environment, such as the decline of the coal industry that once was the mainstay of the area and the downturn in fisheries production after the introduction of the 200 nautical mile exclusive economic zone. Although Hokkaido has gained the ability to produce high-quality, price competitive agricultural and livestock products, it is still faced with the problems such as the distance to major consumption centers, and a lack of processing and distribution technologies and workers.

In this situation, Hokkaido has been striving to solve these problems under the development plan of the national government and the strategies of Hokkaido Prefecture and municipalities through industry-government-academia joint initiatives and collaboration. The experience and methods accumulated in such regional development and promotion of industries through government-private collaboration are considered useful for Mongolia, Central Asia, and the Caucasus (hereinafter referred to as “the relevant regions”), which have similar environment and problems.

## 2 Purpose of the Survey

The purpose of this survey was to examine the possibility of collaboration on a private basis and consider the future development of assistance under the JICA scheme (private collaboration projects, etc.) by confirming the policies and directions of the private companies in Hokkaido concerning technologies, resources, and overseas business expansion, as well as the development needs of the relevant regions, and then by conducting the analysis of the possibility of matching between the two parties.

## 3 Survey Implementation Policy

The survey was performed based on the following four points.

(1) Collaboration with the Policies of Japan and Multilateral/Bilateral Efforts

Understanding of the policies of Japan for the assistance to the governments of relevant countries in this survey is expected to help effective promotion and a synergic effect with the projects of related organizations.

(2) Country Analyses Based on the International Situation

Mongolia, Central Asia and the Caucasus have deep historical, economical and political ties to Russia, but attention must also be paid to economic and political impact from China and South Korea. In addition, many frameworks to encourage cooperation and exchange between various countries exist in this region, and attention will be paid to the impact of these policies and agreements.

(3) Discussion Based on the Japanese Policy for Support to Target Countries

To introduce the technologies and expertise of Hokkaido to counterpart countries and promote private collaboration, the actions are based on the needs of the counterpart countries and the strategies of Japan.

(4) Technologies and Knowledge from Hokkaido Applicable to Target Countries

The technologies and expertise of Hokkaido identified based on the study policy in (3) above are summarized in the table below.

Table 3-1 Technologies in Hokkaido That Are Beneficial to the Development of Counterpart Countries

| Category | Feature | Resources in Hokkaido |
|---|---|---|
| Agriculture and stock farming | ・Hokkaido is a large agriculture and stock farming area occupying 1/4 of the arable land area in Japan.<br>・Hokkaido with 1.15 million hectares of farmlands and cool climate bears an important role as a food production center in Japan.<br>・Various products are produced thanks to different climate in different parts of the area.<br>・Development of crops and cultivation techniques suitable to each area, promotion of dairy and stock farming and development of technologies, and tests and investigation concerning food safety and biotechnology are conducted, realizing the production of high-quality products. | Recycling-type agriculture and stock farming utilizing animal manure |
| | | Vegetable production technology using renewable energy (underground heat) and energy-conserving facility gardening |
| | | Clean agriculture |
| | | Modernized dairy farm operation |
| | | Agricultural and stock farming machines |
| | | Remote sensing |
| | | Field irrigation facilities |
| Food industry | ・Hokkaido is a trove of safe, secure, and attractive food materials supplied freshly and abundantly from the sea and the earth.<br>・Local efforts toward branding of local products taking advantage of the superiority of Hokkaido in the food field.<br>・Efforts toward the sophistication of primary industries and | Technologies for frozen storage of fresh vegetables |
| | | Meat processing technologies |
| | | Dairy product processing |
| | | Functional foods |
| | | Branding |

| Category | Feature | Resources in Hokkaido |
|---|---|---|
| | the increase in added value, aiming at comprehensive development of the food industry and the expansion of the markets for Hokkaido's products.<br>・Formation of food clusters that strengthen and expand the collaboration among businesses from production to processing, distribution, and sales. | Development of convenient method to detect food poisoning pathogens |
| Tourism | ・Hokkaido with a vast area has a wide variety of terrains and climates, offering various opportunities from city sightseeing to outdoor experiences.<br>・Promotion of development as a long-stay tourist destination through the development of attractions taking advantage of diversified local resources and the services delivering high customer satisfaction.<br>・In particular, Hokkaido in winter is well known in and outside of Japan as a world-class ski resort area. | Eco-tourism and green tourism<br>Wide-area landscape development |
| Cold-climate technologies | ・Given the weather condition of coldness with much snow, Hokkaido has special civil engineering and construction technologies for cold climate, such as winter road management, high heat insulation, and durable structures.<br>・ Many companies and organizations specializing in cold-climate technology has accumulated in the area. | Northern-type housing technologies<br>Earthquake-resistant construction technologies<br>Technologies to support driving in snowstorm and against avalanche in winter.<br>Technology concerning road freezing and frost heaving in winter |
| Low population density | ・Hokkaido has a population of 5,506,419 (2010 census), representing about 4.3% of the total population of Japan.<br>・Population density, 70 persons/$km^2$, is about 1/5 of the national average (343 persons/$km^2$), ranking the lowest among all prefectures. The society is spread thin over a wide area.<br>・Medical services must be suitable to the area characterized by the long distance between cities and low population density. | Telemedicine<br>Improvement of speed and reliability of emergency patient transportation |
| Other | ・ Primary industries are actively moving toward the development as the 6th industry, which means producers engage in all stages from production to processing, distribution, sales, and services, leading to local revitalization through creation of employment and increase in the income of producers.<br>・Progress is seen in the use and development of various reusable energy backed by rich natural environment. | Evolution to the 6th industry<br>Biomass energy |

(5) Examination of the Promotion of Private Collaboration Considering Past Lessons

① The needs of the counterpart country must be considered sufficiently. Hard selling from the standpoint of the supplier must be avoided.

In many cases of overseas expansion of business, companies started operations without confirming the needs of the counterpart because they had too much confidence in their technology, and this resulted in the failure to continue business due to the mismatch with the needs of the counterparts, price levels, and technical levels.

② The difference between the environment of Japan and the counterpart country must be understood.

Some target countries have lower fuel costs than Japan because they have more abundant petroleum and other mineral resources. In those cases, Japanese technology should not be introduced unless it delivers significant effects in terms of business to the target country, such as cutting costs or improving production efficiency (for example, introducing machinery that target country businesses can used while spending very little in utility fees, but that come with high initial costs and maintenance expenses because of the cheap utility costs).

③ The necessary conditions for sustainable business must be grasped.

A system for sustainable supply cannot be established without understanding the requirements concerning the means and cost for distribution of goods and parts, technical regulations in the counterpart country, maintenance system, and training of maintenance personnel.

④ Adequate capability for implementation must be maintained in Japan with a long-term plan.

In the case of Hokkaido, many companies are small and medium-sized, and the shortage of workers and funds may make the continuation of business impossible. It is therefore important to maintain adequate capability for implementation and have a long-term plan. For example, there are cases where companies may have considered venturing into a target country at one time, but eventually could not dedicate the resources to the move because their other domestic and overseas business grew strong.

## 4 Flow of Survey Implementation

As shown in the Figure below, project that would be beneficial to the both sides was proposed based on the understanding of the needs and problems of the relevant countries after the usefulness of the resources in Hokkaido was reviewed and analysis was conducted taking into consideration the benefit to Hokkaido-based companies.

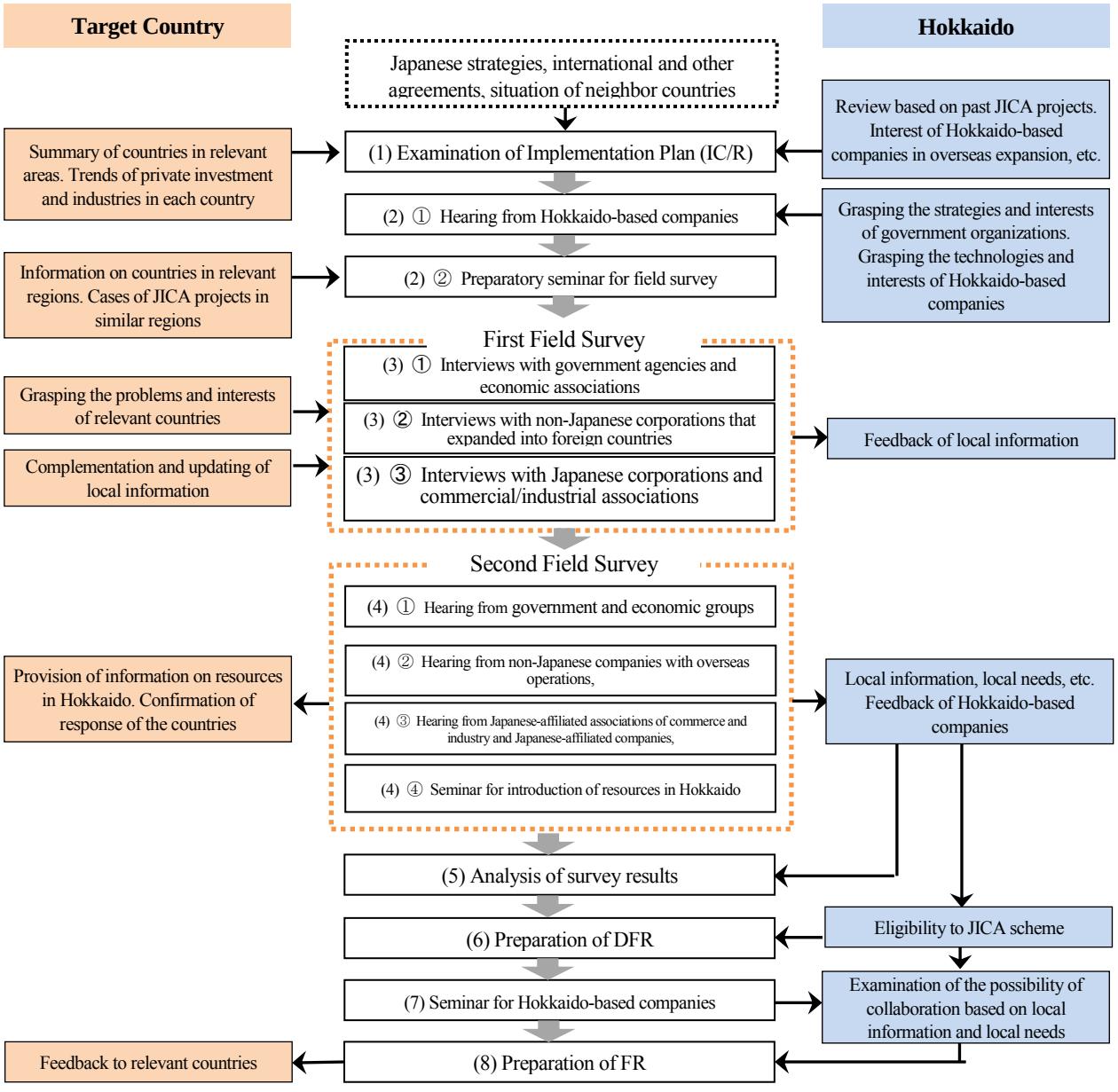


Figure 4-1 Flow Chart of Survey Implementation

## 5 Survey Results for Individual Countries

### (1) Possibilities for Private Collaboration in Mongolia

#### ① Survey targets incorporating local needs

Surveys on the characteristics of and present circumstances in Mongolia, Japanese aid policy and awareness of Hokkaido corporations revealed the following three needs that can be addressed by Hokkaido technology and knowledge. Field studies were conducted and seminars held to examine the possibility of promoting private collaboration between Mongolia and Hokkaido corporations.

- ・Modernization and promotion of such principle industries in Mongolia as agriculture and stock farming in which Hokkaido has applicable technologies and know-how.
- ・Services related to housing construction suitable for climatic features in cold areas.
- ・Heating system development for small-scale communities suitable for cold climate and designed to mitigate the environmental damage.

#### ② Agricultural machinery development potential

Issues facing Mongolia include a need for the introduction of technology for intensive agriculture, an unstable supply of hay and potatoes, delay in the mechanization of small and medium-sized farms and heavy labor and inefficient farming practices. Introducing intensive agriculture technology and experience from Hokkaido, highly efficient agricultural machinery and after-sales services for them should deliver the effects of timely harvesting, improved production efficiency, improved quality due to addressing the lack of feed during winter, and freeing farmers from hard labor.

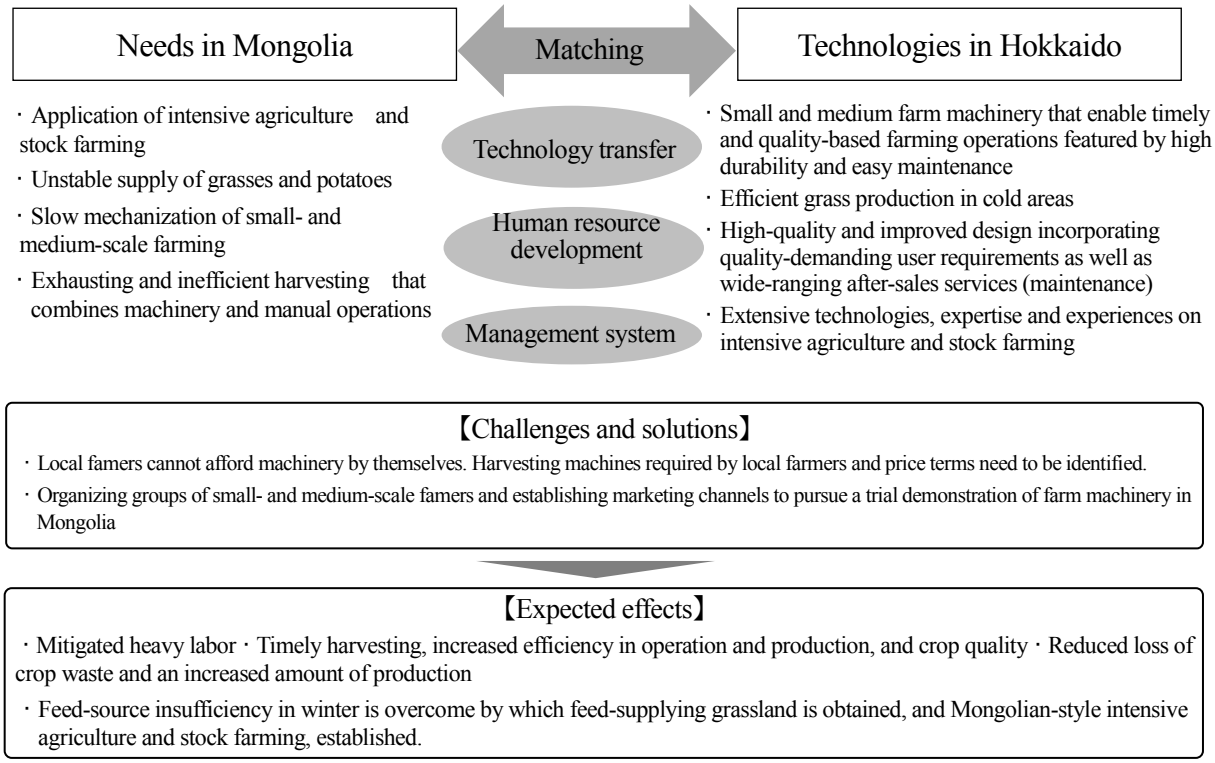


Figure 5-1 Business Development Plans (Agricultural Machinery)

③ Renewable energy development potential

The Mongolian government has identified the need to sort trash, establish methods for collecting livestock excreta and introduce technology for handling large volumes of trash and livestock excreta as ways to increase usage rates of renewable energy, which is one of their goals. Hokkaido has experience in collecting trash and livestock excreta and developing biomass usage technology, plant construction technology and highly efficient energy conservation technology. Using this knowledge and technology in Mongolia can increase usage rates of renewable energy and convert some fuel sources from coal, thereby reducing air pollution, diversifying industry, creating jobs and having other positive effects.

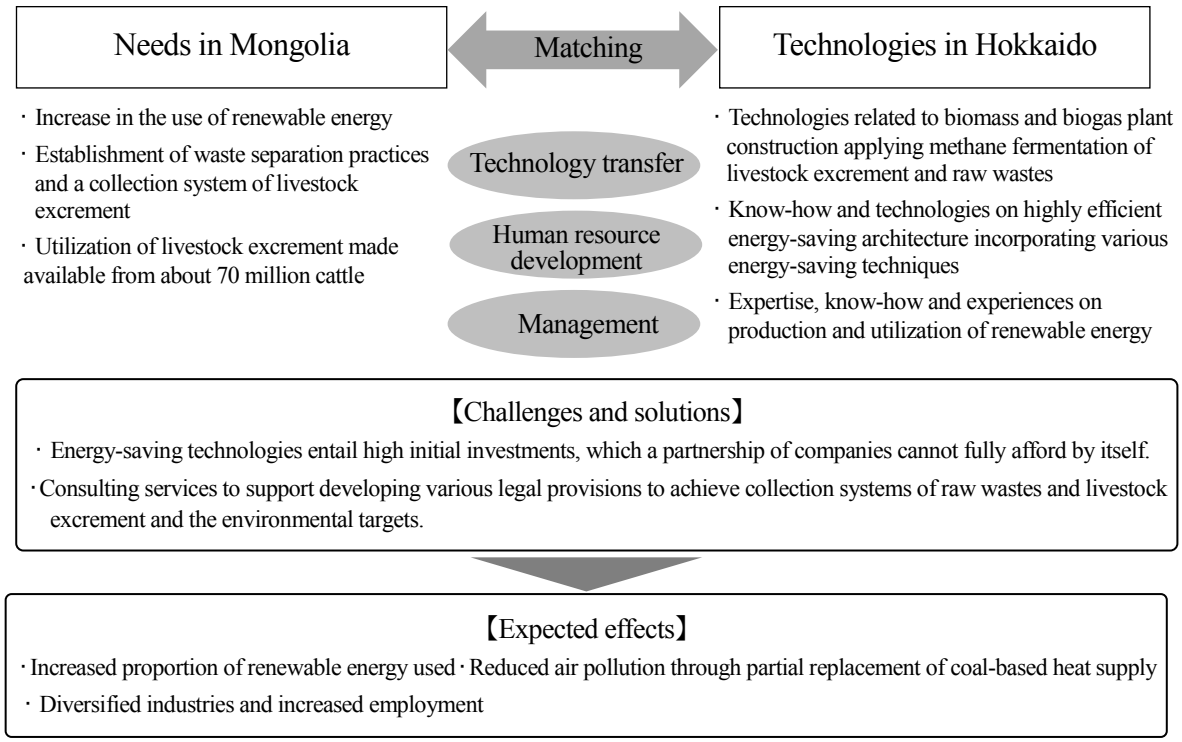


Figure 5-2 Business Development Plan (Renewable energy)

④ Heating equipment development potential

In Mongolia, where alleviating air pollution is an issue, there is a need to promote energy conservation through improvement of heating efficiency and to reduce the amount of heat consumed in Ulaanbaatar. Introducing highly heat-efficient residences that have eco-friendly technology, quality insulation and a high degree of protection from the elements like those in Hokkaido can reduce energy loss throughout the entire city, alleviate air pollution and contribute to other environmental measures.

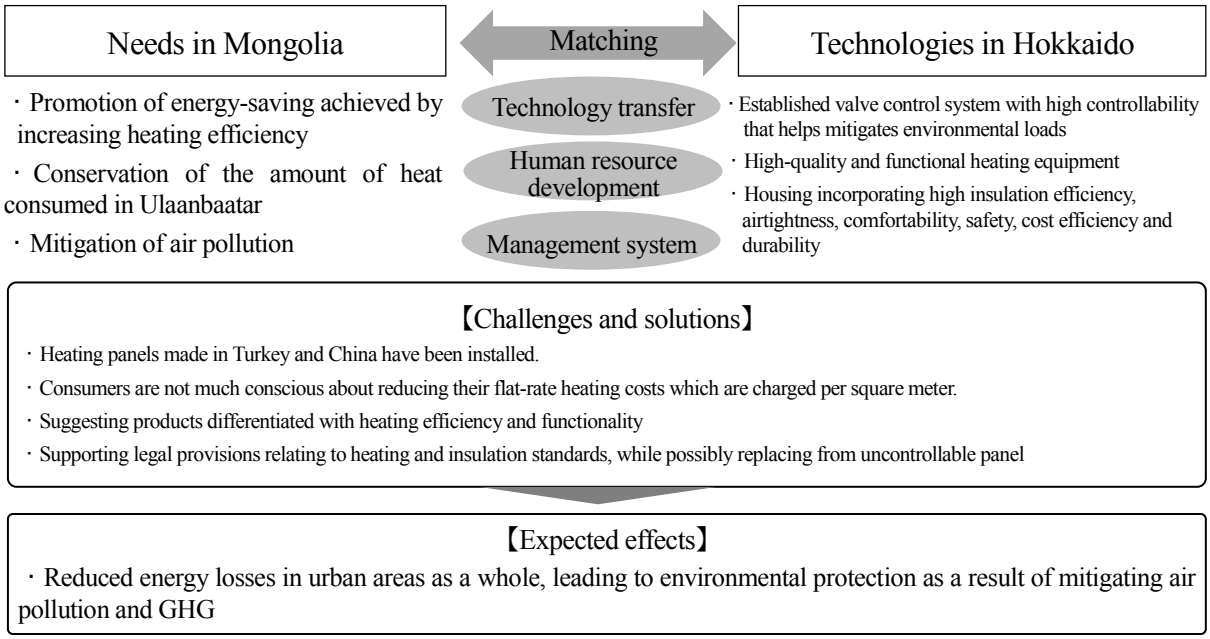


Figure 5-3 Business Development Plan (Heating equipment)

(2) Possibilities for Private Collaboration in the Kyrgyz Republic

① Survey targets incorporating local needs

Surveys on the characteristics of and present circumstances in the Kyrgyz Republic, Japanese aid policy and awareness of Hokkaido corporations revealed the following needs that can be addressed by Hokkaido technology and knowledge. Field studies were conducted and seminars held to examine the possibility of promoting private collaboration between the Kyrgyz Republic and Hokkaido corporations.

- Agriculture: Agricultural machinery to address the need to mechanize to obviate hard labor, improve inefficient harvesting practices, replace deteriorated agricultural machinery and develop undeveloped land
- Dairy farming: Acquiring certification in order to export to EEU markets, quality control and feed management technology to secure hay feed and grade pastureland, experiential knowledge to create brands and high-value-added products
- Solar power generation: Solar power generation systems that address the need to provide electric power for areas that do not receive an adequate supply

② Agricultural machinery development potential

Challenges facing the Kyrgyz Republic include mechanizing small-scale farming operations that consist of hard labor and inefficient practices because some harvesting work is done by hand, updating deteriorated agricultural machinery, and introducing small and medium-sized agricultural machinery for cultivating small, irregularly shaped or steeply sloped farmland that is presently undeveloped. Introducing small harvesting machinery from Hokkaido that is highly durable and easy to operate and maintain to small-scale farm operations, and continuously providing after-sales services on technical aspects can free farmers from hard labor, optimize the timing of harvests and reduce loss from waste, and enable them to cultivate larger areas and grow more varieties of produce.

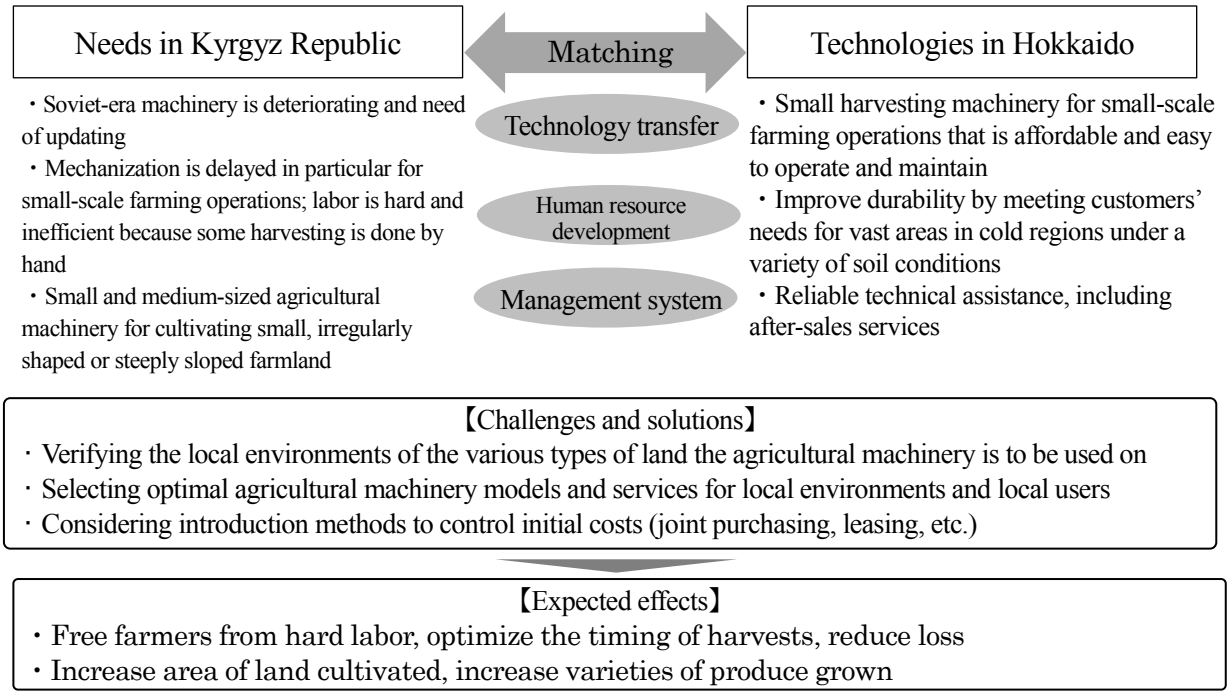


Figure 5-4　Business Development Plans (Agricultural Machinery)

③ Dairy farming development potential

Issues facing the Kyrgyz Republic include acquiring certification in order to export to EEU markets, securing hay feed and grading pastureland, and developing leaders in the dairy farming industry. Introducing quality control and feed management technology from Hokkaido in addition to the region's experiential knowledge of creating brands and high-value-added dairy products can increase milk yields and product quality and help promote the dairy farming industry.

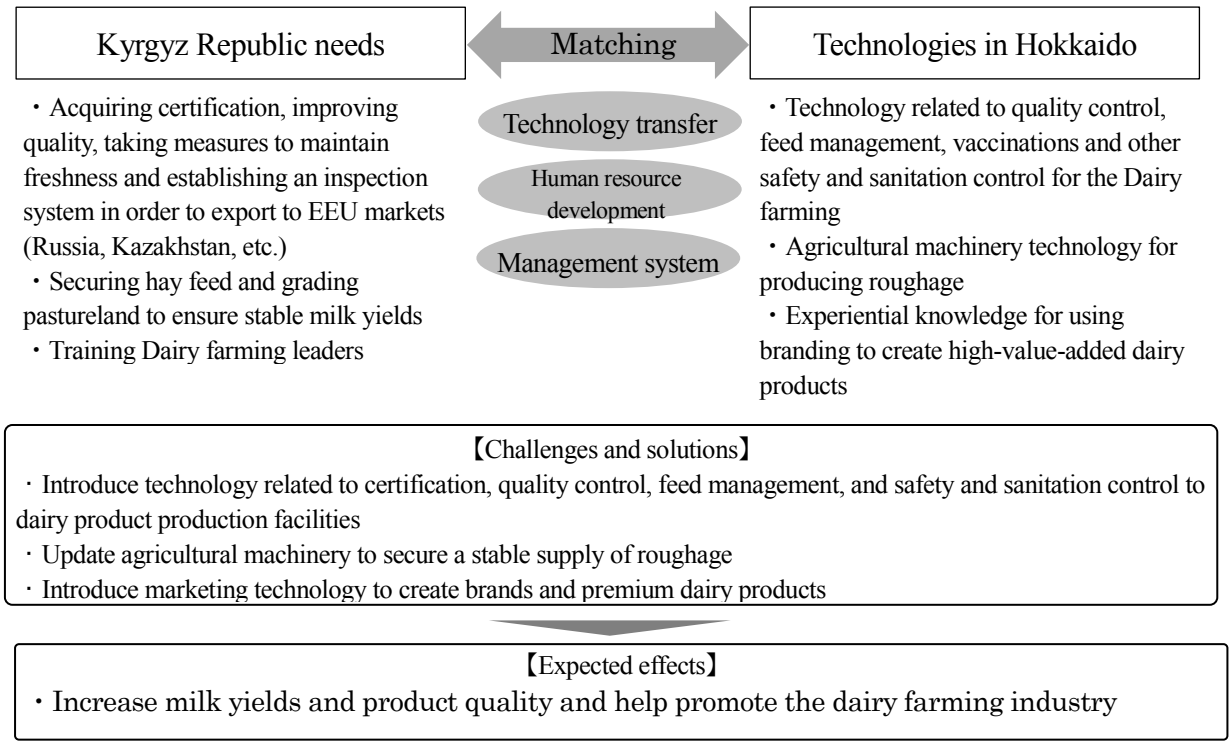


Figure 5-5 Business Development Plans (Dairy farming)

④ Solar power generation development potential

One issue facing the Kyrgyz Republic is securing electric power for villages, communities, cabins and other locations in mountainous areas scattered throughout the country where power is not currently supplied, and for areas with an insufficient power supply. Introducing solar power generation systems that rely on technology from Hokkaido - such as highly energy-efficient bifacial solar panels, technology to combine natural energy sources can enable loss control and optimization, and zero-waste, environmentally friendly foundations and frames that are easy to install, expand and remove even on soft ground and steeply sloped areas - can provide a sufficient power supply and lead to rural development.

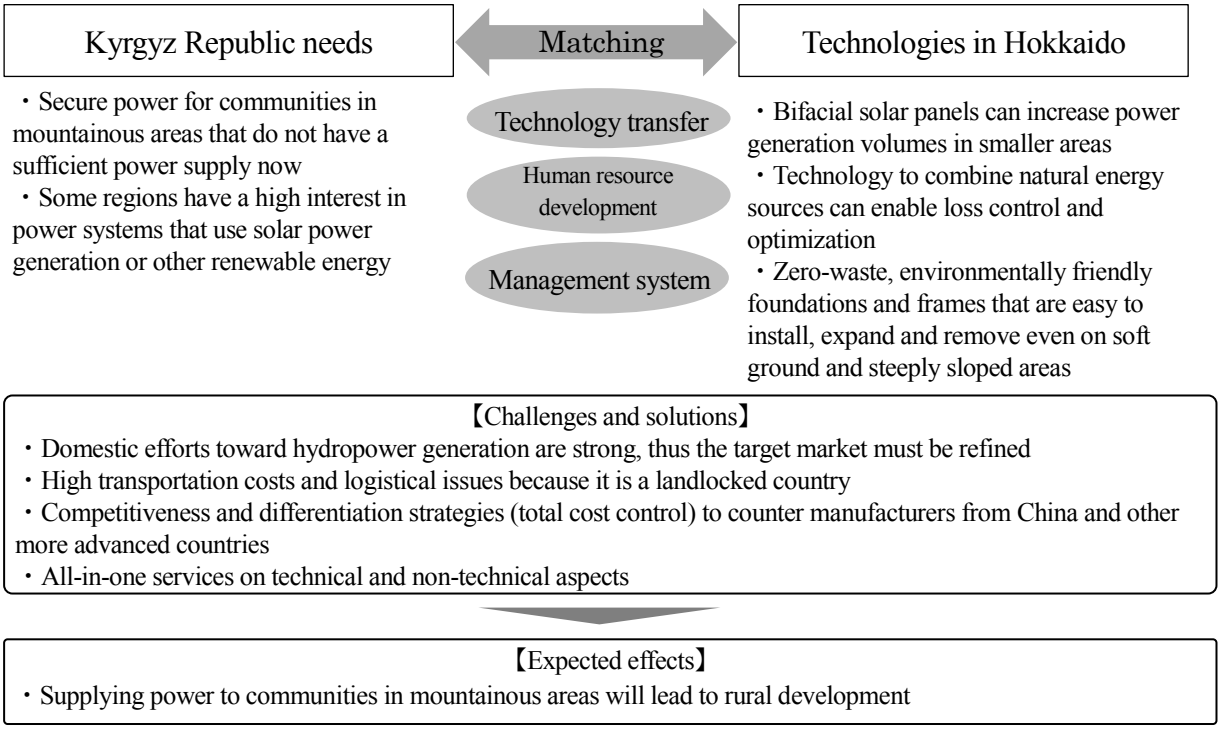


Figure 5-6 Business Development Plans (Solar Power Generation)

(3) Possibilities for Private Collaboration in Kazakhstan

① Survey targets incorporating local needs

We conducted a survey on the awareness of Hokkaido-based companies on the characteristics and general conditions of Kazakhstan, policy of Japan's support, etc., based on Hokkaido's technology/knowledge, which revealed the following points as needs which could be handled by the technology and knowledge of Hokkaido. In reviewing these themes, we considered the potential to promote cooperation with the private sector in Kazakhstan and Hokkaido through a field survey and a seminar.

- Agriculture: Agricultural machinery to meet the needs to promote mechanization in accordance with revaluation of the agricultural sector and unionization of farmers
- Dairy farming: Expertise in quality control, feed/feeding control technique and added value to meet needs derived from dairy product shortages and demand for high-quality dairy products
- Solar power generation: A solar power generation system to meet the needs to introduce energy-saving technologies and renewable energy

② Potential for expansion centering on agricultural machinery

Issues in Kazakhstan include the delayed mechanization in smallholder farmers, heavy working and inefficient harvesting operations due to manual labor and enhanced services related to farm machines. In solving these issues, it is expected that introducing small harvesting machines which are easy to operate and maintain and highly durable for smallholder farmers from Hokkaido and continuously providing technical after-sales service will help ease the burden on farmers of heavy work and harvesting at the appropriate time. It will also reduce waste losses, which, in turn, will boost the expansion of agricultural fields and a range of crop varieties.

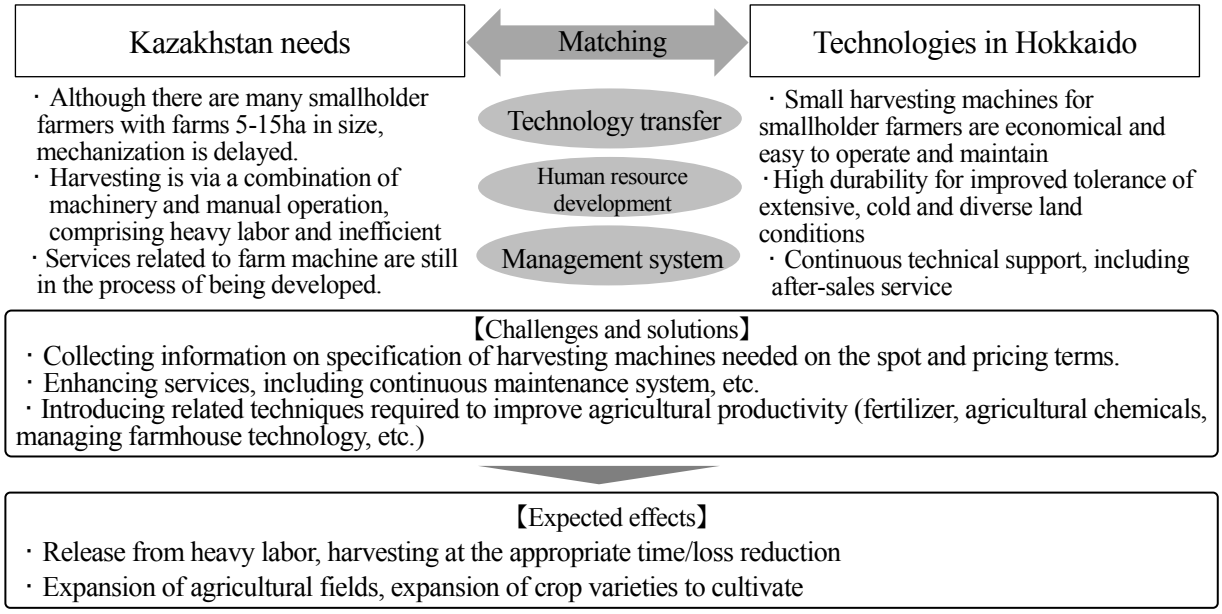


Figure 5-7 Business Development Plans (Agricultural Machinery)

③ Potential to expand dairy farming

Issues in Kazakhstan include a corresponding national shortage of dairy products and demand for high-quality dairy products. In response, it is expected that by introducing quality control techniques and feed/feeding control, as well as expert insights into branding and how to boost value of dairy products from Hokkaido, will boost both milk yield and quality and help dairy farming develop as a result.

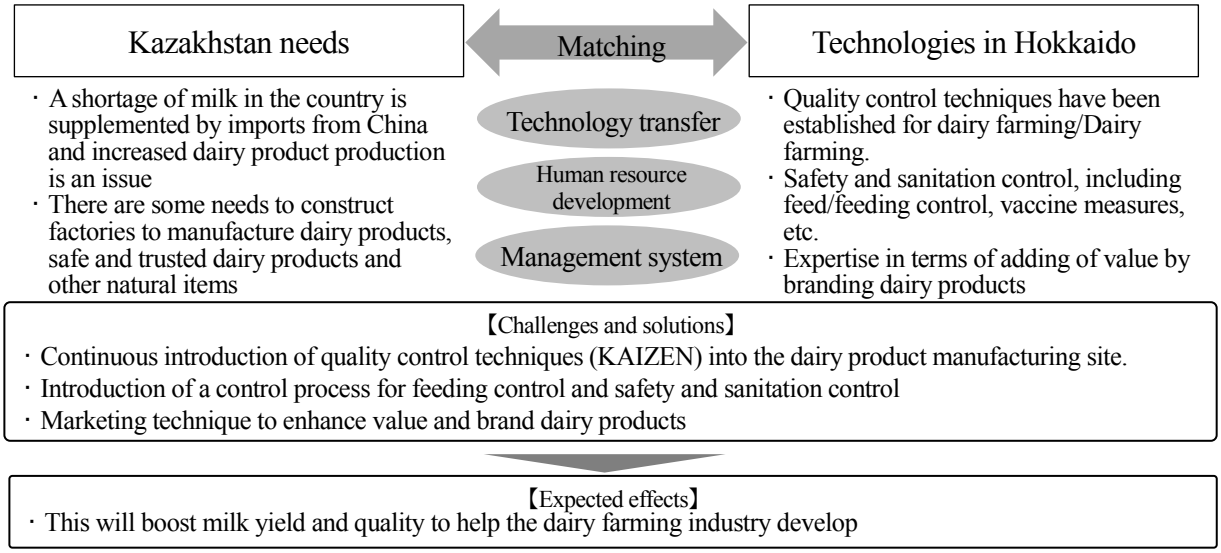


Figure 5-8　Business Development Plans (Dairy farming)

④ Potential for expansion concerning solar power generation

Other issues in Kazakhstan include the introduction of energy-saving technologies and clean energy accompanying EXPO2017. The FIT (Feed-in Tariff Scheme) started in 2015 and involved introducing foreign technologies in accordance with the target regenerated energy coverage rate of 50% (2050). In response, it is expected that by introducing double-sided power generation panels with high power generation efficiency and technologies such as the synthesis technology for natural energy capable of mitigating and adapting to losses, environmentally-aware foundations/platforms that are easy to install/relocate/remove, even on soft ground, and hilly areas, free of waste, etc. from Hokkaido as the solar power generation, the increased local coverage rate of regenerated energy and effective use of natural energy technology will help stabilize the power supply.

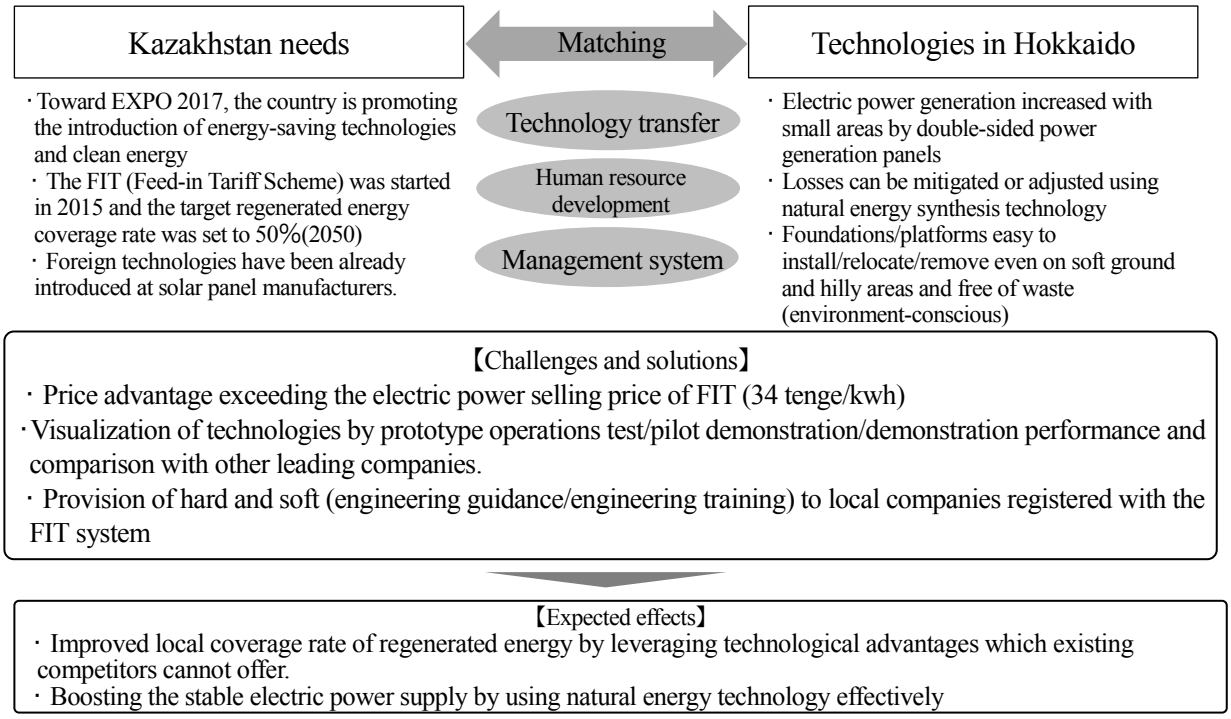


Figure 5-9 Business Development Plans (Solar Power Generation)

⑤ Possibility of expansion concerning waste recycling

Issues in Kazakhstan include a recycling rate as low as 3% because of the central landfilling method, the lack of intermediate treatment facilities for recycling and the fact that waste after initial processing is exported overseas such as Russia, etc., and waste management is not completed within the country. In response, by introducing the technology to manufacture gas oil alternative fuel (BDF) from waste oil, the technology of solid fuel processing by compression-grinding treatment of waste plastic/waste diaper, the detoxifying melting furnace technologies to exude prevention of treated water, anti-dioxin measures and the know-how used when establishing/operating total recycling systems based on intermediate treatment facilities/industrialization of operation systems from Hokkaido, promotion of recycling by shifting away from landfilling treatment, the effective use of local energy/unused resources and establishment of a circulation-type waste control system are among the expected effects.

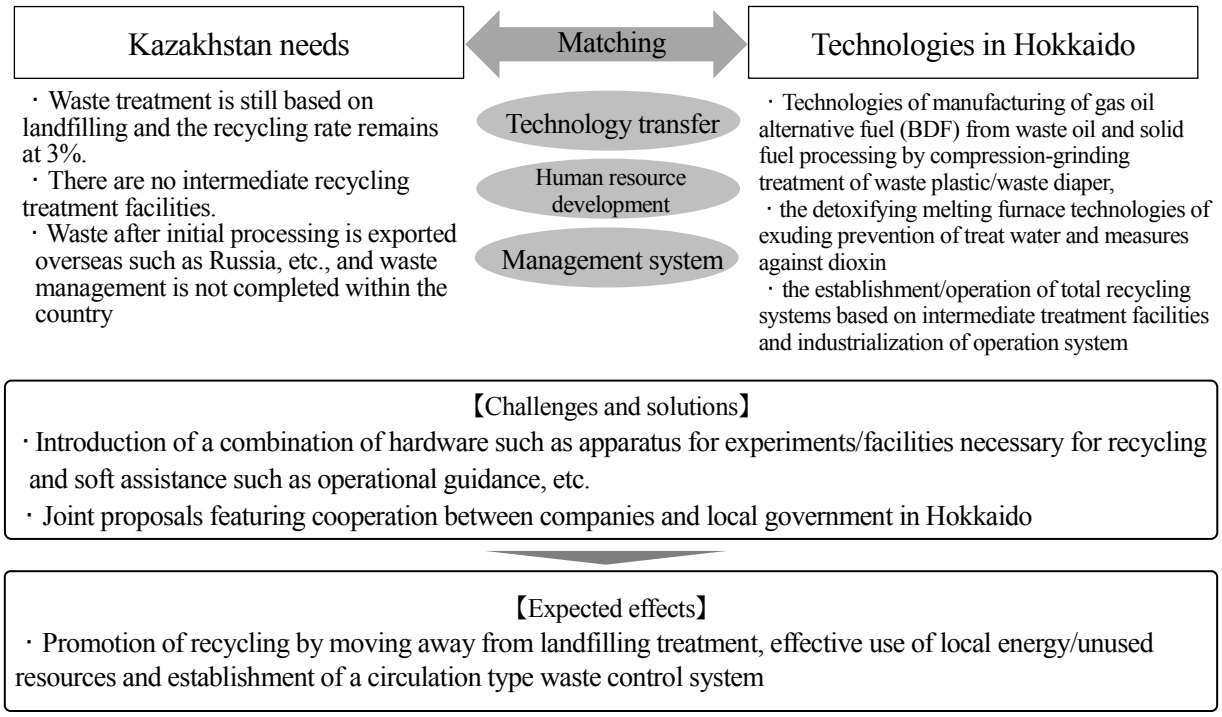


Figure 5-10　Business expansion plan (waste recycling)

(4) Possibilities for Private Collaboration in Uzbekistan

① Survey targets incorporating local needs

The survey team studied features and general status of Uzbekistan, Japanese assistance policy, and thoughts of private companies in Hokkaido based on techniques and knowledge of Hokkaido to believe that they can be utilized to cope with the needs in the sectors below. It examined the possibility of private collaboration promotion between the country and region in the fields through field survey and seminar.

- Agriculture: agricultural machinery to cope with the needs for promotion of mechanization in the country where farming is mainly conducted manually and farming machines are less durable
- Dairy farming: comprehensive management system and know-how on branding and high value addition to cope with the needs for introduction of meat and dairy product processing technologies and know-how
- Renewable energy: construction and installation technology of energy-saving and renewable energy facilities to cope with the needs for introduction of new power generation facilities and strong construction demand
- Heating equipment: controlled environmental load-reducing heating equipment to cope with needs for introduction of home heaters to replace old uncontrolled central heating systems that cause air pollution

② Potential development in agricultural machinery

Challenges of Uzbekistan include labor-intensive inefficient harvesting conducted manually, less durable and low-quality parts, insufficient maintenance, and improvement of comprehensive agricultural technology and services. Introduction of durable small harvesting machines that are easy to operate and maintain and providing technical after-sale services continuingly from Hokkaido is expected to help release farmers from heavy labor and harvest at the right season, reduce the waste loss, expand field area and crop varieties to be produced.

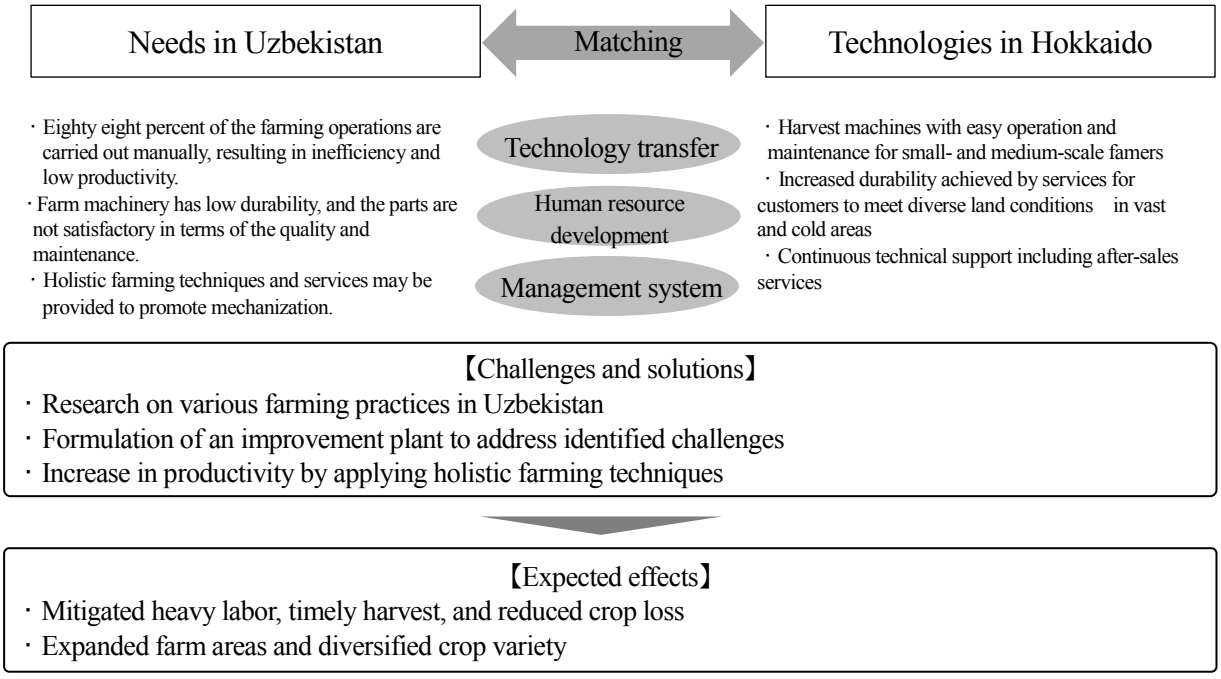


Figure 5-11 Business Development Plans (Agricultural Machinery)

③ Potential development in dairy farming

Challenges of Uzbekistan include the quality, feeding and health and safety management process of meat and dairy product manufacturing and processing and introduction of comprehensive technology and know-how that include marketing method of premium product development and branding of dairy products. Introduction of quality and feeding management process and know-how on branding and high value addition of dairy products from Hokkaido is expected to help realize milk production volume increase and dairy product quality improvement that will lead to dairy farming promotion.

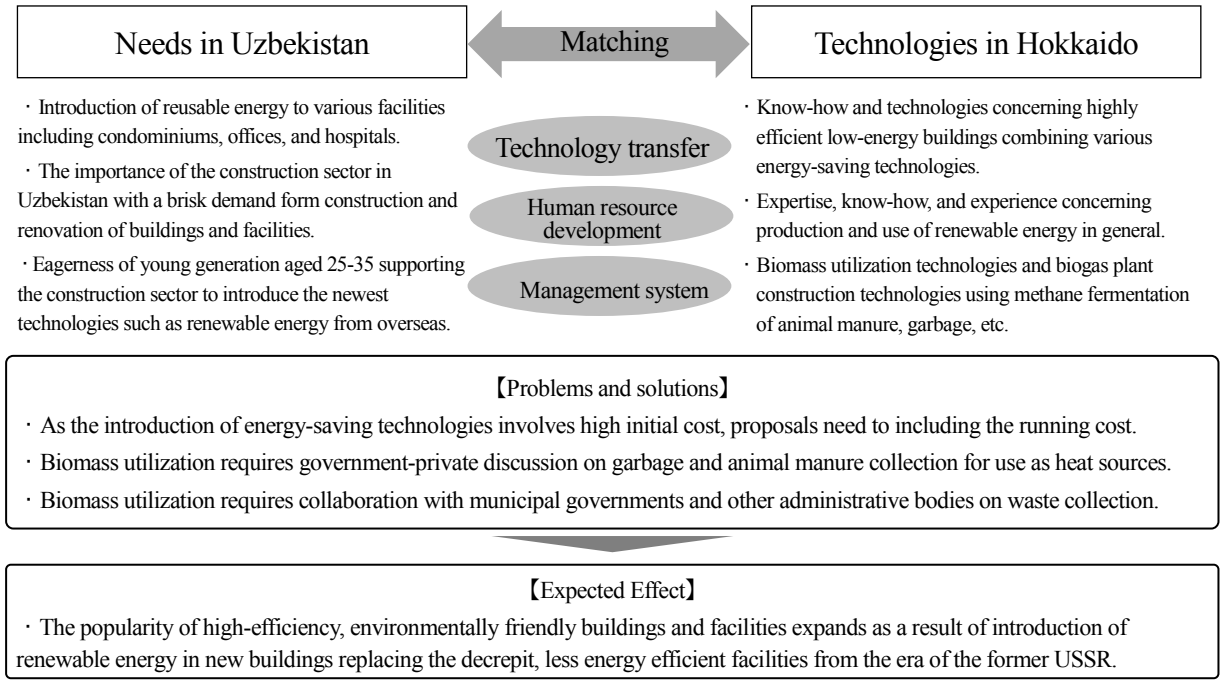


Figure 5-12 Business Development Plan (Dairy Farming)

④ Potential development in renewable energy

Challenges of Uzbekistan include diversification of power supply by introducing new power generation facilities and introduction of construction and installation technology of energy-saving and renewable energy facilities that are newly constructed. A proposal to tackle the problem including the total cost that includes the running cost from Hokkaido and public-private collaboration that involves municipal governments and other local governments in tackling them on the collection methods of waste that is used as the heat source of biomass power generation and relevant laws and regulations is expected to promote introduction of renewable energy to new structures to replace old energy-inefficient facilities and diversification of power supply methods, scattering of power sources, and stabilization of industrial activities.

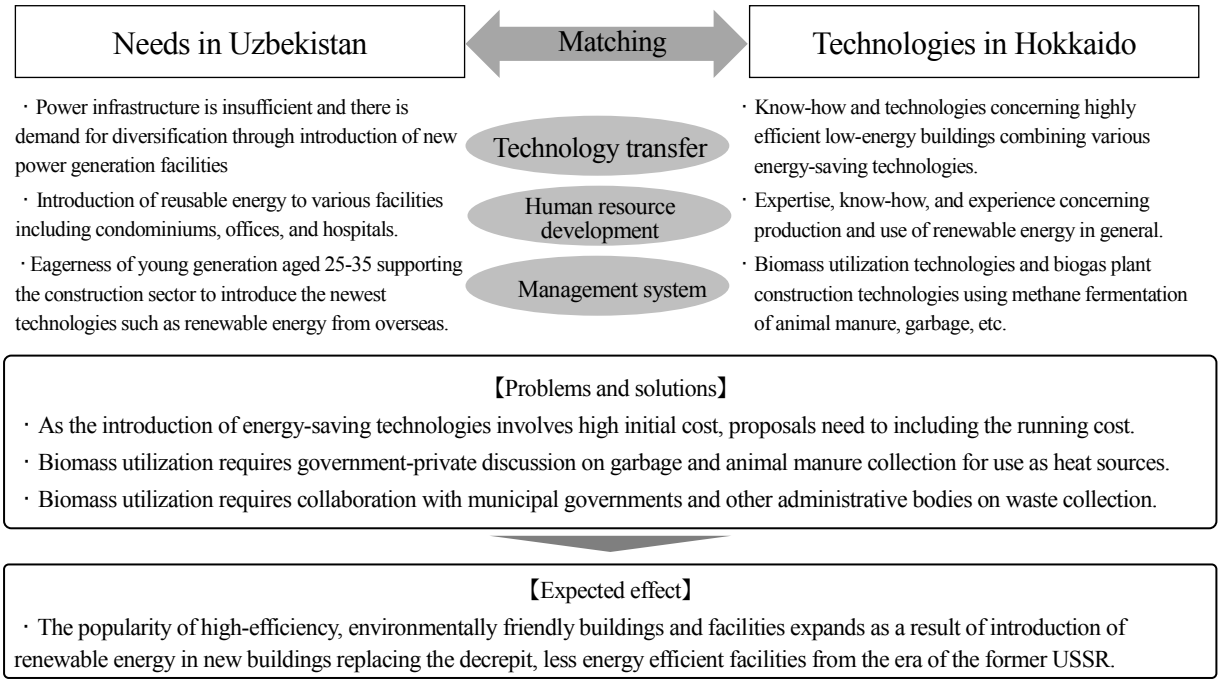


Figure 5-13 Business Development Plan (Renewable Energy)

⑤ Potential development in heating equipment

Challenges of Uzbekistan include replacement of old uncontrolled central heating systems that cause air pollution and introduction of home heaters for the replacement. Introduction of controlled environmental load-reducing heating equipment from Hokkaido to tackle the challenge is expected to spread comfortable, safety, economically-efficient and durable heating equipment in the country to help secure comfortable heating in houses in cities and across the country, reduce energy losses and prevent air pllution.

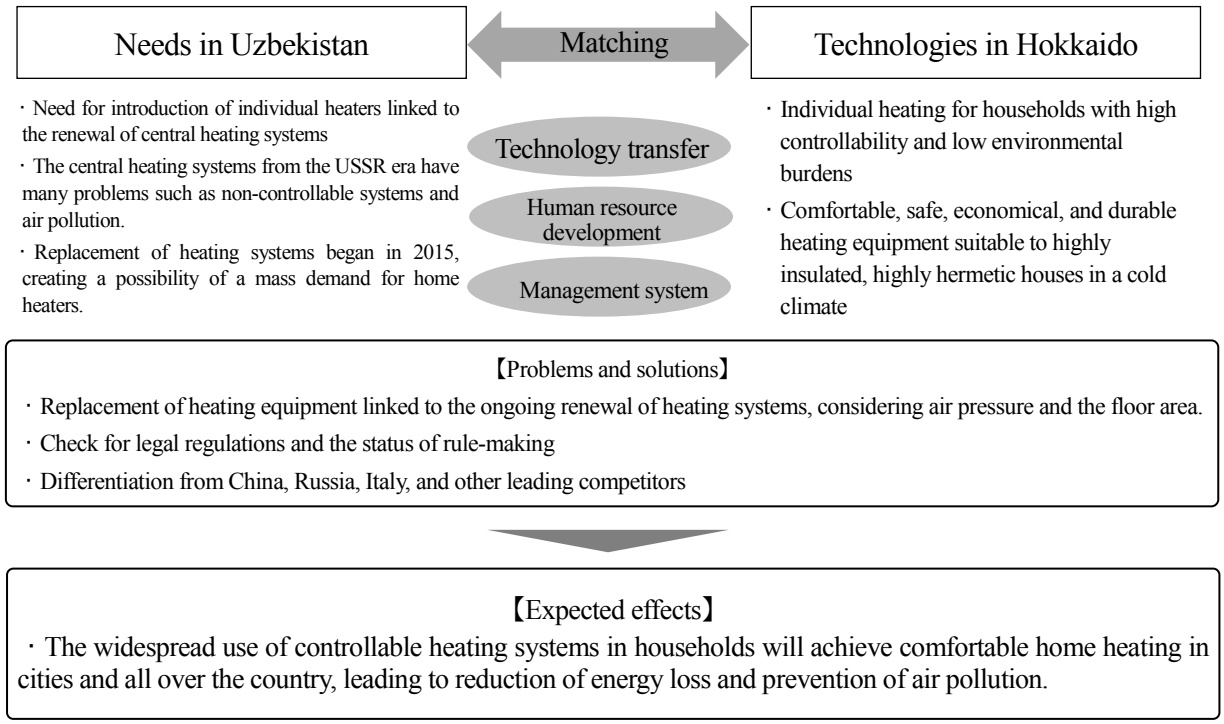


Figure 5-14 Business Development Plan (Heating Equipment)

(5) Possibilities for Private Collaboration in Tajikistan

Possible assistance sectors include agriculture and stock raising, food industry and development of so-called sixtiary industry[1] based on tchniques and knowledge of Hokkaido and features of Tazikistan. However, GDP of Tajikistan is lower than that of other central Asian countries and it is difficult for private companies to take action individually there as a private collaboration project also when the public security in neighboring regions is taken into consideration.

The climate of Tajikistan is different in realtion to agriculture. Hokkaido has little knowledge about cotton that is the major agricutural product of the country. On the other hand, there is a preceding project, preliminary survey on licorice root production (promotion of BOP business collaboration), of Cokey Co., Ltd. in the field of functional food whose development is in progress in Hokkaido. The project was explained by the responsible personnel in Hokkaido seminar that was organized as part of the survey (Nov. 25, 2015, in Sapporo). There are companies and organizations that have much interest in locorice and other natural medicine development in Hokkaido and private collabortion development between the region and country is possible based on the collaboraion of such a proceeding project.

The Japanese Government formulated an assistance plan for Tajikistan in which rural development, industrial promotion, transport and traffic (road development and maintenance), national border management, and basic social service improvement are focal sectors. Hokkaido's regional developemnt experiences can be utilized for rural development and industrial promotion. Thus, it is desired that development of relationship of trust be the first step using such opportunities of exchange as JICA's grassroot technical cooperation projects and training projects.

(6) Possibilities for Private Collaboration in Turkmenistan

Private colaboration involving companies between Turkmenistan and Hokkaido can be carried out only in limited sectors. Collaboration with Japanese companies is mainly exportation of such large-scale infrastructure as resources developent and chemical plants and it is difficult to conduct collaboration with knowledge and techniques of Hokkaido. Although agriculture and stock raising is a key industry for Turkmenistan, Hokkaido and the country have little in common in terms of the climate or crops.

(7) Possibilities for Private Collaboration in Armenia

① Survey targets incorporating local needs

Possible private collaboration between Armenia and Hokkaido based on the strength and experiences of Hokkaido-based companies is in IT, food processing and tourism that are also national strategic focal sectors of Armenian Government. They face following challenges:

[1] Sixtiary industry: promotion of creation of new industry by integrating farm, forestry and fishery production with processing and sales and utilizing local resources (MAFF)

・IT: Highly unique informaton technology and know-how not affected by bad transport enviroment of Armenia
・Food processing: High value-added functional food manufacturing technonogy that can cope with long trnsportation to the market
・Tourism: Regional development and improvement of competitiveness and atractiveness based on integrated collaboration among tourist agents, farmers and food processing companies

② Potential development in IT sector

Challenges of Armenia include shortage of applied technology and collaboration with and securing of Asian market in addition to geographically bad trasnport environment. Providing know-how on business expansion in niche market, development of unique apllied technology, high value addition to technology and human resources based on industry-university-industry exchange and business development in Asia from Hokkaido side to tackle the challenges is expected to promote unique and ompetitive information technology development and entry in new market, which will help develop business in Armenia and Hokkaido.

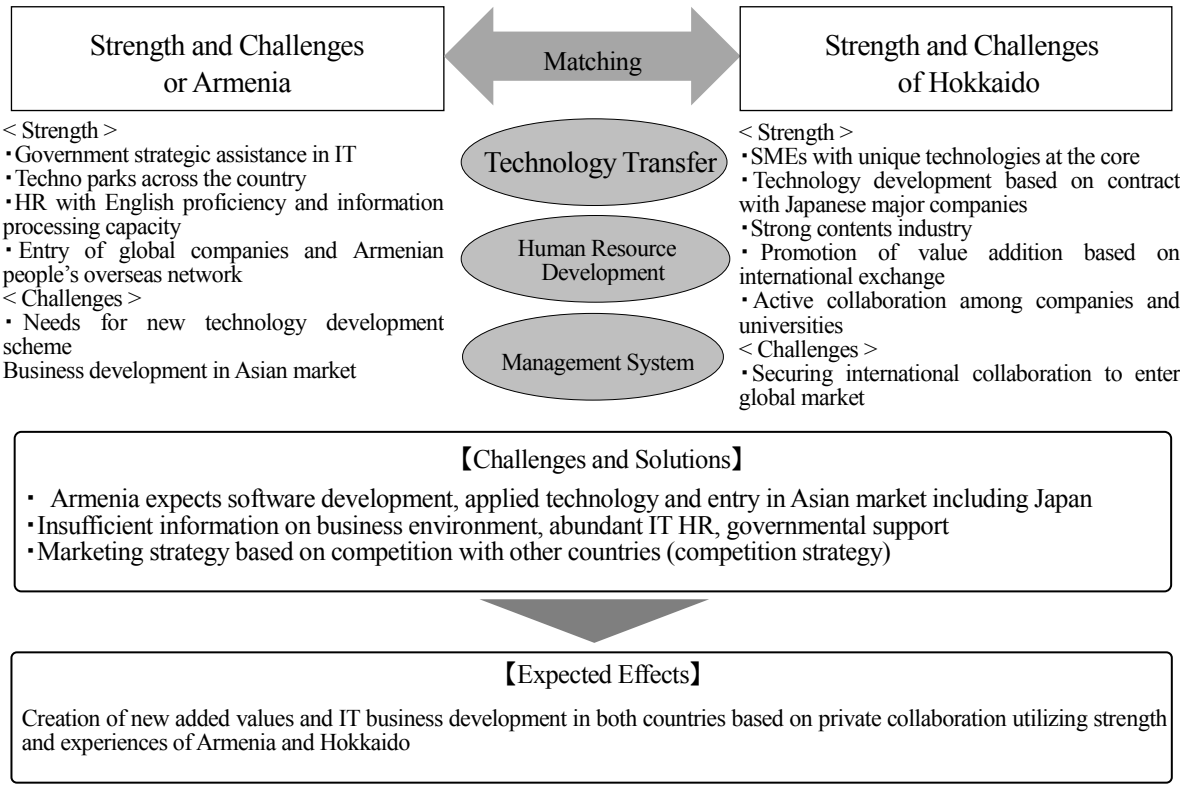


Figure 5-15 Business Development Plan (IT Sector)

③ Potential development in food processing including functional food

Challenges of Armenia include processing and manufacturing from raw materials, produt development, branding in the markeet, and merger with tourism. Providing know-how on produion and processing of functional food, certifiation system (Healthy Do), specialty product development process, development of sixtiary industry from production, processing and sales to branding from Hokkaido is expected to promote development of high value-added processed food and specialty products, supply of raw materials to Hokkaido, and joint product development for EU and EEU markets.

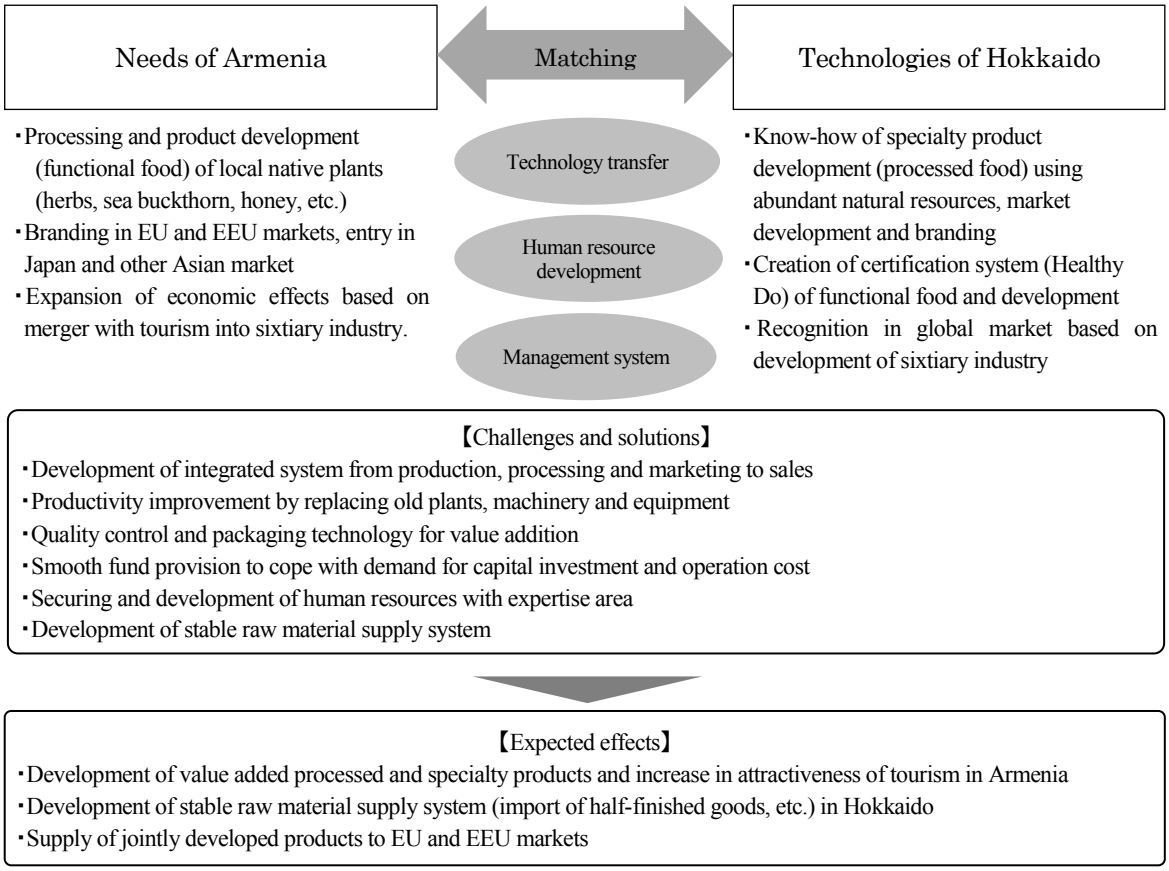


Figure 5-16 Business Development Plan (Functional and Other Food Procesing)

④ Potential development in tourism

Challengs of Armenia include regional development and improvement of competitiveness and attaractiveness. Providing know-how on sixtiary industry development and networking of tourism information from Hokkaido is expected to promote multiple tourism promotion in Armenia and imcrease competitivenss and attractiveness as a tourist destination.

Regional development based on the concept of “one village one product movement” is promoted with cooperation from JICA and tourism developmet in addition to production and development of food, folkcraft products and wine is in progress. Synergy effects to tourism based on collaboraiton with the one village one product movement are also expected.

Reference：Development in funcitonal food sector in Hokkaido

・Hokkaidi with cool climate and vast idle land is most suitable for cultivation and production of medicinal plants in Japan and private companies are engaged in such activities at various locations there. Hokkaido Association for Bio-Business that promotes functional food business there organizes research sessions for entry in the global market.
・There are various native herbs in Armenia, including sea buchthorn native to mountains, and using them as raw amterials of functional food will contribute to business promotion of both countries.

Examples of Projects Using Northern Fruits and Medicinal Plants (Hokkaido)

| Comapny | Region | Overview | |
|---|---|---|---|
| Yubari tsumura Co., Ltd. | Yubari | Established in 1999. Regarded Hokkaido as production base of medicinal plants in Japan and has launched expansion of processing facility. The production area is increased by over 200% to 10 million square meters by 2020. It began planting 4,200 medicinal trees to be used as raw materials of natural medicine in 2015. | |
| Oji Holdings Corp. | Shimokawacho | Raising seedlings and cultivation of medicinal plants under a collaborative agreement on medicinal medicine research in 2013. It conducts R&D for high value addition and product developent in Hokkaido that is suitable for mechanization as it has vast farmland to realize cost reduction based on mass cultivation. | |
| Endougumi Co., Ltd. | Mukawacho | Cultivation and processing of domestically grown sea buchthorn. It particularly focuses on jam and cosmetic product and local specialty product development. |  Bread paste Fruit sauce http://www.endou-gumi.co.jp/berry/top.html |

*Produced by HIT based on press release, etc.

(8) Possibility of private collaboration in Azelbaijan

① Survey targets incorporating local needs

Private collaboration with Azerbaijan based on strengths and eperiences of Hokkaido-based companies will be in the agriculture and food processing sector. Hokkaido's experiences and techniques are effective in improvement of agricultural productivity, quality stabilization and branding that are challenges of the country. Food processing that promotes regional economic development and creates stable employment opportunties will also help tackle another challenge of regional development.

② Potential development in agricultural machinery

Arable area of Azerbaijan is relatively small among former Soviet Union member countries and many farmers are engaged in mid- to small-scale farming of round 5 hectares to 25 hectares. As the government aims at stable supply of feed crop, wheat and potato, old agricultural machinery needs to be replaced. Meanwhile, Hokkaido can supply highly efficient small- to medium-sized agricultual machinery for working at the proper time and it can also procide advice and instructions on intensive agriculture and stock raising and farming management in additon to machinery. Private collaboration between Hokkaido and Azarbaijan will help improve sself-sufficiency rate, secure stable income of farmers, and develop non-energy sector in the country. This requires study of financial schemes under collaboration with the financial sector of the country.

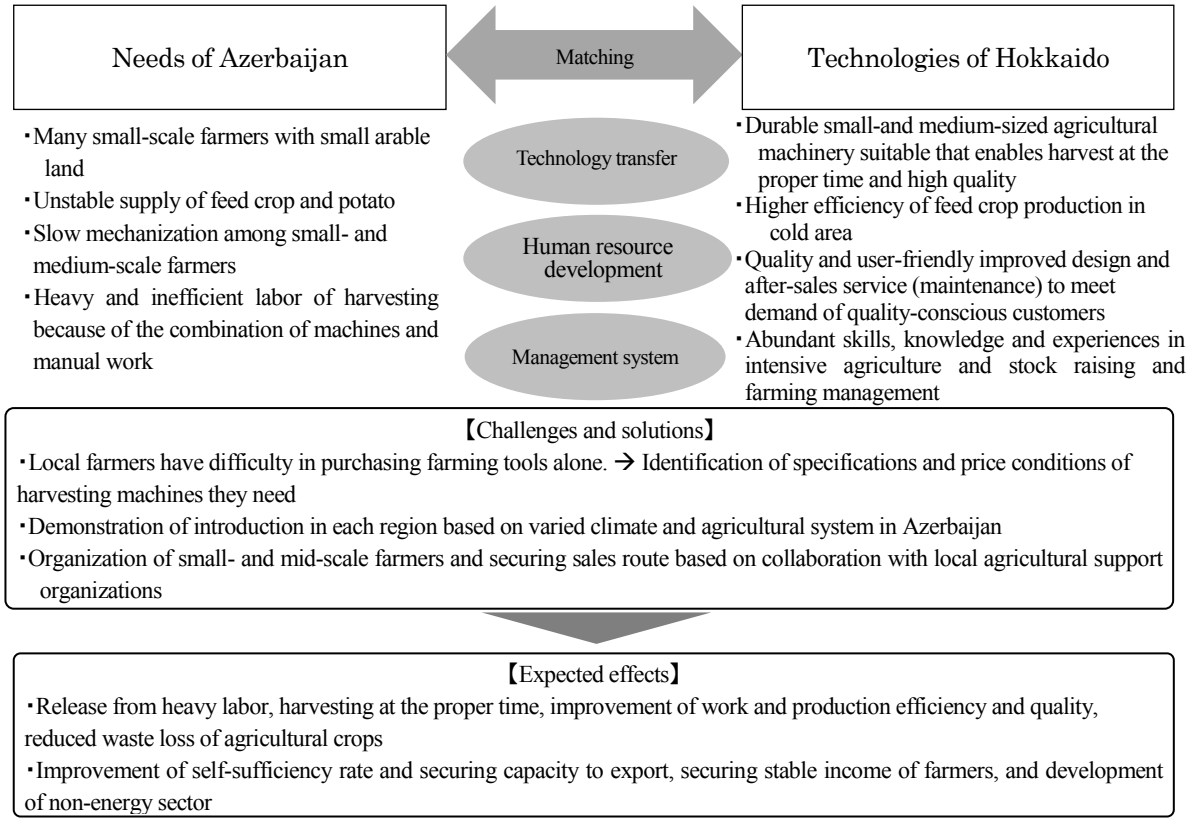


Figure 5-17 Business Development Plans (Agricultural Machinery)

③ Potential development in food processing sector

Although natural herbs and northern fruit trees grow naturally in Azarbaijan, many of them are not developed into products. Russia and Kazakhstan that are export destinations have technical regulations in EEU to secure consumer safety.

Hokkaido has abundant know-how on specialty product development and branding using natural resources and it also has R&D experiences in food sector including food branding and functional food development.

Collaboraiton between Azarbaijan and Hokkaido will enable development and production of value added labor saving processed products in the country and securing stable supplier of new variety of food and raw materials for Hokkaid.

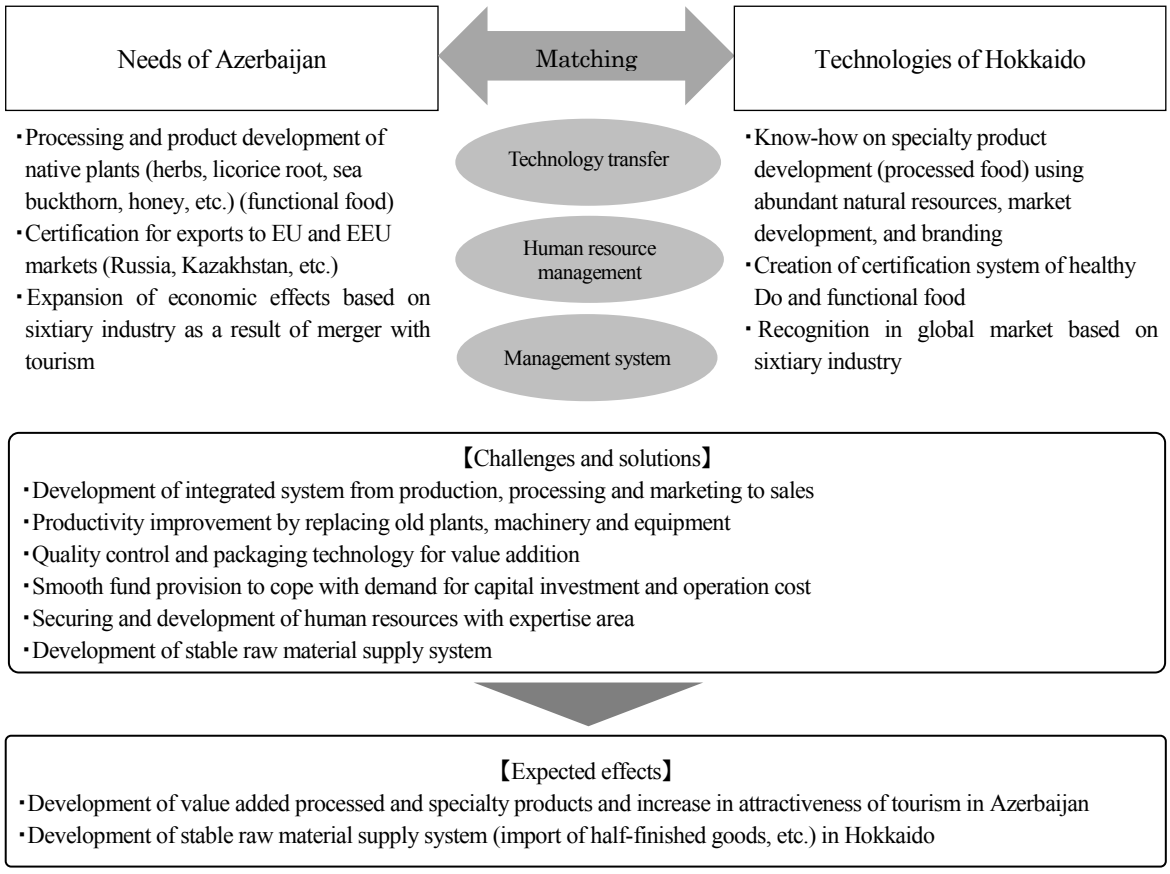


Figure 5-18　Business Development Plans (Food Processing Sector)

(9) Possibility of private collaboration in Goergia

Possible assistance sectors include agriculture and stock raising, food industry, tourism, and development of so-called sixtiary industry based on techniques and knowledge of Hokkaido and features of Georgia. Georgia that has organic wine and a number of world heritage sites intends to actively promote tourism. Development projects of local attractions and local products is essential for sustainable tourism and public-private collaboration involving farmers and tourist agents is important. Hokkaido is working on various effective collaboration projects involving local farmers, food processing companies and tourst agents in ssixtiary industry.

The Japanese Government intends to assist agriculture, infrastructure development, health and medicine, and economic infrastructure development for decentralization of power and regional development, which are priority issues of Georgian Government in its assistant policy in belief that it will contribute to promotion of its economic development and soial stabilization. It also intends to promote sustainable economic growth through social development that helps regional gap adjustment thereby contributing to social stabiliation.

Private collaboration in tourism between Hokkaido and Georgia has the potential of contributing to promotion of sustainable economic growth and social astability and regional gap adjustment in the country. Hokkaido that accepted a training progam on regional development based on sixtiary agricultural industry combined with tourism which was JICA training by country for Georgia in FY2015, and Nisekocho, Takikawa and other municipal governments as well as economic organizations, farmers and wine producers are currently studying long-term collaboration on production and distribution of wine that is Georgia's specialty product. Development of a framework to utilize knowledge and skills of various local comapanies enables initiatives that benefit both parties.

Japanese dairy product makers and food processing companies also have joint development and patent license agreements with Georgian partners. Such initiatives in Georgia under collaboration with Hokkaido-based companies are also possibilities.

# 6 Possibility of Business Expansion of Hokkaido-Based Companies to Target Countries

(1) Business Expansion of Hokkaido Corporations to Target Countries

Based on the results of this survey, this section reviews the steps to be taken when Hokkaido-based companies consider business development in target countries in the future.

In the first stage, based on this survey, companies should identify the concrete target region and specific products and technologies, and gather sufficient information concerning the field. In particular, the information from the companies and other sources in the counterpart country may not be sufficient for the purpose of grasping problems by itself, even if such information may indicate a possibility of business. The feasibility of business should be ascertained carefully also considering the information from Japan or third countries.

In the next stage, develop a concrete image of the business and build a hypothetical course of business development, and thereafter confirm its validity. It is necessary not only to consider the technical aspect of whether or not the company's technologies and products match the environment and institutions of the country, but also to get a concrete grasp of the costs of physical distribution and customs clearance, and also to clarify the possible problems in physical distribution. This process requires reliable collaborators in the country. As these collaborators can be business partners in the future, they should be selected considering not only their financial power and expertise in the relevant business field but also their reputation in and outside of the country.

If a possibility of business is confirmed as a result of the above survey and verification, a business development plan assuming concrete buyers and products should be prepared. In this process, the risks in settlement of accounts, labor management, cash flow, etc. must be reduced, and information must be gathered concerning the business promotion and support schemes of Japan and the counterpart government.

Table 6-1 Stages of Business Expansion for Hokkaido Corporations

| Stage | Specific examples of activities |
|---|---|
| Survey stage | ・Confirmation of questions in additional information based on the information from this survey report<br>・Examination of the possibility to deploy the company's products and technologies in the target country<br>・Consultation with JICA, JETRO, Japan Centers, Japanese embassies, Japanese trading companies and other relevant organizations |
| FS and demonstration stage | ・Securing collaborators in the target country (administrative organizations, local companies, groups, etc.)<br>・Planning demonstration in the country, participation in fairs, etc.<br>・Confirmation of the means, time, and cost of transportation of materials and equipment.<br>・Confirmation of local laws and regulations, permissions and approvals, customs of trade, cases of troubles, etc. |
| Business preparation stage | ・Confirmation of the ways to address taxation, labor, and accounting issues.<br>・Consideration of the ways to use investment incentives and preferential policies.<br>・Confirmation of the environment of financing (working funds and funds for equipment)<br>・Preparation for contracting (sales contract, agency contract, joint study contract, etc.) |

(2) Advantages and Problems of Hokkaido in Expansion into Target Countries

The table below shows the advantages and problems Hokkaido corporations face in considering conducting business in Mongolia, Central Asia and the Caucasus. Note that the contents of the table represent prevailing views about the target region as a whole, and that economic conditions, systems and the business environment differ for each individual country.

On the other hand, problems are related to the present situation of Hokkaido-based companies, such as a lack of experience in international business and the mostly small and medium sizes of companies with small volumes of transactions, which are not specific to the target countries of this survey. The problems concerning physical distribution, overseas travel, and language are not specific to Hokkaido-based companies but are common to all companies in Japan.

Table 6-2 Advantages and Problems of Hokkaido-Based Companies in Business Development in Target Regions

| | |
|---|---|
| Advantages | ・There are many regions with industrial structure and climate similar to those of Hokkaido, where the experience and technologies may be utilized. The development of the 6th industry and the industry-government-academia collaboration are attracting growing interest in the regions.<br>・Companies with experience in business development in Russia and China can utilize their business experience in obtaining permissions and approvals, settlement of accounts, physical distribution, etc. (especially in the case of Eurasian Economic Union member countries and Mongolia).<br>・Utilization of technologies in Hokkaido have been discussed in the intergovernmental talks with Mongolia and Central Asian countries. Embassies and other authorities have expressed their expectations at seminars in various countries. |
| Problems | ・Companies in Hokkaido generally lack experience in international business, and need sufficient advance preparation. It is essential to obtain collaboration of organizations and groups that can offering expertise in language and commercial transactions needed for business.<br>・There are no local contact points for information gathering, consultation, and preparatory work for business activities. Because the scale of business is small, cooperation of large trading companies may be difficult to obtain.<br>・As a problem common to all Japanese companies, there are few routes for physical distribution and international travel to the target countries.<br>・In the case of trading, physical distribution cost tends to be high due to the high cost of customs clearance, the long time needed for customs clearance, and the imbalance of trade with an excess of imports over exports, which causes the problems of one-way transportation and small shipping lots. |

There is a need for awareness of the business environment in each individual country. The table below shows how each target country ranked in Doing Business, a World Bank publication, and includes the rankings of Japan and Russia for comparison. It is worth noting that interviews conducted in the field revealed that some countries with high rankings in individual categories faced different circumstances in actuality due to changes to systems and socioeconomic circumstances. In addition, the reader is asked to be aware of the possibility that the evaluations of energy-producing countries may change significantly in the future due to sluggish oil prices and the accompanying currency devaluation in recent years.

Table 6-3　Ease of Doing Business in Target Countries

(Numbers are rankings)

| | Overall | Starting a business | Dealing with construction permits | Getting electricity | Registering property | Getting credit | Protecting minority investors | Paying taxes | Trading across borders | Enforcing contracts | Resolving insolvency |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Georgia | **24** | 6 | 11 | 62 | 3 | 7 | 20 | 40 | 78 | 13 | 101 |
| Armenia | **35** | 5 | 62 | 99 | 14 | 42 | 49 | 41 | 29 | 28 | 71 |
| Kazakhstan | **41** | 21 | 92 | 71 | 19 | 70 | 25 | 18 | 122 | 9 | 47 |
| Mongolia | **56** | 36 | 25 | 134 | 44 | 59 | 8 | 91 | 74 | 80 | 89 |
| Azerbaijan | **63** | 7 | 114 | 110 | 22 | 109 | 36 | 34 | 94 | 40 | 84 |
| Kyrgyzstan | **67** | 35 | 20 | 160 | 6 | 28 | 36 | 138 | 83 | 137 | 126 |
| Uzbekistan | **87** | 42 | 151 | 112 | 87 | 42 | 88 | 115 | 159 | 32 | 75 |
| Tajikistan | **132** | 57 | 152 | 177 | 102 | 109 | 29 | 172 | 132 | 54 | 147 |
| Japan | **34** | 81 | 68 | 14 | 48 | 79 | 36 | 121 | 52 | 51 | 2 |
| Russian Federation | **51** | 41 | 119 | 29 | 8 | 42 | 66 | 47 | 170 | 5 | 51 |

(3) Consideration of the Use of JICA Schemes

Based on the problems reviewed in (2), it is possible that Hokkaido-based companies expand business in target countries using a combination with the JICA schemes listed on the next page. However, it must be noted that available schemes and themes differ from country to country.

① Use of Private Collaboration Project

Private collaboration projects can result in a reduced burden of preliminary studies, feasibility studies and experiments of introduction to localities. However, note that JICA must approve of them in advance due to the different scales of target countries and target corporations.

② Grass Roots Technical Cooperation

Grass roots technical cooperation is a scheme in which JICA supports the international cooperation activities conducted by NGOs, universities, local governments, public service corporations, and other organizations for the inhabitants of developing countries. It is possible to use this scheme for the purpose of building the foundation for long-term efforts, such as building a relationship of trust and technology transfer, under the lead of communities and related organizations.

③ Collaboration with Other JICA Projects

While the technical cooperation projects, grant aid cooperation, etc. conducted by JICA are contributing to the development of recipients such as developing countries, it is possible to use the technologies and materials of Hokkaido-based companies in such projects, leading to the promotion of their business in the target regions. In addition, it is also possible to consult with the JICA Hokkaido International Center and other JICA Centers and exchange opinions with trainees through training work outsourcing, cooperation and the like to confirm needs and consider challenges.

# 7 Recommendations of the Survey Team to Hokkaido and the Target Regions for the Promotion of Private Collaboration (Conclusion)

(1) Securing Scale by Targeting Multiple, Neighboring Countries

Given GDP, there appears to be little merit to directing business to each country individually. Therefore, a strategy targeting multiple, neighboring countries must be put together. If multiple markets are being considered, markets must be sorted in light of the following points.

① Markets That Can Share Physical Distribution Routes

Securing physical distribution routes is an important issue in considering business in Central Asia and the Caucasus. In the case of exportation of materials and equipment, it is necessary to consider the supply system for not only the main units but also parts and expendables.

② Markets Belonging to the Common Economic Zone (EEU[2]) and Markets as the Gateway to Other Countries

Considering the procedures for obtaining certificates, permissions, and approvals needed for exportation and technology transfer to the target countries, it is efficient to secure a market size by forming a market including multiple countries where the same systems can be used.

③ Markets with Common Language, Dietary Habits, etc.

When the business of supplying foods, machines, etc. to general consumers is considered, it is necessary to provide product explanation, quality certificates, etc. in the languages of the target countries.

(2) Cross-Sectional Survey Implementation

Useful means for the promotion of private collaboration is to conduct a cross-sectional survey of the target regions for the purpose of securing market size, comprehensive consideration of physical distribution routes, consideration of the ways to avoid various risks by including multiple countries in the target, and the concrete comparison of advantages and disadvantages of target countries.

(3) Information Sharing in Hokkaido and Promotion of Collaboration among Target Countries

Taking this survey as an opportunity, companies planning to expand private business are therefore advised to have regular occasions for information sharing as long as they do not affect their individual businesses. In particular, sharing of information concerning physical distribution, customs clearance, and the credit of business partners is effective in cost reduction and avoidance of risk.

[2] EEU: Eurasian Economic Union / As of March, 2016, its members are Russia, Belarus, Kazakhstan, Kyrgyz Republic and Armenia. See EEU official website (http://www.eaeunion.org/?lang=en) for detail.

Furthermore, collaboration of companies in diversified fields enables them to promote their businesses as a package. For example, a plan to spread liquid fertilizer generated by a biogas plant onto farmland can be offered as a package linking the plant owner to an agricultural machinery corporation.

Conversely, if a business succeeds in one country, sharing information about the successful model with neighboring countries can be effective PR toward expanding markets for Hokkaido corporations. Thus, there is a constant need to confirm the networking of neighboring countries with shared challenges. When a business is developed in multiple countries, the presence of a good network among the target countries is considered to facilitate smooth sharing of solutions to problems, common human resource development, and the sharing of functions in business.

# Ⅱ Main Chapter

## 1 Background of the Survey

Hokkaido grew from an area with a population of about 60,000 in the Meiji era to the home to 5.7 million people in only a little more than 100 years, as a result of the efforts to develop industries mainly in agriculture, forestry, fishing, and mining and regional development, supported by the land reclamation and development conducted by the government of Japan, as well as the introduction of technologies from overseas and the assistance from international organizations. While Hokkaido is gifted with features promising a great potential, such as vast land, abundant natural resources, fertile fields, and a climate that favors agriculture, the process of regional development has not been an easy one because of harsh environmental conditions in winter, natural disasters, crop failures, pest damage, and other difficulties. In addition, Hokkaido has experienced drastic changes in its economic environment, such as the decline of the coal industry that once was the mainstay of the area and the downturn in fisheries production after the introduction of the 200 nautical mile exclusive economic zone, and the area also has disadvantages in terms physical distribution, such as the distance to Tokyo and other major consumption centers. However, it is now gradually strengthening its competitive power, supported by the ability to produce agricultural and livestock products with high quality and price competitiveness.

Hokkaido has also experienced drastic changes in its economic environment, such as the decline of the coal industry that once was the mainstay of the area and the downturn in fisheries production after the introduction of the 200 nautical mile exclusive economic zone. Although Hokkaido has gained the ability to produce high-quality, price competitive agricultural and livestock products, it is still faced with the problems such as the distance to major consumption centers, and a lack of processing and distribution technologies and workers.

In this situation, Hokkaido has been striving to solve these problems under the development plan of the national government and the strategies of Hokkaido Prefecture and municipalities through industry-government-academia joint initiatives and collaboration. The experience and methods accumulated in such regional development and promotion of industries through government-private collaboration are considered useful for Mongolia, Central Asia, and the Caucasus (hereinafter referred to as “the relevant regions”), which have similar environment and problems.

Due to the deceleration of the economy of Russia, which historically exerted economic influence over the relevant regions, the target countries are now finding difficulty in constructing industrial infrastructure and improving their economic environment using their own funds and technologies. They need investment and technical assistance from third countries, as well as trade expansion, and they hope to invite Japanese investment and the overseas operations of Japanese companies.

Particularly with respect to Mongolia, the mid-term action plan for Japan and Mongolia[3] in September 2013 stipulated the goals of sharing expertise in agriculture/stock farming and cold-climate technologies in Hokkaido, as well as expanding exchange. The government of Hokkaido already in 2015 signed a memorandum with the Ministry of Energy and the Ministry of Food and Agriculture of Mongolia concerning economic and technical exchange from the perspective of "contribution and entry" benefiting the both parties, and the industrial, public, and academic sectors of Hokkaido have also been conducting economic exchange with Mongolia, making use of various JICA programs such as grass roots technical cooperation, training programs, and support to overseas expansion of small and medium-sized enterprises, aiming at further expansion of activities.

With respect to Central Asian countries, the government of Japan in 2004 launched the "Central Asia plus Japan" framework for the dialogue and cooperation with these countries. The road map[4] for the regional cooperation in the agriculture sector formulated through the dialogue in 2014 mentioned the participation of Hokkaido-based companies and introduction of technologies concerning agricultural and stock farming machines and wide-area dairy farming technologies.

With respect to the Caucasus, the Japan-GUAM Cooperation Program was signed by the GUAM Organization for Democracy and Economic Development[5] (with Azerbaijan and Georgia among members) and Japan, stipulating promotion of cooperation in tourism, energy, transport, environmental protection, trade, investment, and other sectors where the both parties share common interest. In addition, the Japanese Embassy in Armenia was established in the capital Yerevan in 2015, awakening expectations for future exchange in economy, culture, etc.

Based on the above, this survey examined the directions and policies of private companies in Hokkaido concerning their technologies, resources, and overseas business expansion, reviewed the development needs in the relevant regions, and analyzed the possibility of matching between the two parties. Furthermore, this survey was conducted that the information on the result of analysis would be shared to promote private collaboration and be used in project identification and project formation (technical cooperation, ODA loan, overseas investment, etc.) in the fields that would benefit the business development of private companies.

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[3] Officially called "the Japan-Mongolia Mid-Term Action Plan for a Strategic Partnership" (2013-2017). Japanese Prime Minister Shinzo Abe met with Mongolian Prime Minister (then) Norovyn Altankhuyag and issued the joint statement of Japan and Mongolia concerning the strengthening of "a strategic partnership" as an outcome of the meeting. The mid-term action plan was formulated in this context for the purpose of strengthening and expanding the reciprocal, mutually complementary bilateral relationship between the two countries.

[4] The 7th Senior Officials Meeting of "Central Asia Plus Japan" Dialogue held on October 22, 2013 in Bishkek (hereinafter referred to as "SOM") identified agriculture as a pilot field for regional cooperation. This road map was produced based on the opinions of countries participating in the "Central Asia Plus Japan" Dialogue at the 8th SOM on March 19, 2014 in Tokyo and considering the agricultural projects formulated by Central Asian countries. (http://www.mofa.go.jp/mofaj/files/000045366.pdf)

[5] Georgia, Uzbekistan, Ukraine, Azerbaijan, and Moldova, the countries sharing a policy of keeping distance from Russia, formed GUUAM in 1999 for the purpose of promoting democracy and economic development (the name was derived from the initials of member countries).

## 2 Purpose of the Survey

The purpose of this survey was to examine the possibility of collaboration on a private basis and consider the future development of assistance under the JICA scheme (private collaboration projects, etc.) by confirming the policies and directions of the private companies in Hokkaido concerning technologies, resources, and overseas business expansion, as well as the development needs of the relevant regions, and then by conducting the analysis of the possibility of matching between the two parties.

## 3 Survey Implementation Policy

The survey was performed based on the following five points.

### (1) Collaboration with the Policies of Japan and Multilateral/Bilateral Efforts

Understanding of the policies of Japan for the assistance to the governments of relevant countries in this survey is expected to help effective promotion and a synergic effect with the projects of related organizations. With respect to Mongolia, the Erch Initiative Plus[6] in July 2014 identified the promotion of business exchange between the two countries as a new way to industrial development and called for cooperation in agriculture and stock farming, mining, and other fields where the experience of Hokkaido can be used effectively.

In the "Central Asia Plus Japan" Dialogue, the road map for the cooperation in the agricultural field was produced in July 2014, and the visit of Prime Minister Abe to Central Asia in October 2015 resulted in developments such as the establishment of inter-governmental working groups toward the signing of MOUs among companies and organizations. On March 2, 2016, the "Central Asia Plus Japan" Dialogue and the Tokyo Dialogue focused on transportation and physical distribution as the main theme, and also discussed water resource management, border control, etc., confirming further promotion of cooperation with Japan based on the collaboration in the Central Asian region.

The Global Food Value Chain Strategy of the Ministry of Agriculture, Forestry, and Fisheries covers the overseas expansion of Japanese companies and infrastructure export in the field of agriculture, forestry and fisheries. With respect to Mongolia, it considered the improvement of environment for the trade of Japanese rice, which is led by the private sector. With respect to the countries in Central Asia and the Caucasus, based on "the Project for Survey and Analysis of Agriculture and Trade in Overseas Countries (Survey and Analysis of NIS Countries (Commonwealth of Independent Countries in the Former USSR Region))" for 2014, assistance in the experimental cultivation of pulses was implemented in Kazakhstan in 2015.

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[6] On July 22, 2014, Mongolian President Tsakhiagiin Elbegdorj visiting Japan met with Japanese Prime Minister Shinzo Abe. Abe proposed the implementation of "Erch Initiative Plus" to promote the Mongolian exportation and diversification of industries, aiming at the quality improvement and volume expansion of the export of Mongolian products to Japan and other countries. He also expressed the intention to provide necessary support, including human resources development in Mongolia.

(2) Country Analyses Based on the International Situation

Mongolia, Central Asia, and the Caucasus are affected by the moves in Russia, which they are strongly related to in historical, economic, and political aspects. Investment and trade, as well as the remittance of money from migrant workers in Russia, exert large impacts depending on the economic condition of Russia. The exchange rate fluctuations in the Russian currency also greatly affect the finances in the target countries, as represented by the recent substantial devaluation of Kazakhstani local currency tenge in the wake of the devaluation of ruble in August 2015. Therefore, Kazakhstan, Kyrgyzstan, and Armenia among the target countries of this survey are members of Eurasian Economic Union (EEU), along with Russia and Belarus. While the establishment of a system for the free movement of products, funds, and people in the area is expected to expand transactions in the area, trade with the countries outside of the Union may suffer from tightening of control.

In addition, the economic and political influence of China and Korea must also be considered. China is actively conducting investment and international cooperation in these regions, and also expanding the import of resources and raw materials form the relevant countries, while developing the environment for physical distribution and the flow of goods in these areas as the markets for daily commodities. Korea is also making an approach to the relevant countries as the markets for products and technologies that are similar to those of Japan. Its products are accepted well by companies and consumers because of their relatively stable quality and price competitiveness.

Currently in these regions, various frameworks for multilateral cooperation and exchange promotion exist as listed below, and it is necessary to pay attention to the influence of these programs and agreements.

Table 3-1 Affiliation of Target Countries of Survey with International Organizations (Mongolia, Central Asia, and the Caucasus)

| No. | Country | GDP (2014, the World Bank, billion dollars) | Name of organization and total number of member countries | | | | | | Number of affiliated organizations |
|---|---|---|---|---|---|---|---|---|---|
| | | | CIS Commonwealth of Independent Countries | CSTO Collective Security Treaty Organization | SCO Shanghai Cooperation Organization | EAEC/ EurAsEC Eurasian Economic Community | GUAM – | Eurasian Economic Union | |
| | | | 9 | 6 | 6 | 6 | 4 | 5 | |
| 1 | Mongolia | 12.0 | | | | | | | 0 |
| 2 | Kazakhstan | 212.2 | ○ | ○ | ○ | ○ | | ○ | 5 |
| 3 | Kyrgyzstan | 7.4 | ○ | ○ | ○ | ○ | | ○ | 5 |
| 4 | Uzbekistan | 62.6 | ○ | | ○ | ○ | | | 3 |
| 5 | Tajikistan | 9.2 | ○ | ○ | ○ | ○ | | | 4 |
| 6 | Turkmenistan | 47.9 | | | | | | | 0 |
| 7 | Georgia | 16.5 | | | | | ○ | | 1 |
| 8 | Armenia | 10.9 | ○ | ○ | | | | ○ | 3 |
| 9 | Azerbaijan | 75.2 | ○ | | | | ○ | | 2 |

* Only official members are counted (excluding observers, etc.)* Compiled by HIT from various sources (as of September 2015)

(3) Discussion Based on the Japanese Policy for Support to Target Countries

To introduce the technologies and expertise of Hokkaido to counterpart countries and promote private collaboration, it is necessary to base the actions on the needs of the counterpart countries and the strategies of Japan. The needs of the countries are confirmed in this survey, which was conducted based on the strategies of the Ministry of Foreign Affairs and JICA shared by the governments of counterpart countries and Japan.

(4) Technologies and Expertise of Hokkaido

The technologies and expertise of Hokkaido identified based on the study policy in (3) above are summarized in Table 3-2. These technologies have already been the themes of technical cooperation provided from Hokkaido to Russia, the Northeastern provinces of China, and East Asia and the training in Japan. On the basis of such information on the present state, this survey attempted to identify new resources and technologies suitable to the relevant countries.

Table 3-2 Technologies in Hokkaido That Are Beneficial to the Development of Counterpart Countries

| Category | Feature | Resources in Hokkaido | Description | References |
|---|---|---|---|---|
| Agriculture and stock farming | ・Hokkaido is a large agriculture and stock farming area occupying 1/4 of the arable land area in Japan.<br>・Hokkaido with 1.15 million hectares of farmlands and cool climate bears an important role as a food production center in Japan.<br>・Various products are produced thanks to different climate in different parts of the area.<br>・Development of crops and cultivation techniques suitable to each area, promotion of dairy and stock farming and development of technologies, and tests and investigation concerning food safety and biotechnology are | Recycling-type agriculture and stock farming utilizing animal manure | ・ Technologies that established the appropriate composting of waste manure and utilization in agriculture and stock farming. | "Establishment of Recycling-Type Agriculture Utilizing Animal Manure and Environmental Conservation Project" 2014-2017 / JICA Grass Roots Cooperation / Mongolia) |
| | | Vegetable production technology using renewable energy (underground heat) and energy-conserving facility gardening | ・ Greenhouses using underground heat enabled greenhouse cultivation of vegetable for a longer time without depending on oil boilers. | "Project to Support Vegetable Production Technology in Energy-Conserving Facility Gardening Using Renewable Energy (Underground Heat) (2014-2016 / JICA Grass Roots Cooperation / Mongolia) |
| | | Clean agriculture | ・ Taking advantage of favorable land conditions and natural conditions, soil is improved using composts and other organic matter aiming at producing environmentally friendly, safe, secure, and tasty products.<br>・ Reduction of the use of chemical fertilizers and pesticides. | Hokkaido projects http://www.pref.hokkaido.lg.jp/ns/shs/clean/ |
| | | Modernized dairy farm operation | ・ Hokkaido has grown to the largest dairy farming center in Japan incorporating the dairy farming technologies of Western countries.<br>・Dairy farm operation with modernization of facilities and technologies according to the change of times. | Hokkaido projects http://www.pref.hokkaido.lg.jp/ns/tss/ |
| | | Agricultural and stock farming | ・ The base for the production, distribution, use, development, and popularization of | "Project to Promote Private Technology Penetration for |

| Category | Feature | Resources in Hokkaido | Description | References |
|---|---|---|---|---|
| | conducted, realizing the production of high-quality products. | machines | agricultural and stock farming machines in Japan.<br>・Development of made-in-Japan agricultural and stock farming machines with high value added and safety/security making use of ICT and GPS technologies.<br>・Ample past records of export of agricultural and stock farming machines to other countries including Central Asia and Russia. | Socioeconomic Development of Developing Countries" (2013 / JICA Private Collaboration Project / Kyrgyzstan and Kazakhstan |
| | | Remote sensing | ・Early introduction of remote sensing using artificial satellites for crop assessment and fertilizer management. | "Technology for the Use of IT Systems in Agriculture" (2012-2014 / JICA / African countries) |
| | | Field irrigation facilities | ・Construction of systems for sprinkling water from reservoirs to fields at appropriate times in appropriate quantities through installation of sprinklers and reel machine.<br>・Expected improvement in yield and quality of crops. | Hokkaido projects http://www.pref.hokkaido.lg.jp/ns/nts/35hatakan.htm |
| Food industry | ・Hokkaido is a trove of safe, secure, and attractive food materials supplied freshly and abundantly from the sea and the earth.<br>・Local efforts toward branding of local products taking advantage of the superiority of Hokkaido in the food field.<br>・Efforts toward the sophistication of primary industries and the increase in added value, aiming at comprehensive development of the food industry and the expansion of the markets for Hokkaido's products.<br>・Formation of food clusters that strengthen and expand the collaboration among businesses from production to processing, distribution, and sales. | Technologies for frozen storage of fresh vegetables | ・Development of a quick freezing technology in which fresh cut vegetables are immersed in special sugar solutions and dewatered sufficiently.<br>・Establishment of a frozen storage technology enabled storage after a large harvest and off-season shipping. | Hokkaido Research Organization projects http://www.hro.or.jp/list/industrial/research/food/index.html |
| | | Meat processing technologies | ・Development of a technology to tenderize the hard meat of culled cows using enzyme treatment. | Hokkaido Research Organization projects http://www.hro.or.jp/list/industrial/research/food/index.html |
| | | Dairy product processing | ・Diversified products are deployed using the milk produced in the dairy farming kingdom of Hokkaido in butter, cheese, confectionery, etc. | "Project for Information Sharing on Hokkaido in Russian (Emergency Employment Creation Program)" (2010 / Hokkaido project) |
| | | Functional foods | ・Achievement of high value added under the key word "health" through processing and production of functional foods using the beneficial constituents of food materials from Hokkaido.<br>・Hokkaido has established its own system for approving functional foods, aiming at market development in and outside of Japan. | Hokkaido projects http://www.pref.hokkaido.lg.jp/kz/sss/ks/hyouziseido.htm |
| | | Branding | ・Product development using the abundant farm and marine products taking advantage of local characteristics to achieve more value added, market expansion, and the recognition of producing areas. | "Project for Information Sharing on Hokkaido in Russian (Emergency Employment Creation Program)" (2010 / Hokkaido project) |
| | | Development of convenient method to detect food poisoning | ・Development of a detection system that can easily identify Staphylococcus aureus without training. | Hokkaido Research Organization projects http://www.hro.or.jp/list/industr |

| Category | Feature | Resources in Hokkaido | Description | References |
|---|---|---|---|---|
| | | pathogens | | ial/research/food/index.html |
| Tourism | ・Hokkaido with a vast area has a wide variety of terrains and climates, offering various opportunities from city sightseeing to outdoor experiences.<br>・Promotion of development as a long-stay tourist destination through the development of attractions taking advantage of diversified local resources and the services delivering high customer satisfaction.<br>・In particular, Hokkaido in winter is well known in and outside of Japan as a world-class ski resort area. | Eco-tourism and green tourism | ・Communities are joining forces to show the values and importance of natural environment, history, and culture to tourist, aiming at helping environmental conservation.<br>・Promotion of long-stay tourism in rural areas enjoying nature, culture, and interaction with people.<br>・The development of farm inns and farm restaurants is at the top level in the country. | "Project for Information Sharing on Hokkaido in Russian (Emergency Employment Creation Program)" (2010 / Hokkaido project) |
| | | Wide-area landscape development | ・Promotion of flower tourism through garden development using vast land.<br>・Roadside landscape improvement along the routes between cities and the designation of scenic highways are promoted to enhance attractiveness for tourists. | Hokkaido projects http://www.pref.hokkaido.lg.jp/kn/tki/mdr/syusakeikan.htm |
| Cold-climate technologies | ・Given the weather condition of coldness with much snow, Hokkaido has special civil engineering and construction technologies for cold climate, such as winter road management, high heat insulation, and durable structures.<br>・Many companies and organizations specializing in cold-climate technology has accumulated in the area. | Northern-type housing technologies | ・Four basic performance requirements for living in cold climate with much snow have been defined: "long service life," "safety and health," "coexistence with environment," and "local character."<br>・According to the concrete design standards in the four basic performance requirements, construction technologies are used in a good balance of comfort, safety, health, energy saving, and durability appropriate for the cold climate with much snow. | "Survey for the Project on Energy-Saving Inexpensive Houses for Cold Districts" (2012 / JICA Project to Support Overseas Expansion of Small and Medium-sized Enterprises / Mongolia) |
| | | Earthquake-resistant construction technologies | ・Development of a construction method for seismic retrofitting of concrete structures by wrapping strong, lightweight, and corrosion resistant carbon fiber sheets on concrete surfaces.<br>・Seismic retrofitting of bridge piers, distributing reservoirs, underground malls, bridges, etc. | "Project for Information Sharing on Hokkaido in Russian (Emergency Employment Creation Program)" (2009 / Hokkaido project) |
| | | Technologies to support driving in snowstorm and against avalanche in winter. | ・As the measures against low visibility in snowstorm, drift snow, avalanche, and other traffic hazards on winter road, roads are improved with snow fences to prevent drift snow and improve visibility and avalanche fences to prevent avalanche. | "Project for Information Sharing on Hokkaido in Russian (Emergency Employment Creation Program)" (2010 / Hokkaido project) |
| | | Technology concerning road freezing and frost heaving in winter | ・Measures against road freezing in winter include road heating, antifreezing agents, snow plowing, non-freezing pavement, nonslip pavement, etc. | "Project for Information Sharing on Hokkaido in Russian (Emergency Employment Creation Program)" (2011 / Hokkaido |

| Category | Feature | Resources in Hokkaido | Description | References |
|---|---|---|---|---|
| | | | | project) |
| Low population density | ・ Hokkaido has a population of 5,506,419 (2010 census), representing about 4.3% of the total population of Japan.<br>・ Population density, 70 persons/km$^2$, is about 1/5 of the national average (343 persons/km$^2$), ranking the lowest among all prefectures. The society is spread thin over a wide area.<br>・Medical services must be suitable to the area characterized by the long distance between cities and low population density. | Telemedicine | ・Medical services are delivered using the internet and other communication technologies, minimizing the need for face-to-face consultation.<br>・This is expected to be a solution to the shortage of physicians in rural areas. | Asahikawa Medical University Hospital projects http://www.asahikawa-med.ac.jp/index_h.php?f=hospital+patient+tyuou_enkaku |
| | | Improvement of speed and reliability of emergency patient transportation | ・To provide wide-area medical services under the extremely severe conditions such as the concentration of physicians to cities, sparse transportation networks, and poor traffic conditions in winter, a system for emergency patient transportation has been developed supported by road improvement and the use of doctor helicopters. | Hokkaido Regional Development Bureau projects http://www.hkd.mlit.go.jp/topics/gijyutu/giken/h26giken/h26notice.html |
| Other | ・Primary industries are actively moving toward the development as the 6th industry, which means producers engage in all stages from production to processing, distribution, sales, and services, leading to local revitalization through creation of employment and increase in the income of producers.<br>・Progress is seen in the use and development of various reusable energy backed by rich natural environment. | Evolution to the 6th industry | ・Hokkaido is ranked the highest in direct sales, operation of farm restaurants and farm inns, and product development and branding of processed products by primary industry producers. | “Regional Development through the Development of Agriculture as the 6th Industry Combined with Tourism” Course (Georgia) (2015 / JICA Training Program) |
| | | Biomass energy | ・Community mechanisms for the use of renewable energy aiming at the reduction of fossil fuel consumption are promoted through the development of various technologies such as the use of residues from fields and forests and the cultivation of energy crops.<br>・Snow in winter and ice produced by cold outdoor air are stored for use as heat sinks in summer, and the cold air from them are used for refrigeration of produce and room cooling.<br>・Sawdust and wood wastes from timber processing are used as the fuel for wood-based biomass boilers. This helps forest conservation through effective use of forest resources while minimizing the generation of wastes. | Project to Support Spread of Biogas Technology in the Republic of Kyrgyzstan (2007-2011 / JICA Grass Roots Technical Cooperation/ Kyrgyzstan) |

(5) Examination of the Promotion of Private Collaboration Considering Past Lessons

As mentioned in "1 Background of the Survey," the purpose of this survey is to promote private collaboration of Hokkaido-based companies with technologies and experience that are considered suitable to the developmental challenges of the target countries in a manner that would contribute to the solutions in these countries. However, based on the lessons learned from past cases of overseas operations of Hokkaido-based companies, attention must be paid to the following points.

① The needs of the counterpart country must be considered sufficiently. Hard selling from the standpoint of the supplier must be avoided.

In many cases of overseas expansion of business, companies started operations without confirming the needs of the counterpart because they had too much confidence in their technology, and this resulted in the failure to continue business due to the mismatch with the needs of the counterparts, price levels, and technical levels.

② The difference between the environment of Japan and the counterpart country must be understood.

For example, personnel cost and fuel cost in Mongolia are lower than those in Japan. Mongolian companies therefore may not be interested in the introduction of Japanese technologies unless it would offer managerial advantages such as substantial cost reduction and improvement in production efficiency. (For a local company introducing machines for cost reduction, the initial investment and maintenance cost for these machines may outweigh the reduction in personnel cost and energy cost, which are low from the beginning.)

③ The necessary conditions for sustainable business must be grasped.

A system for sustainable supply cannot be established without understanding the requirements concerning the means and cost for distribution of goods and parts, technical regulations in the counterpart country, maintenance system, and training of maintenance personnel.

④ Adequate capability for implementation must be maintained in Japan with a long-term plan.

In the case of Hokkaido, many companies are small and medium-sized, and the shortage of workers and funds may make the continuation of business impossible. It is therefore important to maintain adequate capability for implementation and have a long-term plan. (For example, there are cases of Japanese companies that once expanded business to other countries due to the shrinkage of domestic construction and civil engineering markets in Japan, but ended up in scaling down or discontinuation of overseas operations because of the robust domestic markets due to the increase in public works at the present.)

# 4 Method of Survey Implementation

(1) Flow of Survey Implementation

As shown in the Figure below, project that would be beneficial to the both sides was proposed based on the understanding of the needs and problems of the relevant countries after the usefulness of the resources in Hokkaido was reviewed and analysis was conducted taking into consideration the benefit to Hokkaido-based companies.

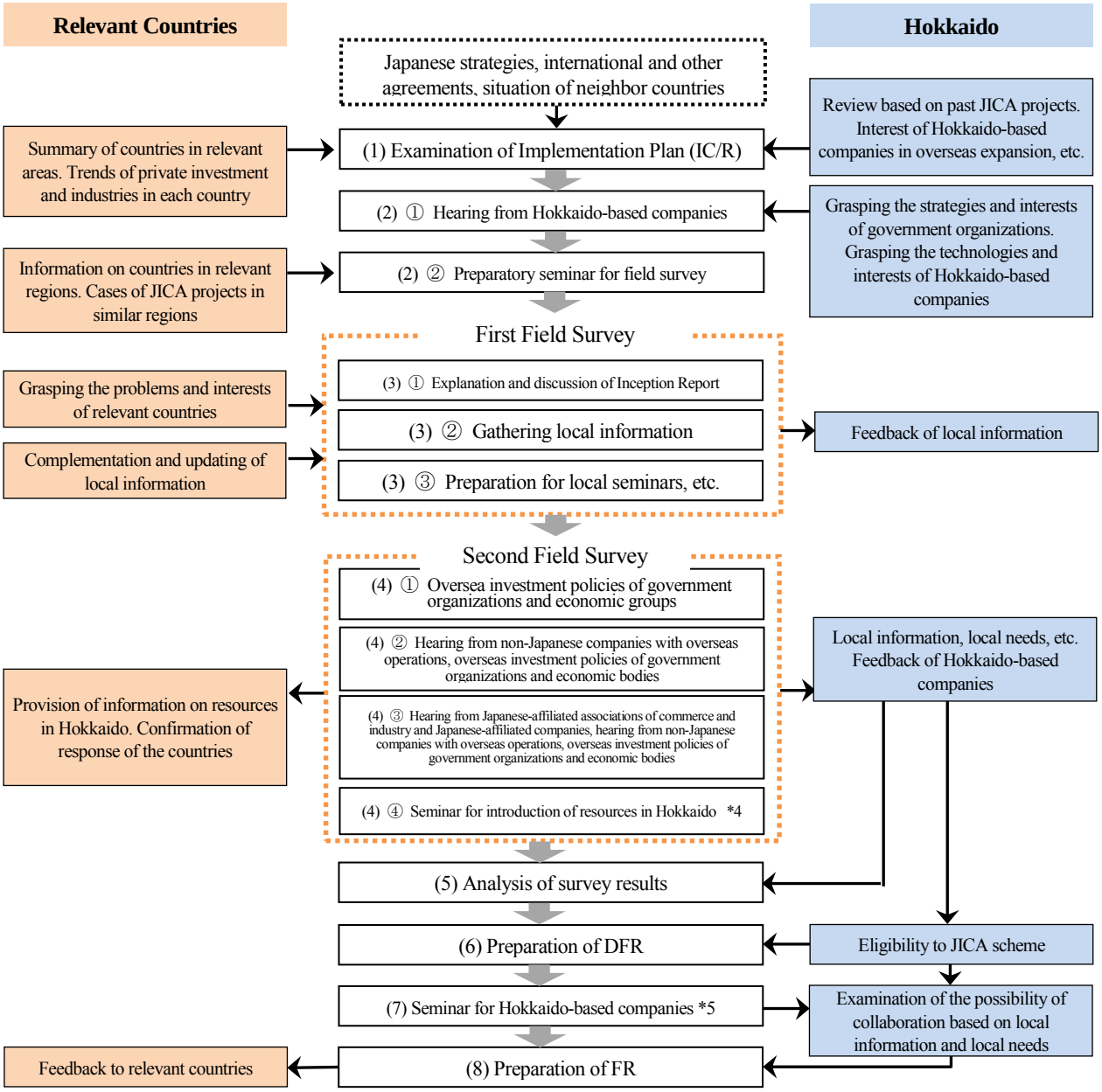



Figure 4-1 Flow Chart of Survey Implementation

(2) Overall Flow

The service was executed following the steps from the survey on the technologies and resources in Hokkaido to the survey on the needs on the target countries, the examination of the matching between Hokkaido and the target countries, and the feedback of the survey results to the Hokkaido region.

In particular, field seminars in the target countries (seminars to introduce Hokkaido's resources) were conducted in five countries (Mongolia, Kazakhstan, Kyrgyzstan, Uzbekistan, and Armenia) in January and February 2016 as the occasions for the private companies on the both sides to matching of technologies and needs. Hokkaido-based companies participated in field missions in the form of attendance to the survey team during field surveys.

Table 4-1 Survey Components in Each Target Country

| | Basic survey | Field surveys (1st and 2nd) | Field seminar |
|---|---|---|---|
| Mongolia | ○ | ○ | ○ |
| Kyrgyzstan | ○ | ○ | ○ |
| Kazakhstan | ○ | ○ | ○ |
| Uzbekistan | ○ | ○ | ○ |
| Tajikistan | ○ | － | － |
| Turkmenistan | ○ | － | － |
| Armenia | ○ | ○ | ○ |
| Azerbaijan | ○ | ○ | － |
| Georgia | ○ | － | － |

(3) Purposes and Results of Works Executed

① Work in Japan

In preparation for the identification of needs in the target countries, preliminary surveys on the general condition of economy, industrial structure, ease of doing business, etc. were conducted to understand the characteristics of each country.

In addition, interviews in Hokkaido (interviews with Hokkaido-based companies) were conducted to confirm the technologies, products, and services possessed by Hokkaido-based companies by means of individual visits in November 2015, and questions were asked of 23 companies, municipalities, and organizations concerning the concrete details of technologies and the intention to expand business in overseas areas including the target countries.

To share the gist of this survey with stakeholders in and outside of Japan, the IC/R (Inception Report) was prepared as an explanatory material and translated for the target countries.

② Preparatory Seminar

A preparatory seminar was held in Sapporo City on November 25, 2015 inviting Hokkaido-based companies interested in the business in the target countries for the purpose of confirming the concrete degree of their interest. At the seminar, the survey team explained the outline of the target countries and the

outline of the field missions, and the intention to participate in field missions was confirmed using a questionnaire. As a result. 13 of the 67 participants of the seminar answered the questionnaire.

Table 4-2 Preparatory Seminar for Field Survey

| | |
|---|---|
| Date | November 25, 2015 |
| Place | Sapporo City |
| Themes | ○ Opening address and explanation of summary of project target countries<br>○ Explanation of the project<br>○ Field report ①: Present state of overseas business expansion in Mongolia<br>○ Field report ②: Expectations of Central Asia and the Caucasus from Japan and Hokkaido<br>○ Field report ③: Reality of localization business at a plant extract factory in Central Asia<br>Special Lecturer: Mr. Hiroshi Takeuchi, General Manager, President's Office, Cokey Systems Co., Ltd. |
| Participants | 52 persons (relevant government organizations, private companies, universities, etc.) |
| Remarks | Participating companies answered questionnaires on the interest in the target countries and business plans. Results were used as reference materials in the selection of the participants of the field survey. |

③ Examination for Field Missions

The possibility of matching between the characteristics of the target countries and the technologies of Hokkaido-based companies was examined based on the results of interviews in Hokkaido and the results of the questionnaire. Specifically, the companies that would participate in field missions were selected from the standpoint of whether or not the industries expected to have needs in the target countries would match the products and services of Hokkaido-based companies, based on the companies' answers to the questionnaire.

In the selection of companies, the candidates were assessed comprehensively with respect to the visions on overseas business expansion and that in the target countries, the effects that can be given to the target countries, the benefit to the Hokkaido area as a whole, the matters they want to do during field missions, etc. based on the answers from the companies.

As a result, the nine Hokkaido-based companies and organizations shown in the Table below were selected to participate in the second field survey, which would verify the matching of local needs and the technologies and products of Hokkaido-based companies in the sectors of agriculture and stock farming, construction and infrastructure, and foods.

Table 4-3 Companies Participating in Field Missions

| No. | Company | Sector | Technology | Country visited |
|---|---|---|---|---|
| 1 | IHI STAR Machinery Corporation | Agriculture and stock farming | Agricultural machines | Mongolia |
| 2 | TOYONOKI Corporation | Agriculture and stock farming | Agricultural machines | Mongolia |
| 3 | Asahi Inovex Corp. | Construction and infrastructure | Heating equipment | Mongolia<br>Uzbekistan |
| 4 | Iwata Chizaki Inc. | Construction and infrastructure | Civil engineering and construction work | Mongolia<br>Uzbekistan |

| | | | | |
|---|---|---|---|---|
| 5 | Yokoichi Fromage Co., Ltd. | Agriculture and stock farming | Production of dairy products | Kazakhstan<br>Kyrgyzstan<br>Uzbekistan |
| 6 | Sanei Industry Co., Ltd. | Agriculture and stock farming | Agricultural machines | Kazakhstan<br>Kyrgyzstan<br>Uzbekistan |
| 7 | Itogumi Construction Co., Ltd. | Construction and infrastructure | Solar power generation systems | Kazakhstan<br>Kyrgyzstan |
| 8 | Hokusei-Kigyou Co., Ltd. | Construction and infrastructure | Waste recycling | Kazakhstan |
| 9 | Hokkaido Association for Bio Business | Foods | Functional foods | Armenia |

④ Field Surveys and Field Seminars

The survey team conducted two field surveys in December 2015 and January-February 2016 to gather information on the target countries. The surveys were conducted by individual interviews with companies, organizations, administrative bodies, etc. of the countries. During the second field survey, a seminar to introduce Hokkaido's resources was held as a field survey for the purpose of facilitating business matching. At this field seminar, nine Hokkaido-based companies offered presentations and question-and-answer sessions as the participants of field missions. The participants from the target countries counted 360 persons in the total of seminars in five cities.

The questionnaire survey conducted at the field seminars provided many opinions and comments from the participants concerning their interest in Japanese and Hokkaido-based companies, the industrial sectors they are specifically interested in, the details of their interest, their intention to do business with Japanese companies, and future problems, and opinions were exchanged vigorously among participants.

The results of individual interviews during the field surveys and the answers to questionnaires at the field seminars confirmed that there were certain needs for all Hokkaido-based companies that participated in the field missions, demonstrating that there were possibilities of matching as assumed in the beginning.

Table 4-4 Outline Schedule of the First Field Survey

| Country | Period | Destinations of Visits |
|---|---|---|
| Mongolia | December 7-12, 2015<br>(6 days) | Relevant government organizations, local companies, Japanese-affiliated organizations and companies |
| Kyrgyzstan | December 12-15 and 23-25, 2015<br>(7 days) | Local companies (dairy industry, tourism), Japanese-affiliated companies, Japan Center, Japanese Embassy, Association of Commerce and Industry, societies, local experts, administrative bodies, donors from other countries |
| Kazakhstan | December 11 and 16-22, 2015<br>(8 days) | Local companies (physical distribution), Japanese-affiliated companies, joint enterprises, Japan Center, Japanese Embassy, financial institutions, Association of Commerce and Industry, consultants and local experts, administrative bodies, government-managed enterprises, universities |
| Uzbekistan | December 1-9, 2015<br>(9 days) | Administrative bodies, local companies/groups/societies (agriculture, housing environment, energy), Japanese-affiliated |

| | | |
|---|---|---|
| | | companies, Japanese Embassy, Japan Center, various educational institutions, Association of JICA Training Graduates |
| Armenia | December 15-21,2015<br>(7 days) | Administrative bodies, local companies/groups/societies, Japanese Embassy, various educational institutions, Association of JICA Training Graduates, farmers, etc. |
| Azerbaijan | December 10-14, 2015<br>(5 days) | Administrative bodies, local companies and groups |

Table 4-5 Outline Schedule of the Second Field Survey

| Country | Period | Destinations of Visits |
|---|---|---|
| Mongolia | January 20-26, 2016<br>(7 days) | Relevant government organizations, local companies, Japanese-affiliated organizations and companies |
| Kyrgyzstan | January 21-27, 2016<br>(7 days) | Local companies, Japan Center, Japanese Embassy, Association of Commerce and Industry, local experts, administrative bodies |
| Kazakhstan | January 19-20 and 27-29, 2016<br>(5 days) | Local companies, Japanese-affiliated companies, joint enterprises, Japan Center, Japanese Embassy, financial institutions, Association of Commerce and Industry, consultants and local experts, administrative bodies, government-managed enterprises, universities |
| Uzbekistan | January 21-29, 2016<br>(9 days) | Administrative bodies, local companies/groups/societies, Japanese-affiliated companies, Japanese Embassy, Japan Center, various educational institutions, Association of JICA Training Graduates |
| Armenia | January 31-11, 2016<br>(12 days) | Administrative bodies, local companies/groups/societies, Japanese Embassy, various educational institutions, Association of JICA Training Graduates, farmers, etc. |
| Azerbaijan | January 28-February 6, 2016<br>(7 days) | Administrative bodies, local companies and groups, local governments, NPOs, farmers, etc. |

Table 4-6 Seminar for Introduction of Resources in Hokkaido

| Country | Date | Themes | Participants |
|---|---|---|---|
| Mongolia | January 22, 2016 | Agriculture, housing environment, renewable energy | 89 persons |
| Kyrgyzstan | January 21, 2016 | Agriculture, housing environment, renewable energy | 59 persons |
| Kazakhstan | January 25, 2016 | Agriculture, waste treatment, renewable energy | 95 persons |
| Uzbekistan | January 28, 2016 | Agriculture, housing environment, renewable energy | 67 persons |
| Armenia | February 8, 2016 | IT, functional foods | 50 persons |

⑤ Reporting Seminar for Hokkaido companies

To feedback and share the results of this survey as a whole, in particular the details of field surveys and field missions, widely among the stakeholders in the Hokkaido area, a reporting seminar (seminar for Hokkaido-based companies) was held in Sapporo City on February 15, 2016. This seminar was attended by 67 persons from companies, organizations, and administrative bodies. This seminar attracted more participants than the November seminar from various fields, indicating the presence of strong interest in Mongolia, Central Asia, and the Caucasus.

At the seminar, the survey team first provided country-by-country reports on the needs and problems in the countries and the possible solutions using the technologies in Hokkaido, and then gave comprehensive proposals concerning the possibility of business expansion of Hokkaido-based companies into the target

countries. Thereafter, the nine Hokkaido-based companies presented reports on the field missions, followed by question-and-answer sessions and the exchange of opinions. After the seminar, personal exchange of opinions was held concerning the actions in the next step, mainly led by the companies that participated in the field survey and gave presentations.

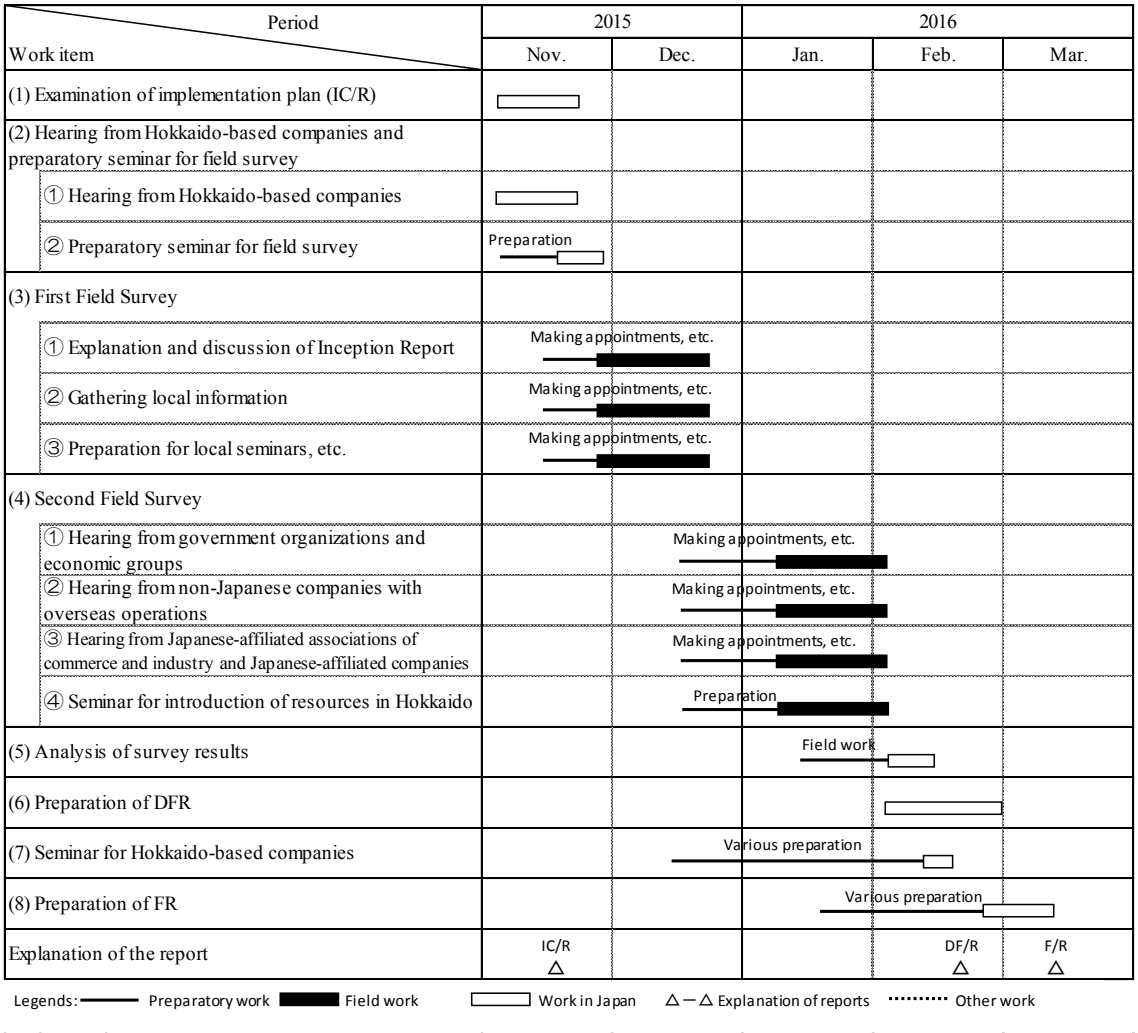
Table 4-7 Seminar for Hokkaido-Based Companies

| | |
|---|---|
| Date | February 15, 2016 |
| Place | Sapporo City |
| Themes | ○ Explanation of the project and summary of field survey results<br>○ Reports of field survey results from participating companies<br>Agriculture: Mongolia, Kazakhstan, Kyrgyzstan, and Uzbekistan<br>IHI STAR Machinery Corporation, TOYONOKI Corporation, Sanei Industry Co., Ltd., and Yokoichi Fromage Co., Ltd.<br>Waste treatment: Kazakhstan<br>Hokusei-Kigyou Co., Ltd.<br>Housing environment: Mongolia and Uzbekistan<br>Asahi Inovex Corp.<br>Renewable energy: Mongolia, Uzbekistan, Kazakhstan, and Kyrgyzstan<br>Iwata Chizaki Inc. and Itogumi Construction Co., Ltd.<br>IT and Functional Foods: Armenia<br>Hokkaido Association for Bio Business Survey Team |
| Participants | 67 persons (relevant government organizations, private companies, universities, etc.) |

# 5 Schedule

This survey was conducted according to the work schedule presented below.

**WORK SCHEDULE**




# 6 Personnel Plan

The Table below shows the main responsibilities and assignments of the personnel in this survey.

Table 6-1 Main Responsibilities of Survey Personnel

| Name | Specialty | Assignment in field survey |
|---|---|---|
| Takumi Togashi | Overall management / promotion of private collaboration | Uzbekistan, Azerbaijan, and Armenia |
| Yuichi Baba | Overseas investment policy | Mongolia, Kazakhstan, and Kyrgyzstan |
| Koh Nakamura | Analysis of the directions of Hokkaido-based companies | Kazakhstan, Kyrgyzstan, and Uzbekistan |
| Ryohei Nakanishi | Analysis of resources in Hokkaido | Mongolia |
| Kazuya Nakayama | Country needs analysis / operation of seminars (1) | Uzbekistan, Azerbaijan, and Armenia |
| Hitoshi Suzuki | Country needs analysis / operation of seminars (2) | Mongolia |

# 7 Country Reports

## (1) Mongolia

### ① Geographical features

Mongolia is an inland country in Northeastern Asia located between Russia and China. Of the 2.91 million population of the country as of 2014, 1.36 million live in the capital Ulaanbaatar (hereinafter referred to as UB). Other major cities include Darkhan in an industrial zone and Erdenet with a copper mine.

Figure 7-(1)-1 Mongolia

The routes of physical distribution from Japan to Mongolia are those using air transport and those using sea and land transport. The sea + land route via Tianjin, China, takes 24-34 days (can be longer in the peak period from May to September). The route via Vladivostok, Russia, takes 40 days or more. [7]


Figure 7-(1)-1 Railway line of Mongolia (Dotted line)
Source: Prepared from Landdatabase of Mongolian Information Center

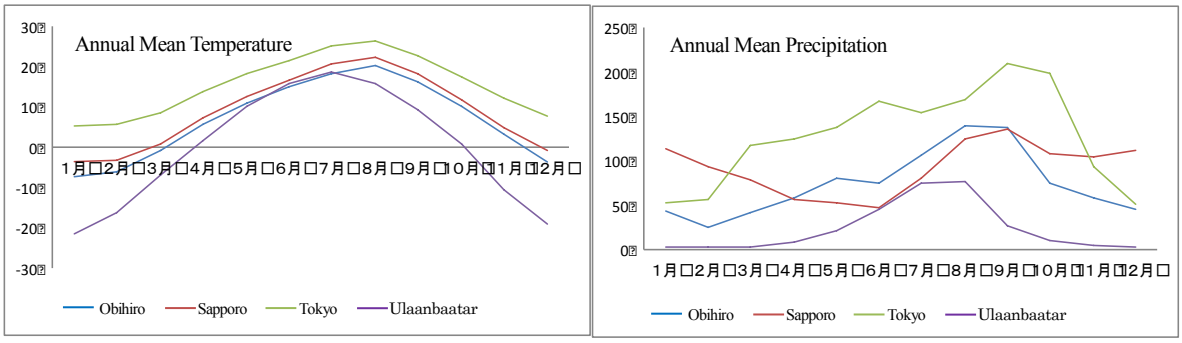
Because of the higher cost and longer time of the route via Russia, most of the transportation is made via Tianjin.

After sea transportation from Japan to Tianjin, cargos are either hauled by rail from Tianjin to Ulaanbaatar or loaded on trucks for land transport to Erlian or Zamyn Uud and then rail transport to Ulaanbaatar. Most container cargos are transported by rail. The railroad network of Mongolia has a total elongation of 1,815 km, of which 1.110 km is the trunk line connecting Russia and China. A separate 239 km line in eastern Mongolia is connected to Russian Railways, and the remaining 477 km consists of branch lines from the trunk line.

[7] JICA "Mongolia Investment Guide" (2013)

② Climatic features

Mongolia is a high altitude country with the capital Ulaanbaatar at about 1,300 m above sea level. The climate is continental with little rainfall throughout the year and low humidity. While annual mean temperature is minus 2.9 degrees in the country as a whole, it varies widely from place to place due to the vastness of the country.[8] Below (Figure 5-3) shows the trends in the mean temperature and precipitation in Ulaanbaatar (1981-2010). The area in Japan showing the closest match to these data for temperature and precipitation is Hokkaido in the northern part of Japan, especially Obihiro City in a dry field farming area.




Source: Created from annual mean values from 1981-2010 from the Japan Meteorological Agency website

Figure 7-(1)-3 Annual Mean Temperature and Precipitation

③ Administrative districts

Mongolia is divided into 21 provinces (“aimungs” in Mongolese and "ken" in Japanese), which are subdivided into counties (“sums” in Mongoloese and "gun" in Japanese) and then into villages (“baghs” in Mongolese and "mura" in Japanese). According to the Statistical Yearbook of Mongolia (National Statistical Office of Mongolia), there are 330 sums and 1,592 baghs in the country. Population density per square kilometer is about 292 persons in the capital of Ulaanbaatar and 1 person in the average of other provinces.

The capital of Ulaanbaatar is the country’s most densely populated area, the center of politics and economy, and where major companies in the country are located. The city contains an airport and railway stations; access to transportation is good. Educational facilities such as universities and medical facilities providing advanced medical care are also concentrated in the capital.

[8] JICA “Mongolia Investment Guide” (2013)

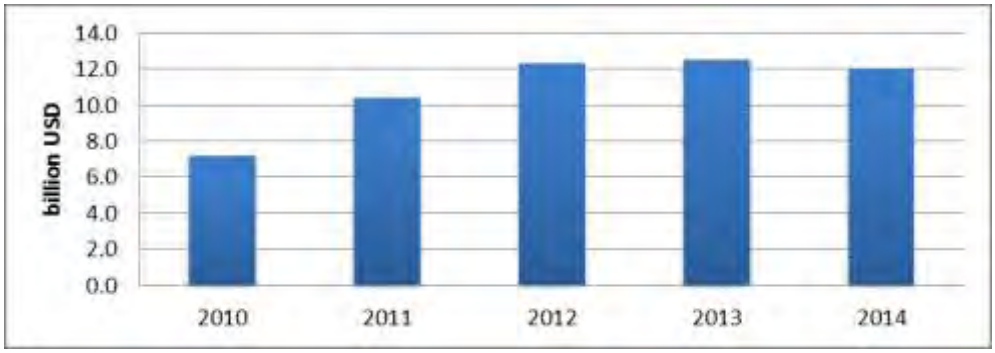

Figure 7-(1)-4 Administrative Divisions of Mongolia

(Source: Prepared based on the Landdatabase of Mongolian Information Center)

④ General condition of Mongolia

1) Gross domestic product (GDP)

Nominal GDP (US dollar basis) grew from 1.33 billion USD in 2000 to 2.93 billion USD in 2005, 7.19 billion USD in 2010, and 12.04 billion USD in 2014. The inflation rate from 2010 to 2014 was 13.7% in average, and the real GDP growth rate on the local currency basis was 16.0%.[9] The nominal GDP (US dollar basis) growth rate from 2010 to 2012 was as high as 15% or more in annual average. After 2012, however, as economic growth stagnated due to a decrease in foreign direct investment (see ④ on the next page), the deceleration of economy of China, shortage of revenues, and other factors, nominal GDP growth rate remained unchanged from 2012 to 2013 and decreased in and after 2014. The preliminary figure for 2015[10] is 12.41 billion USD - a slight increase from the previous year.




Source: World Bank

Figure 7-(1)-5 Change in GDP

[9] World Bank, as of January 2016
[10] World Bank, as of January 2016

2) Industrial features

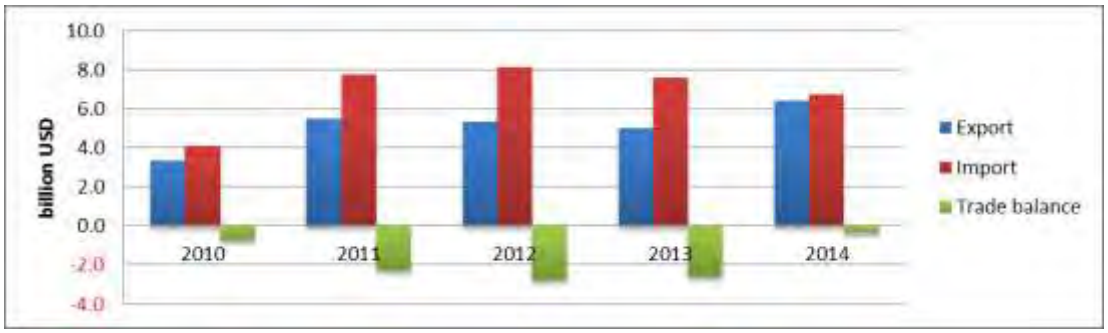
GDP of Mongolia is composed of 16.5% primary industries, 32.6% secondary industries, and 50.9% tertiary industries with larger percentages of service-related industries such as communications, finance, and retailing.[11] Major industries are mining (18%), automobile wholesale, retail, and repair (16%), stock farming (16%), sewing (11%), and real estate (6%).[12]

3) Trade

The balance of trade in recent years shows a perennial deficit (excess of import).[13] Main export items are mineral resources (coal, copper concentrate, fluorite, etc.), crude oil, precious stones and metals, and stock farming products (cashmere, leather), and main import items are mining products, petroleum fuels, automobiles, mechanical equipment and electrical products, foods, and sundry goods. Trade has a structure with the export of mineral resources, crude oil, etc. and the import of raw materials and consumer goods.

The currency of Mongolia is at the lowest level at the present because of the complex factors such as the instability of the government, the low prices of resources, the deceleration of the Chinese economy, and the shortage of foreign exchange reserves, in addition to perennial trade deficit. Furthermore, as the country depends on importation from foreign countries for consumer goods, devaluation of currency has been a cause of aggravation of inflation, and the consumer price index (CPI) recorded a 14.9% rise in July 2014 over the same period of the previous year.

Under these circumstances, Bank of Mongolia set a target inflation rate and raised the bank rate in July 2014 and January 2015 as measures against inflation. As this achieved a decrease in CPI and its stabilization at 1.9% in December 2015 over the same period of the previous year, the concern about inflation was alleviated.[14] On the other hand, to counter the drop of economic activities caused by the raise of the bank rate, the bank rate was cut back in January 2016 as a measure for business stimulation.




Source: World Bank

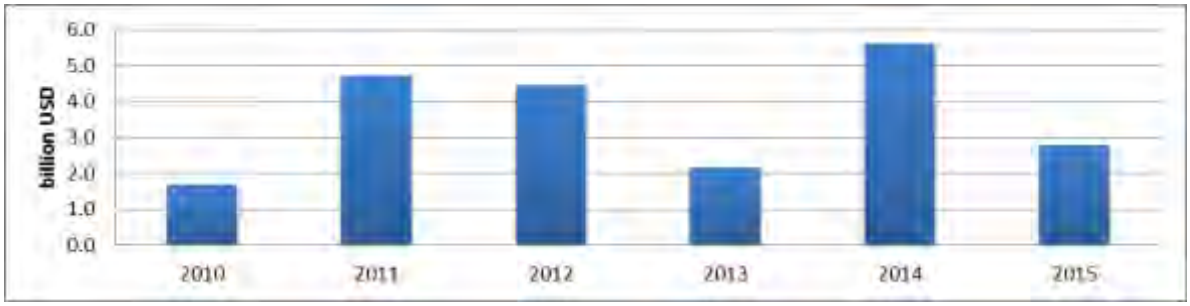
Figure 7-(1)-6 Change in Trade Volume

[11] CIA: World FACTBOOK
[12] National Statistical Office of Mongolia: Statistical Data (2014)
[13] The preliminary figures from Bank of Mongolia shows a positive balance of trade in 2015 due to a decrease in importation.
[14] Bank of Mongolia announced the reduction of the bank rate in January 2016.

4) Foreign direct investment (FDI)

While foreign direct investment in Mongolia doubled in 2011 from the previous year, it fell in 2013 to about one-half the previous year's level. This decrease is considered to have been a result of the restrictions on foreign funds (cap on foreign investment) by the amendment to the Foreign Investment Law (May 2012)[15], as it led to the reworking of the contract for the foreign-funded development project at Oyu Tolgoi mine, one of the largest copper mines in the world, and other foreign companies subsequently hold back on investing. As of 2015, the restrictions of foreign investment have been revoked after a revision of the above amendment to the Foreign Investment Law, and the development of Oyu Tolgoi mine is expected to be resumed.

Since direct foreign investment in Mongolia has so far been made mainly in the mineral resources sector, it has been affected greatly by the changes in the prices of resources in international markets. The cumulative amount of direct investment form Japan since 1990 is 206.93 USD.[16] The major sectors of Japanese investment in Mongolia are commerce, food services, finance, tourism, etc.




Source: World Bank (2010-2013) and Bank of Mongolia (preliminary figures for 2014 and 2015)

Figure 7-(1)-7 Change in the Volume of Foreign Direct Investment

5) Principal overseas investment

The amendment to the Investment Law in November 2013 abolished the cap on foreign investment. Foreign investment in Mongolia is protected by the Constitution, the Foreign Investment Law, other laws and regulations, and international treaties signed by Mongolia. Illegal confiscation of foreign investment in Mongolia is prohibited. Under the principle of no discrimination from domestically-funded enterprises according to laws (the Investment Law, the Rules for Enforcement of the Investment Law, and the Rules on Conclusion of Investment Contracts), safe environment is guaranteed for foreign investors. The Investment Law stipulates that in the event that Mongolia caused losses to foreign investors during an emergency or a

[15] The amendment to the Foreign Investment Restriction Law enforced in May 2012 demanded that advance approval of the government and the national assembly of Mongolia had to be obtained when the share of foreign investment by foreign companies would exceed 49% and the amount of investment would exceed a certain limit in the three sectors of mining, finance, and information communications/media.

[16] As of September 2013, survey by Invest Mongolia Agency.

war, they are compensated for the losses under the same conditions as domestically-funded enterprises.

In addition, according to the announcement of the World Bank,[17] the investment environment of Mongolia in 2014 had improved from the 80th to the 76th place among 189 countries as compared with the previous year, thanks to the measures mentioned above and other improvement.

6) State of economic cooperation between Japan and Mongolia

An EPA[18] was signed between Japan and Mongolia in February 2015. Future expansion of trade and investment between the two countries is expected. The amount of trade between Japan and Mongolia in 2014 is 36.379 billion yen with an excess of export from Japan to Mongolia (34.570 billion yen) over the export from Mongolia to Japan (1.809 billion yen). The items exported from Mongolia to Japan are mineral resources (coal, fluorite), textile products, and general machines, while the items exported from Japan to Mongolia are transportation equipment (automobiles, ships, etc.), general machines, construction and mining machines, and foods.

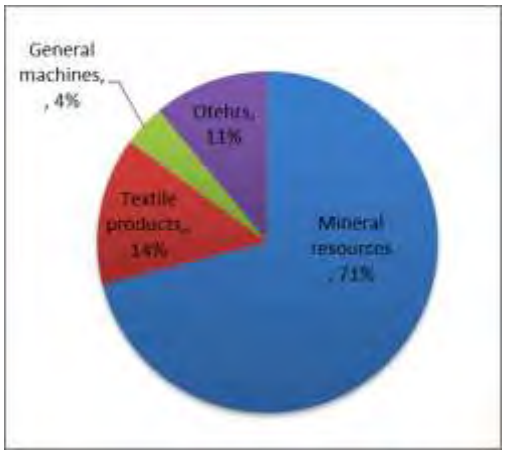



Figure 7-(1)-8 Exports from Mongol to Japan

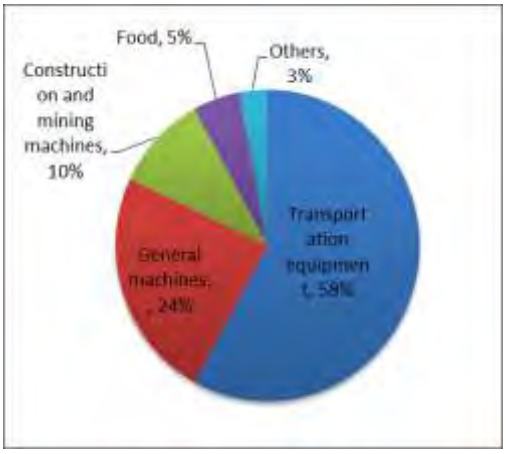



Figure 7-(1)-9 Exports from Japan to Mongolia

Source:Japanese Ministry of Finance Trade Statistics

[17] Investment Climate Assessment, 2014, World Bank

[18] A broad agreement on the Japan-Mongolia EPA negotiation was confirmed at the Japan-Mongolia summit meeting in July 2014, and the heads of the states signed the Japan-Mongolia EPA and the Implementing Agreement for the EPA at the Japan-Mongolia summit meeting in February 2015. The Japan-Mongolia EPA is the first case of EPA/FTA for Mongolia, and is considered an important step toward the further strengthening of the "strategic partnership" featured in the Japan-Mongolia joint communique in November 2010.

7) State of economic cooperation with countries other than Japan

Mongolia borders on China and Russia, which have gigantic markets. The basic diplomatic policy of Mongolia is to maintain well-balanced diplomatic relationships with China and Russia, while avoiding excessive dependence on these neighbor countries and expanding the relationship with a "third neighbor."

In the recent economic collaboration with China, Mongolia signed the joint communique to upgrade the relationship between the countries to a "total strategic partnership" in August 2014, agreeing on developing further cooperation in economy, energy, mining, finance, and other sectors. The export to China, the largest trade partner, represent about 90% of the total amount of export (mostly unprocessed mineral resources and natural resources are exported to China.

With respect to the economic collaboration with Russia, the talks between the presidents of the two countries in September 2014 decided on the actions to promote the trade between the two countries, including the discussions of rule-making for the export of Mongol's agricultural and livestock products, especially meat products, wool, cashmere, textile, Mongolian gers, etc. to Russia under preferential treatment conditions; the conclusion of related treaties supporting trade settlement in Mongolian currency; and a loan of 50-100 billion rubles from Russia to establish a ruble reserve in Mongolia in a conference of ministers of finances. In addition, a memorandum concerning personal exchange was signed, allowing Russian and Mongolian nationals to visit each other's country visa-free for 30 days or less, effective from November 2014.

Subsequently, when Mongolian President Elbegdorj visited Russia in May 2015 to attend the 70th anniversary of the victory in the Great Patriotic War, he met with Russian President Putin once again and discussed future economic exchange and infrastructure development, heralding further strengthening of partnership.

Table 7-(1)-1 Overview of Mongolia (as of the end of February, 2016)

| | | | | | | |
|---|---|---|---|---|---|---|
| General situation | Area | Population *1 | | Capital | | Official language |
| | 1,564,100 $km^2$ | 2.91 million (2014) | | Ulaanbaatar | | Mongolian |
| | Ethnic groups | Language | | Religion | | — |
| | Mongols (95%) | Mongolian, Kazakh | | Tibetan Buddhism | | |
| | Geographical characteristics: Steppes occupy about 80% of the national land area. | | | | | |
| Economic indicators | GDP/person *1 | Economic growth rate *2 | | Import amount *1 | | Export amount *1 |
| | 4,129 USD (2014) | 3.1% (2015, estimated) | | 6.7 billion USD (2014) | | 6.4 billion USD (2014) |
| | Currency | Exchange rate from USD | | — | | — |
| | Tögrög (MNT) | 1 USD = 2,035.69 MNT (Feb. 26, 2016) | | | | |
| | Nominal GDP *1 (billion USD) | 2010 | 2011 | 2012 | 2013 | 2014 |
| | | 7.2 | 10.4 | 12.3 | 12.5 | 12.0 |

| | | | | |
|---|---|---|---|---|
| | Major export items *3 | Mineral resources (coal, copper concentrate, fluorite, etc.), crude oil, precious stones and metals, cattle farming products (cashmere, leather) | | |
| | Major export partner countries *3 | China (87.9%), UK (6.9%), Russia (1.1%), Italy (0.9%), Switzerland (0.5%) | | |
| | Major import items *3 | Mining products, petroleum fuels, automobiles, mechanical equipment and electrical products, foods, sundry goods. | | |
| | Major import partner countries *3 | China (33.8%), Russia (29.6%), Japan (7.0%), South Korea (6.7%), USA (4.4%) | | |
| Relationship with Japan | Export to Japan *4 | Major export items to Japan *4 | Import from Japan *4 | Major import items *4 |
| | About 1.809 billion yen | Mineral resources (coal, fluorite), textile products, general machines | About 34.570 billion yen | Automobiles, general machines, construction and mining machines |
| | Major treaties and agreements | Investment Protection Agreement (signed February 15, 2001), Technical Cooperation Agreement (signed December 4, 2003), Japan-Mongolia Economic Partnership Agreement (February 2015) | | |
| | Number of Japanese companies *5 | 356 Japanese-affiliated companies in Mongolia (37 Japanese companies, 311 local subsidiaries, 8 companies of unknown classification) (2014) | | |
| Investment policy | Prioritized investment sectors | Underground resources, agriculture and stock farming, commerce and restaurants | | |
| | Major government agency | Invest Mongolia Agency | | |
| | Gist of the Investment Law | Foreign investment is possible in all sectors unless it infringes the laws of the country. | | |
| | Preferential treatment of foreign investment (taxation) | Sector-specific tax exemption, preferential tax treatment for reinvestment | | |
| Other | Major physical distribution routes | Japan → (sea) → China → (rail) → Mongolia | | |
| | Financial environment | Bank rate: 13.0% (September 2015)*6, consumer price increase rate: 13.0% (2014)*7 | | |

Sources:
*1: World Bank (2015)
*2: IMF World Economic Outlook (October 2015)
*3: National Statistical Office of Mongolia [NSO] (2014)
*4: Japanese Ministry of Finance Trade Statistics (2014)
*5: Ministry of Foreign Affairs Statistics on the Japanese Nationals Residing Overseas: 2015 Summary
*6: Trading Economics
*7: World Bank (2015)

⑤ Aid policies of Japan to Mongolia

The policy for assistance to Mongolia has been defined by the Ministry of Foreign Affairs and JICA, and assistance to Mongolia was also mentioned in the Global Food Chain strategy of the Ministry of Agriculture, Forestry and Fisheries and the description of cooperation under Japan-Mongolia EPA signed in February 2015.

The country-specific assistance policy of the Ministry of Foreign Affairs, as well as the targets and priority policies of JICA, has a clear mention of sustainable economic growth through human resource development related to mineral resource development, promotion of small and medium-sized enterprises, and support to strengthening of urban functions (infrastructure improvement and management capacity building).

The Ministry of Agriculture, Forestry and Fisheries states that it supports the efforts to increase the value added at all stages from production to processing, distribution, and marketing, aiming at the construction of a food value chain.

The local government of Hokkaido in March 2015 signed "the Memorandum Concerning the Promotion of Economic and Technological Exchange" in food and agriculture sectors and construction and energy sectors with the Ministry of Food and Agriculture and the Ministry of Energy of Mongolia. The aim is to use the superior cold-climate technologies and know-how of Hokkaido to support human resource development in Mongolia, with an eye to agriculture and stock farming and the future expansion of the business of Hokkaido-based companies into Mongolia.

Table 7-(1)-2 Japanese Assistance Policies for Mongolia

| | | |
|---|---|---|
| MOFA Country-specific Policy | The overall goal of the Country-specific Assistance Policy (extracts) | ・To extend the benefit of economic growth to the poor<br>・Sustainable economic growth and balanced growth |
| | The medium goal of the Country-specific Assistance Policy (extracts) | ・Planning and support to implementation of projects concerning mineral resource development, processing, and use; development of human resources with advanced knowledge and techniques<br>・Creation of employment at small, medium-sized, and very small enterprises (especially agriculture and stock farming)<br>・Access to drinking water, strengthening of healthcare and education sectors<br>・Improvement of city planning and management capabilities of Ulaanbaatar City and support to infrastructure construction |
| JICA | Target and priority policy | ・Sustainable development of mineral resources and strengthening of governance<br>・Creation of employment focusing on small, medium-sized, and very small enterprise considering the diversification of industrial structure and improvement of basic social services<br>・Strengthening of the urban functions of Ulaanbaatar City (infrastructure construction and improvement of city planning and management capabilities) |

| | | |
|---|---|---|
| MAFF | Global Food Value Chain Strategy (extracts) and Cooperation Agreement under Japan-Mongolia EPA for Agriculture, Forestry, and Fisheries Products (extracts) | ・A business of importing Japanese rice and polishing and selling it in Mongolia has been launched. Efforts to construct new food value chains such as this are promoted through government-private collaboration using bilateral policy dialogues and other means.<br>・For the development of food and agriculture sectors of Mongolia, the Japanese side supports efforts to increase value added in all stages from the production of foods to processing, distribution, and marketing.<br>・In the production stage, support infection control including the establishment of foot-and-mouth disease-free districts and improvement of wheat productivity and quality.<br>・In the processing stage, support to the facilities for heat treatment of meat.<br>・In the distribution and marketing stages, support to the exhibition of Mongolian products in Japanese markets. |
| Hokkaido | Memorandum (extracts) | ・Promotion of economic and technical exchange between the local government of Hokkaido and relevant government offices of Mongolia concerning food and agriculture sectors and construction and energy sectors<br>・Sharing of information on the actual practice of agriculture and stock farming and the technologies and expertise suitable to cold climate (farm operating methods, machines, etc.)<br>・Promotion of technical cooperation among private companies in Hokkaido and Mongolia |

⑥ Awareness level of Hokkaido companies in regard to international expansion

The survey team interviewed with the administrative bodies and private companies in various parts of Hokkaido that had experience in interaction with Mongolia, and analyzed the trends in the business expansion and development in Mongolia.

1) Condition of Hokkaido companies overseas presence

Municipalities in Hokkaido have accumulated ample experience in technical cooperation in various sectors such as agriculture, construction and civil engineering, urban development, and disaster management using JICA's grass roots technical cooperation projects and the national scheme of Local Government Officials Training Program (LGOTP) since 2004.

Reflecting the rapid economic growth after 2009, many Hokkaido-based companies mainly in construction and civil engineering sectors have expanded business in Mongolia. In particular, Asahikawa City has produced exemplary cases of technical cooperation in urban development of Ulaanbaatar City, the business expansion of a construction company, and other projects by both government and private entities, making use of cold-climate technologies in the construction sector.

Through these activities, Hokkaido and Mongolia have already formed a broad network of government and municipality officials and people from private companies, and administrative bodies in Hokkaido have been working to promote private collaboration, such as the dispatch of economic missions on the themes of agriculture and cold-climate technologies.

Table 7-(1)-3 Past Technical Cooperation between Hokkaido and Mongolia

| Year | Sector | Schemes used | Project | Proposing/implementing organizations |
|---|---|---|---|---|
| FY 2013 | Construction and civil engineering | Grass roots technical cooperation projects (grass roots cooperation support type) / JICA | Project to improve safe work management techniques for construction work in cold districts of Mongolia | Hokkaido Construction Technology Center, Hokkaido Constructors Association |
| FY 2013 | Healthcare and medicine | | Guidance for parenting of children with a high risk of congenital dislocation of the hip | Sapporo City University |
| FY 2010 | Agriculture | | Project for farming leadership training aiming at self-sufficiency in agriculture in Bayankhongor Province, Mongolia | Farming School Kaze No Gakkou |
| FY 2013-2015 | Forestry | Grass roots technical cooperation projects (local government type) / JICA | Project for technical support to afforestation in Ulaanbaatar | Hokkaido / Blue Ulaanbaatar Technology Support Executive Committee |
| FY 2013-2015 | Healthcare and medicine | | Project for nurse training for community health activities for ger districts in Ulaanbaatar City | Kitami City, Hokkaido / Kitami International Technical Cooperation Promotion Conference |
| FY 2004-2005 | Healthcare and medicine | | Regional medical care and hygiene in cold districts | Kitami City, Hokkaido |
| FY 2004 | Regional development | | Transitions in industries and regional promotion | Kitami City, Hokkaido |
| FY 2011-2013 | Urban development | | Project to improve urban development technologies in cold districts | Asahikawa City / Asahikawa City International Exchange Committee |
| FY 2015-2018 | Water resources | Grass roots technical cooperation projects (special quota for local economic vitalization, special quota for local vitalization) / JICA | Cooperation project for improvement of water delivery and distribution in Ulaanbaatar City | Waterworks Bureau of Sapporo City, Hokkaido / Hokkaido International Exchange and Cooperation Center |
| FY 2015-2018 | Agriculture | | Project to improve the income of farmers through improvement of physical distribution of produce and soil improvement | Obihiro City, Hokkaido / Hokkaido Association of Small Business Entrepreneurs Tokachi Branch |
| FY 2014-2016 | Construction and civil engineering | | Project for ensuring the quality of road works in cold districts | Asahikawa City / Asahkawa City International Exchange Committee |
| FY 2013-2015 | Disaster management | | Support project for firefighting technologies in Ulaanbaatar | Fire Department of Sapporo City, Hokkaido / Ulaanbaatar Firefighting Technology Support Project Executive Committee |
| FY 2013-2016 | Agriculture and energy | | Support project for vegetable production in energy-saving facility gardening using renewable energy (underground heat) | Hokkaido / Sorachi Circle-Forming Council for Eco Promotion |
| FY 2013-2016 | Agriculture and energy | | Project for establishment of recycling-type agriculture and environmental conservation using animal manure | Shin-hidaka Town, Hokkaido / Eco Energy Systems Co., Ltd. |
| FY 2013-2016 | Agriculture | | Project for improvement and spread of storage technologies for | Obihiro City / Hokkaido Association of Small |

| | | | | |
|---|---|---|---|---|
| | | | the stable supply of agricultural products | Business Entrepreneurs Tokachi Branch |
| FY 2010-2012 | Urban development | Technical cooperation project / JICA | Project to improve the capabilities to execute urban development | Asahikawa City, Hokkaido |
| FY 2011-2014 | Agriculture | Local government officials training program / Council of Local Authorities for International Relations | Reception of agricultural technology trainees | Takikawa City, Hokkaido |

2) Interest of Hokkaido-Based Companies and Matters of Concern

Since the local government of Hokkaido and the government of Mongolia signed the memorandum concerning the promotion of economic and technological exchange in agriculture and energy sectors in March 2015, the interest of Hokkaido-based companies having technologies and products in these sectors has been increasing. On the other hand, they are concerned about the high country risk due to political and economic situations as a problem in considering business expansion into Mongolia. In fact, economic growth has been weak since the change of administration in 2012, reflecting the factors such as the strengthening of restrictions under the Foreign Investment Law, the sluggishness of mine development, and the crash in the prices of mineral resources such as coal and copper. However, while the development project at Oyu Tolgoi mine, one of the mines with the world's largest deposits of gold and copper, has been in a standstill since October 2013 due to a problem in fund procurement, the government of Mongolia and a major UK-Australian mining company have agreed to restart this project by mid-2016. It is therefore necessary to make trend predictions of Mongolian economic situation and conduct careful market research with medium- and long-term outlook.

【Examples of Business Expansion of Hokkaido-Based Companies into Mongolia】

① Company A seeking differentiation from competitors in product quality

Company A is producing high-quality concrete through complete quality management. Despite relatively high prices, the company is taking many orders for projects requiring quality. On the other hand, there are problems such as the time for the transportation of fresh concrete, the route for transportation, and other strict traffic restrictions from the local police, as well as technical instructions to Mongolian workers to ensure quality.

② Company B taking order in public work projects

The company accepted orders as a subcontractor for road construction. Payment from the prime contractor has been delayed due to the delay in the payment from the government after completion of work. As delay in payment is not rare in Mongolia even in the case of a public work project, it is necessary to be prepared for a long time to the arrival of money. In the event of a failure of payment from the prime contractor, use of an arbitration process involving Japanese lawyers may become necessary.

③ Companies C and D targeting at rich people

Even general consumers in Mongolia own zuslans (vacation homes), where they spend short summers. As there is an increasing demand for the year-round use of zuslans, Company C is constructing and selling zuslans incorporating cold-climate technologies. Although prices are relatively high, these zuslans are well reputed, because they are warm in midwinter when weather is good. Company D is supplying high-class independent houses with prices around 100 million yen in Ulaanbaatar City. While performance in winning contracts was good, as they were put on the market when economy was brisk, payment after contracting is often delayed due to the economic slump in the subsequent period. It will be necessary to take measures such as handing over the keys after the receipt of the full amount and setting a payment-due date for the outstanding amount and charging on arrears.

④ Company E expanding business in different field

Company E, operating as a construction company in Hokkaido, has established a local subsidiary in Mongolia in collaboration with a Japanese-affiliated company to produce potatoes, strawberries, etc. and is doing business with local companies, which deal in goods including Japanese food materials. The company had business talks with about 180 Mongolian companies until the present system is established, and found that most of them were interested in obtaining funds, realizing that finding good partners was a difficult task.

| | | |
|---|---|---|
|  |  |  |
| Houses for use as zuslans incorporating the environmental technologies of Hokkaido | High-class independent houses constructed and sold in Ulaanbaatar City | A strawberry farm operated as a joint business with a local company. The produce are sold on the everyday product shelves in local supermarkets. |

⑦ Results of on-site survey

1) Survey targets incorporating local needs

Based on (4) Technologies and Know-how in Hokkaido in "3. The Survey Implementation Policy," the study team has outlined characteristics and general situations of Mongolia in (1) and (2) in this Chapter, further reviewing (3) Assistance Policy of Japan as described therein. As a result of surveying (4) Awareness of companies in Hokkaido, moreover, the following three needs have been identified for which technologies and know-how in Hokkaido will be able to meet.

- Modernization and promotion of such principle industries in Mongolia as agriculture and stock farming in which Hokkaido has applicable technologies and know-how.
- Services related to housing construction suitable for climatic features in cold areas.
- Heating system development for small-scale communities suitable for cold climate and designed to mitigate the environmental damage.

Furthermore, some companies made proposals related to the above, offered in a questionnaire in the seminar in Japan on November 25, 2015. Accordingly, the study team decided to carry out a local survey focusing on agriculture and stock farming as well as the living environment and energy.

2) Contention of on-site survey results

Foreign investments in Mongolia has decreased because of more strict regulations related to a foreign investment law applied after a change of government in 2012. Further worsened by a sharp price drop of mineral resources, the country's economy has been stagnating. Therefore, the government of Mongolia has been committed to diversify its industries to reduce dependence on natural resources.

Also, the country has urban problems including air and soil pollution, traffic congestion, lack of wastewater treatment, due to overconcentration in Ulaanbaatar where 1.36 million people reside out of the total population of 2.91 million. There is a need in creating industries in local cities to mitigate such unipolar urban concentration of population and promote industrial diversification. Another issue is improvement of living environments in a ger district that has been receiving an inflow of people into Ulaanbaatar, resulting in the said population concentration.

Notably, moreover, Mongolia has rich human resources of those people who have learned Japanese and Japanese technologies and business through their experiences of studying in Japan or completing a program at the JICA Mongolia-Japan Center. There are also many young people who have proficiency in Japanese, with understanding of Japanese corporate culture. However, given the fact that many of the students, though having learned in Japan, cannot obtain their jobs, Japanese companies may contact with them to use such potential human resources when starting their business in Mongolia in the future.

3) Issues for development and needs in Mongolia

Mongolia has the ranging needs in agriculture and stock farming, medical care and energy. Among these areas, potentially promising sectors for companies in Hokkaido to start their business are construction, housing, renewable energy, and agriculture and stock farming. However, the construction sector is currently in recession, and therefore few companies may seek for expanding joint business. Even if the business is started in Mongolia now, it is more likely to have an inventory risk, unable to recover the invested capital in a short term.

a) Agriculture and stock farming

Interviews in the local survey revealed that Mongolia has growing needs currently for changing pasturing to intensive agriculture and stock farming, particularly in the over-imported milk industry, so that it can locally produce agricultural products that depend on imports. The underlying factors are various problems in each stage from production, distribution and sales, specifically caused by an inadequate feed source in winter, underdeveloped milk-collection and transportation systems (including road infrastructure), and the quality control issues. Also, after transition to a market economy, the grassland has degraded by effects of desertification due to global warming and a sharp increase in livestock including sheep and goats raised to produce wool and cashmere (an increase of about 24 million cattle in 2000 to 70 million in 2015). Furthermore, the country has a natural disaster risk of a zud (cold-weather and snow damage) that occurs once in several years, leading to serious needs for supplying a feed source in winter. Under these circumstances, Hokkaido's wide variety of technologies and experiences developed on its rich dairy farming practices will be able to meet the local needs in Mongolia. For instance, such know-how includes intensive agriculture and stock farming using a cattle shed that can accommodate a large number of cattle and control their quality and health, and allocating grassland to cultivate feed grasses. Combined with providing the know-how, a holistic package proposing related products may be able to address problems in agriculture and stock farming in Mongolia.

In dry field farming, moreover, while large-scale farmers are using large agricultural Machinery more broadly than before, many of the small- and medium-scale farmers have been slow to apply modern automated agricultural technologies to production stages including cultivation and quality control. Notably, the local interview found that supply of potato was unstable, which relies on the import during the winter, although an annual volume of production in Mongolia was 160,000 tons[19] in 2013 (compared with an annual volume of about 1.9 million tons[20] produced in 2014 in Hokkaido). The major factors are the lack of storage facilities and manual harvest practice that depends on manpower. Another is an increased crop waste per unit area, because efficiency-based large farming machines used to gain more crop yields per

[19] National statistics of Mongolia (2014)
[20] Crop statistics of MAFF (February 2015) http://www.e-stat.go.jp/SG1/estat/List.do?lid=000001129350

plant may in fact cause untimely farming operations and harvest. Therefore, post-harvest crop loss resulting from bruising and damage should be reduced, and it is desirable that small- and medium-sized durable farming machinery be supplied by companies in Hokkaido. Also, the local survey identified the needs for storage facilities suitable in cold areas that enable quality control in production processes. Other needs include technologies of processing agricultural crops including potato chips to increase more profits in local cities. In the future, the intended market will be expanded not only locally, but also internationally, and therefore it will be beneficial to offer training on technical analysis required to satisfy HACCP[21] and GAP[22] related to quality, and safety and hygiene control and to obtain certification processes in Japan.

b) Living environment and energy

Electric power and heat in the capital city, Ulaanbaatar, are supplied by existing coal-fueled Thermal Power Plants No. 2 through No. 4, Salkhit Wind Farm (supplying only electric power) and Amgalan Power Plant Boiler. As the population concentration in the capital has made the local power supply unstable, the project of the fifth coal-fueled power plant is being constructed, which is the fourth plant in the city at present. In terms of heating, apartment houses and office building in central Ulaanbaatar are covered by central heating systems connected from boilers in the power plants, leading to high energy losses in the city as a whole. On the other hand, basic infrastructure is not developed other than electricity in a ger (portable housing) district in the suburb of central Ulaanbaatar where 60% of the city population is said to be residing. Thus, the each dwelling burns coals and firewood with low-quality heating appliance, leading to one of the causes for air pollution.

Given these circumstances, a local interview on the needs of renewable energy found that the Policy Concerning Energy for 2015-2030[23] of the Mongolian government set the step-wise target rate of renewable energy consumption to achieve 7.62% in 2014, 20% in 2020, and up to 30% in 2030. To implement this policy, the Mongolian government intends to support generation of wind, solar and water power, using natural land resources endowed in the country. The business needs are thus likely to grow in this sector.

In addition, under the Master Plan for Waste Management in Ulaanbaatar for 2020 (not open to the public) prepared by the city, the local interview found out an ecology park project planned for five years from 2015 which will construct an integrated waste treatment plant. Currently, separation of wastes is not

[21] Hazard Analysis and Critical Control Point (HACCAP): International standards for food hygiene control provided by the Codex Committee which is jointly established by Food and Agriculture Organization of the United Nations (FAO) and World Health Organization. These are hygiene control procedures to ensure safety of food products by continuously monitoring key control points to be incorporated in relevant measures taken in all kinds of production and processing stages, developed on hazard analysis of potential microbe pollutants therein.

[22] Good Agriculture Practices (GAP): Appropriate agricultural practices codified by FAO. These are activities improved sustainably by which each step of farming practices is appropriated pursued, recorded, inspected and evaluated.

[23] Government of Mongolia: The Policy Concerning Energy (2015-2030)
（http://www.legalinfo.mn/annex/details/6812?lawid=11130）

required, except for some recyclable wastes. The city is considering resource recycling and energy use currently underdeveloped, by which it decides on the type of wastes to be separated and the methods of separation before the said waste treatment plan is commissioned. Accordingly, the survey revealed the possibility of using biomass energy through generating biogas with food residue.

4) Issues for promoting cooperation with private companies

In Mongolia where inter-city disparity is substantial, Hokkaido-based technologies applicable to cold areas, and agriculture and stock farming will contribute to create local industries there. Nonetheless, information on Mongolian companies is not much available for companies in Hokkaido, while also the former have a problem in credit guarantee. The Mongolian companies likewise have little information about the companies in Hokkaido.

Therefore, many Mongolian companies are seeking for a partnership with Japanese counterparts. Lasting partnerships between Mongolia and Hokkaido will be beneficial to expand the markets in the former to reduce import dependence and develop small- and medium-sized companies. For instance, they include a bilateral partnership between a chamber of commerce and economic associations to trade products and services, a municipal cooperation for technical support and institutional development, and creation of a knowledge infrastructure to exchange information (i.e. Mongolian and Japanese corporate profiles) sought by companies in both countries.

5) Responses at seminar

a) Seminar and questionnaire procedures

Based on the needs in Mongolia identified in a series of surveys made so far, a local seminar was organized for the purpose of publicizing technologies and products of companies in Hokkaido. To obtain further information, a questionnaire survey was conducted after the seminar. The results are provided as below, and 24 out of 35 respondents (68.6%) indicated the event was "very satisfactory" and "satisfactory," when asked to what extent they were satisfied with it. None responded "Unsatisfactory."

Table 7-(1)-4 Overview of the seminar and questionnaire survey

| | |
|---|---|
| Date and time of seminar | Friday, January 22, 2016, 14:00-17:30 |
| Place of seminar | Blue Sky Tower 3F TOPAZ HALL / Ulaanbaatar, Mongolia |
| Survey method | Distribution and collection of questionnaires for participants in the seminar (after closing the event) |
| Questionnaire survey targets | Organizations including government agencies, companies, and NGOs in Mongolia: 68 participants |
| No. of responses | 37, 54.4%（No. of responses received÷No. of targets×100） |
| Affiliation of respondent | 2 respondent from the Mongolian government agency, 21 from companies, 8 from NGOs and others, 1 non-affiliated person, 5 unknown |

b) Purpose of participating in the seminar (multiple answers)

The largest number of respondents indicated that they were “considering business with the Japanese companies (in Hokkaido) in the future”, followed by “interested in the Japanese companies participating in this seminar.”

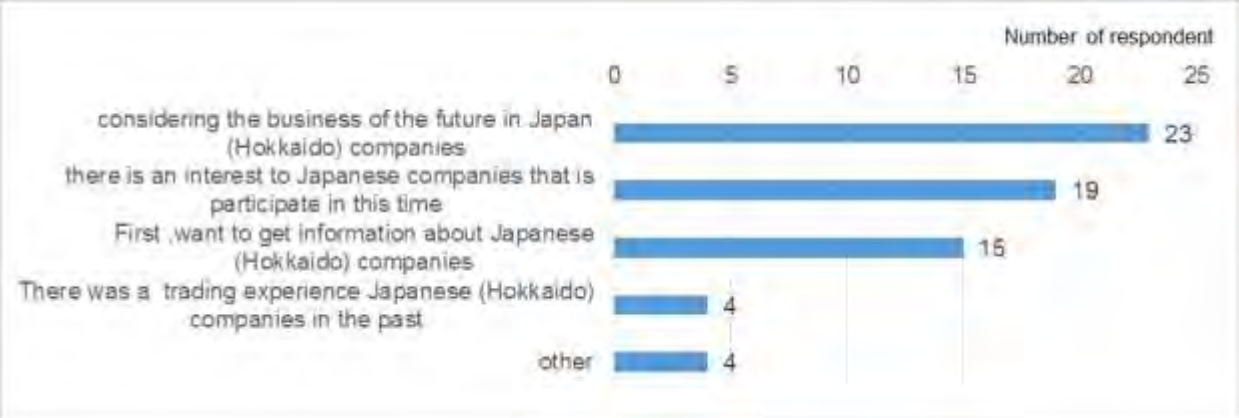



Figure 7-(1)-10 Purpose of Participation in the Seminar

c) Industrial sectors of interests (multiple answers)

The largest number of respondents indicated they were interested in “agriculture and stock farming”, followed by “food and food processing,” “machinery,” and “environment and energy” in order.

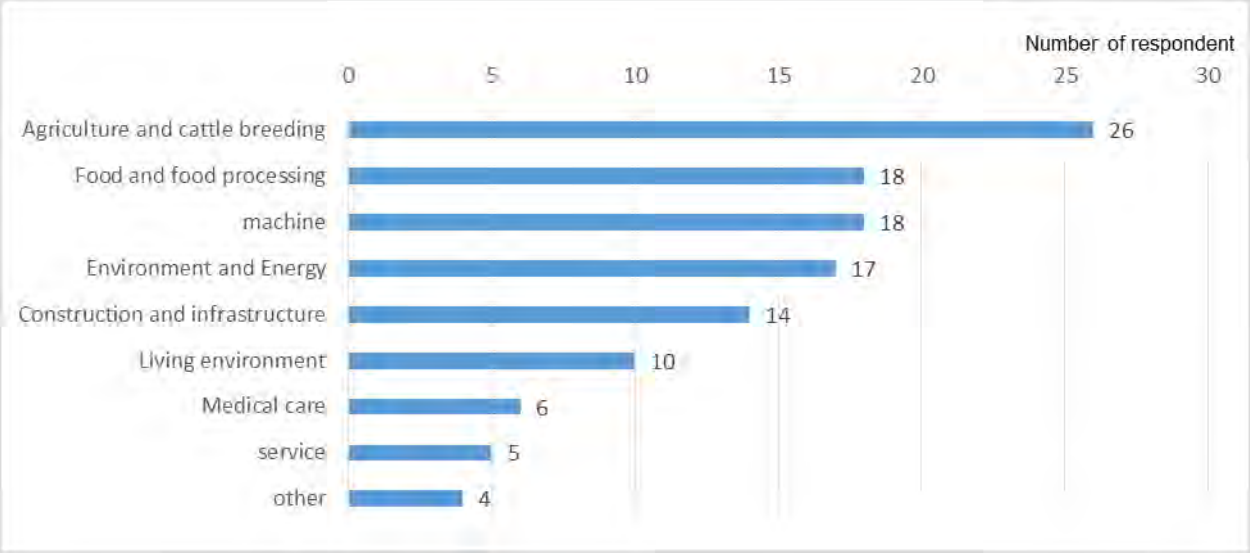



Table 7-(1)-11 Industrial Sectors of Interests

The specific interests of each sector are as follows.

Table 7-(1)-5 Specific Interests

| | |
|---|---|
| Agriculture and cattle breeding | Small grassland mowers, irrigation systems, pest control machines (for spraying agricultural chemical liquid and powder, potato harvesting machines, small agricultural Machinery |
| Food and food processing | — |
| Construction and infrastructure | Machinery for assessing earthquake resistance, food storage facilities, technologies of melting snow and ice on roads |
| Environment and energy | Study and research on environment-friendly energy, biomass-bases technology, use of geothermal heat, gasification of biomass |
| Living environment | geothermal heating technologies for housing |
| Machinery | — |
| Medical care | — |
| Services | Real estate, finance, rental housing programs, entertainment, health-related facilities |
| Other | Cold-area technology in the construction sector, wrapping and packaging technologies |

d) Obstacles for conducting business with Japanese companies (multiple answers)

The largest number of respondents indicated “lack of information,” followed by cost-related problems.

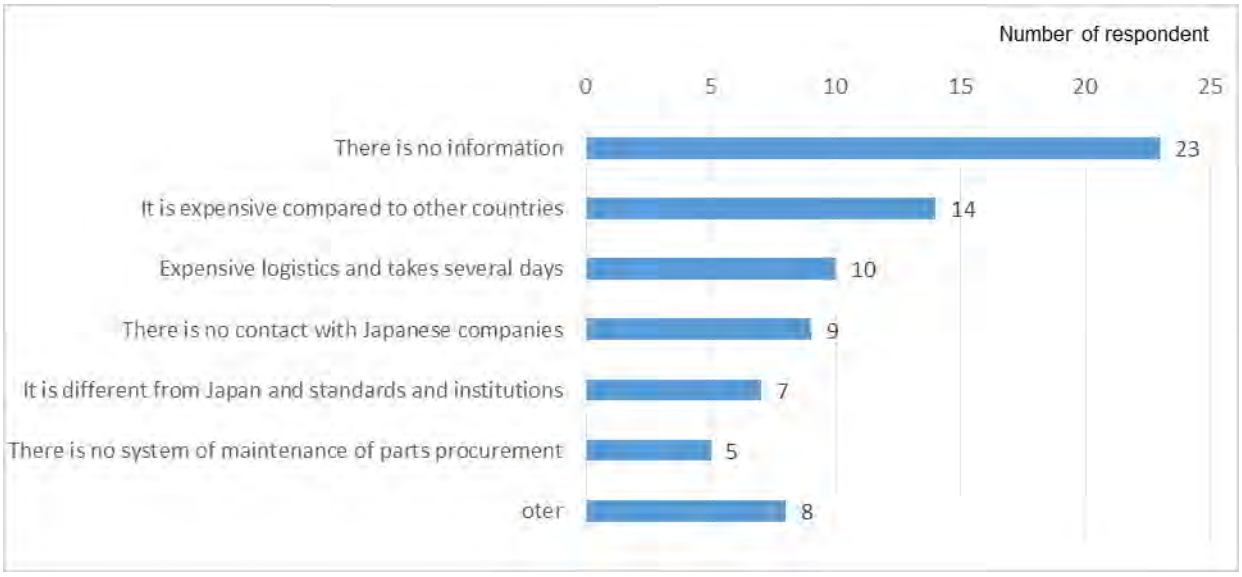



Figure 7-(1)-12 Problems in Starting Business with Japanese Companies

Many of the responses to “Other” indicated challenges related to a language and culture, including such comments pointing out “an agent who can explain language and cultural differences,” “knowledge about a foreign language,” “differences in the business culture,” “a language problem,” “an interpreter of Japanese is unavailable (to exchange e-mail) locally (Bulgan Province),” and “it is desirable the website of Japanese industrial companies is provided in English.”

e) Prospects for business with Japanese companies

Corresponding to answers to indicate “challenges to engage in business with Japanese companies,” many respondents said they “need a partner company to begin with,” and “need to obtain detailed information.” Specific information needed in Mongolia is the “energy sector,” “construction and road transport,” “financial products” and “tourism and agriculture.”

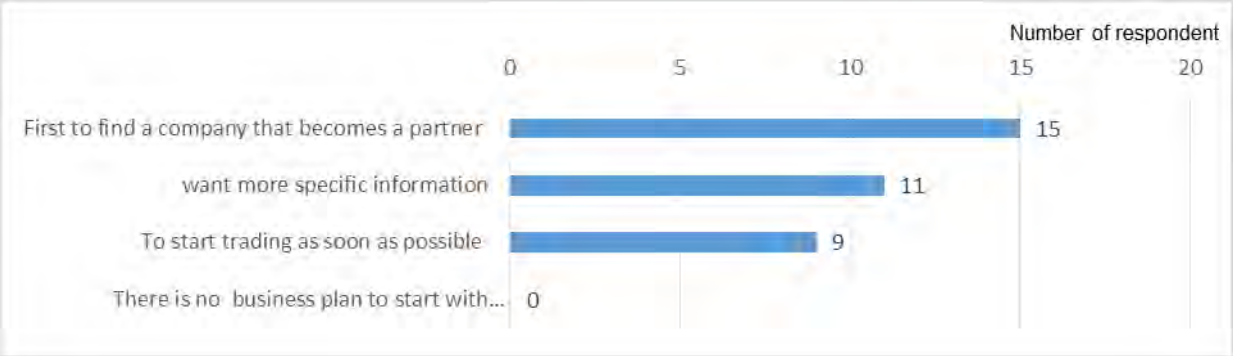



Figure 7-(1)-13 Future Business with Japanese Companies

⑧ Future planning

In many cases, companies in Hokkaido, particularly in the construction sector, have started their business in Mongolia. However, a few have succeeded due to the stagnant local economy in recent years. According to interviews with companies in Hokkaido to ask about their potential business expansion in Mongolia, many of them not yet operating there have a common notion describing the country with a grassy plain and nomad people. They also indicate that they do not have enough human resources to start the overseas business. Only a few companies are considering to expand their business in Mongolia.

Large-sized Mongolian companies, on the other hand, have already established their own channels for import, production and marketing. If they are interested in at least one technology of companies in Hokkaido, such as agricultural Machinery and a heating facility, the business with a Japanese partner will be negotiated smoothly, or the risk of non-payment is likely to decrease. However, because small- and medium-sized companies in Mongolia are less experienced than large-sized counterparts in many aspects ranging from competencies to financial management, they desire to obtain more cooperation from Japanese companies (i.e. establishing a joint corporation and investments in plants and facilities). Supporting such small- and medium-sized companies has thus significance. Rather than providing a single technology, a holistic approach of Japanese companies will contribute to address development challenges in Mongolia, when combined with training of operational management to improve productive capacity and control quality and hygiene.

For companies in Hokkaido to start their business in Mongolia, they must research before selecting the target area about its geographic conditions, business environments, and rival companies entering the intended market. This requires the companies in Hokkaido to have market prospects on potential demand volume and estimated prices, while also incorporating the following viewpoints (Table 7-(1)-6). Drawing on these efforts, it is desirable to strategically gain competitive advantages not only by bringing a specific technology or product into the market, but also lowering the local prices as much as possible and marketing attractive functions of such technology or product. On the other hand, Mongolia may need to practice or become aware of items listed below (Table 7-(1)-7) so as to facilitate valuable interactions between the country and Hokkaido.

Table 7-(1)-6 Viewpoints Required for Companies in Hokkaido

| |
|---|
| i. Support local production of agricultural products and food currently imported to Mongolia. |
| ii. Export products made in Mongolia with Japanese technologies to developed countries including Japan |
| iii. Enter the construction and infrastructure sector by subcontracting projects of major Japanese companies. |
| iv. Sell technologies and products to major Mongolian companies and high-income customers who have low risk of non-payment. |
| v. Maintain no less quality and prices than products (agricultural Machinery, construction materials and housing installation) and services in other countries and highlight competitive edge, for instance, that small and medium agricultural Machinery have advanced performance (reduced failure rate) and durability that enable timely operations and harvesting of crops, tailored to the needs in Mongolia. |

| |
|---|
| vi. Develop the integrated business encompassing the markets in other industries, not only providing a technology separately such as equipment featured by a harvesting system (i.e. creating a food value chain in the agricultural sector) |
| vii. Improve presentation to make visual impact for the audience, rather than merely using words and numbers (a live performance, sample display, and demonstration-based promotion are effective, which is gradually practiced in exhibitions in Mongolia). |

Table 7-(1)-7 Challenges for Mongolia

| |
|---|
| i. Enhance credibility of small- and medium-sized companies, develop guarantee systems as well as financial and lease systems. |
| ii. Foster corporate culture to understand contract practices and legal compliance. |
| iii. Develop sectoral partnerships and pursue the quality improvement. |
| iv. Foster a mindset at least to pay back the money borrowed by the due date. |
| v. Prepare a feasible project plan and pursue works needed including risk assessment before initiating the project. |
| vi. Engage in branding Mongolian products for foreign countries, which satisfy hygiene standards and quality requirements |
| vii. Develop distribution networks in local cities |

1) Case of agricultural machinery

As its circumstances and needs described in ⑦-3) Issues for development and needs in Mongolia, Mongolia needs stable supply of a feed source in winter to cope with degrading grassland under the influence of a sharp increase in livestock and desertification in recent years. According to an interview with nomads in the country asking about their demand for grasses to pasture in winter, they feed only in an urgent situation when their cattle are sick or have malnutrition. The price of bale in Mongolia is 8,000 MNT (about 500 yen) per 25 kg, which is higher than other countries (four times Southeast Asia). This is presumably because cattle normally graze over the land in Mongolia, requiring no bale for feed source. Thus supply of bales is essentially low, while also grassland to make bales has been underdeveloped. On the other hand, demand of bales sharply is likely to increase when a zud occurs. Demand for grasses will grow in the future, given that the number of cattle and a suitable grazing land are decreasing.

Furthermore, potatoes, which is a principle product in Mongolia, have unstable supply due to lack of storage facilities, resulting in reliance on import in the winter time. Small- and medium-sized farmers have been slow in applying modern and automated farming technologies, harvesting some crops manually. This has led to inefficiency and heavy labor.

Given these problems in agriculture and stock farming in Mongolia, Hokkaido manufactures suitable agricultural Machinery used for the same kinds of crops produced locally. Major types of agricultural Machinery made by Hokkaido-based manufacturers are small- and medium-sized models, which enable timely operations and harvest to ensure crop quality. They are also featured by easy maintenance and high durability. Therefore, agricultural Machinery on grasses and potatoes have a potential business opportunity

in Mongolia, combined with maintenance training and services, intensive agriculture and stock farming systems developed in Hokkaido, and farming techniques, which should constitute an integrated package.

In addressing challenges associated with business expansion of Hokkaido-based companies, many small- and medium-scale farmers in Mongolia have a financial difficulty in purchasing agricultural Machinery, whereas incorporated large-scale farms have a purchasing capacity. Therefore, they must identify specific types of agricultural Machinery required by farmers to benchmark viable price terms. As the first step to know about Japanese quality of products at first hand, it is effective to demonstrate them in Mongolia, while at the same time organizing groups of small- and medium-scale farmers and establishing marketing channels.

As a result of market entries of companies in Hokkaido, an integrated package of technologies including agricultural Machinery, systems and maintenance will increase efficiency and productivity which are enabled by timely operations and harvest suitable for the harvesting season, and reduced heavy labor of farmers as well as waste loss of crops harvested per land unit. For nomads, furthermore, inadequate grazing land and winter feed source, and a problem associated with a zud (cold-weather damage and snow damage) will be overcome by which feeding grasses are produced on demarcated grassland, in addition to their regular practices of grazing, and Mongolian-style intensive agriculture and stock farming, established.

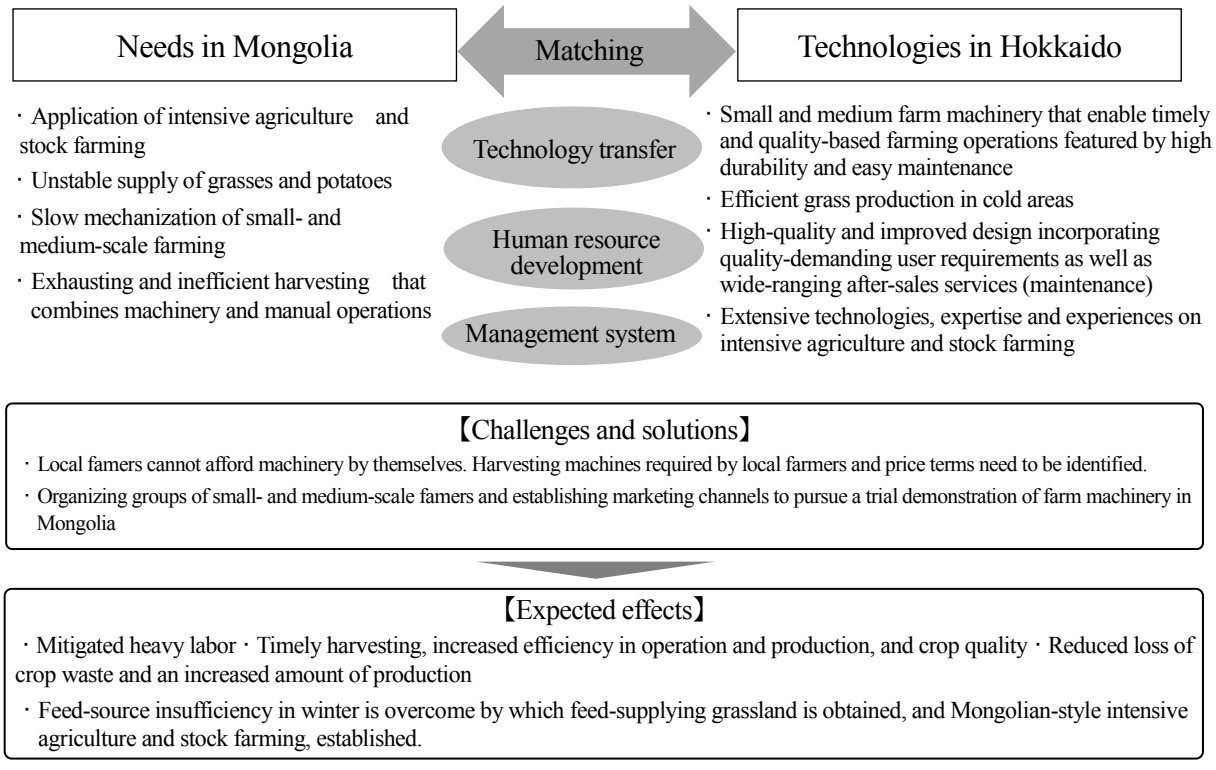



Figure 7-(1)-14 Business Development Plan (Agricultural Machinery)

2) Case of renewable energy

As its circumstances and needs described in ⑦-3) Issues for development and needs in Mongolia, Mongolia has been trying to increase the proportion of renewable energy consumption. Primarily focusing on wind, solar and water power, the Policy concerning Energy for 2015-2030[24] prepared by the Mongolian government targets the proportion of renewable energy consumption to be increased up to 30% by 2030 as a part of environmental protection efforts to reduce air pollution and the greenhouse effect gas (hereinafter referred to as GHG).

Also, Mongolia is trying to enforce separation of wastes and practice intensive agriculture and stock farming. When fully engaged by citizens and waste system operators, raw wastes and livestock excrement may be used for biomass, where companies in Hokkaido may be able to start the business in Mongolia.

Hokkaido has rich natural resources as in Mongolia, including wind and solar power, as well as biomass resources in agriculture and forestry. In particular, Hokkaido is a first-rated region in Japan for its potentials for the use of renewable energy generated from wind, solar and geothermal power[25]. Hokkaido has know-how and technologies related to highly efficient energy-saving architecture incorporating wide-ranging expertise of geothermal heating and ventilation systems, which is applied to construction of large-scale facilities such as apartments, office buildings and schools. Also, Hokkaido has technical expertise on and experiences in designs and construction of heat supply and power generation plants for the biomass gasification using raw wastes and livestock excrement.

In addressing challenges associated with business expansion of Hokkaido-based companies, the construction costs to adopt energy-saving technologies will be high for the initial investment, though the running costs lowered.

The use of biomass entails collection of heat sources such as raw wastes and livestock excrement. The feasibility must be explored under a public-private partnership. In commissioning a trial biomass plant, consulting services will be essential to support developing a collection system of raw wastes and livestock excrement and a legal framework to achieve environmental targets

As a result of market entries of companies in Hokkaido, the proportion of renewable energy consumption will increase. Also, replacing coal firing with renewable energy for part of heat supply in Ulaanbaatar currently using central heating systems will reduce air pollution and GHG resulting from smoke exhausted from power generation plants. Establishing a collection system of raw wastes and livestock excrement will diversify the industry in which employment opportunities will be created.

[24] Government of Mongolia: The Policy Concerning Energy (2015-2030) (http://www.legalinfo.mn/annex/details/6812?lawid=11130)

[25] Survey for Potential Renewable Energy Application, Ministry of Environment, 2010

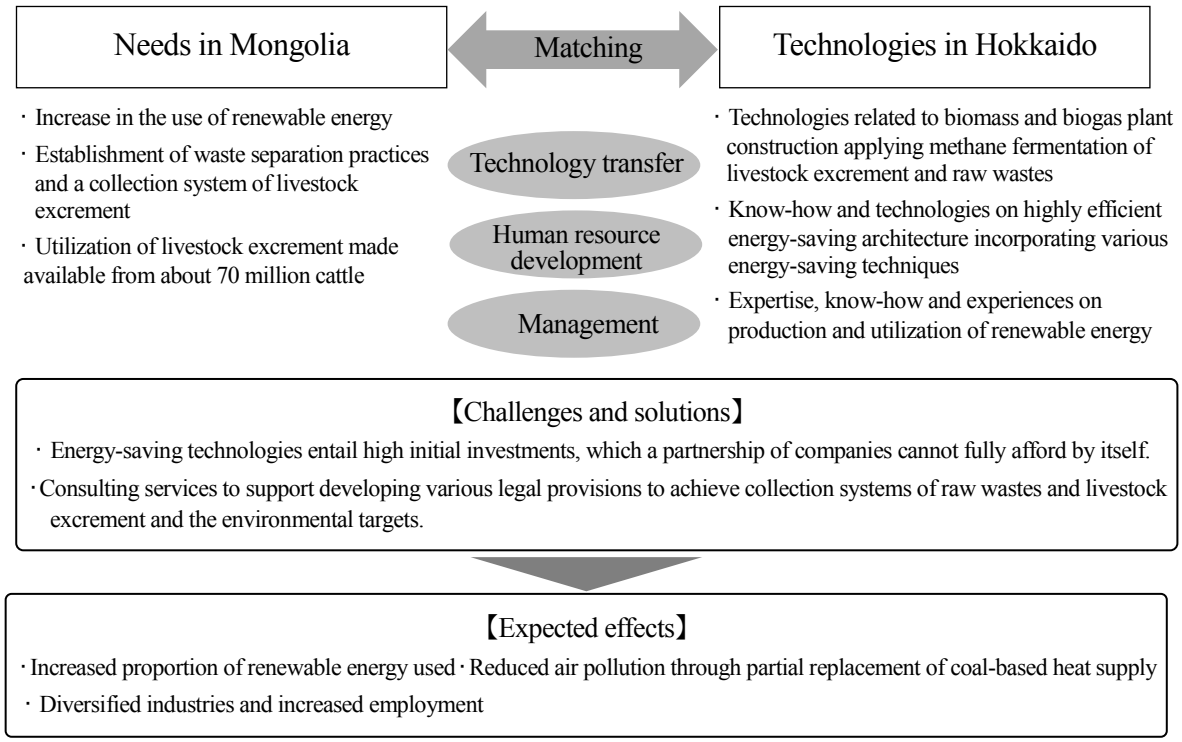



Figure 7-(1)-15 Business Development Plan (Renewable energy)

3) Case of heating equipment

As its circumstances and needs described in ⑦-3) Issues for development and needs in Mongolia, Mongolia has the needs for conserving the amount of heat consumption. For heat supply in Ulaanbaatar currently, central heating systems circulate hot water to households and offices which obtain heat by dedicated boilers as well as waste water produced in coal-fired power generation plants. To note, the installed heating equipment is mostly uncontrollable heating panels.

In Hokkaido located in a cold area, coal-firing heating had been used until 1960s as currently in Mongolia, causing air pollution problems, which has been solved by change of heating sources to kerosene and gas. At present, Hokkaido promotes research and development on how heating efficiency can be increased to help mitigate environmental loads. Given this background, a solution to address development challenges in Mongolia is establishment of a valve control system and controlled heating panels provided with good quality and functionality. It is featured by temperature control that minimizes the amount of heat consumption, allowing an increased heating efficiency.

In addressing challenges associated with business expansion of Hokkaido-based companies, it should be noted Mongolia has already adopted low-priced heating panels made in Turkey and China, and that local consumers are not much conscious about saving their heating costs because they are charged per square meter. Therefore, a product should be differentiated by other than the price, for instance, the heating efficiency, quality and functions.

According to a local interview, the Mongolian government stipulates energy saving by increasing heating

efficiency in Article 12 of the Energy Conservation Law (Draft)[26] and Article 6 of the Law Concerning the Air[27]. Thus, it will be effective to support developing legal provisions relating to heating and thermal insulation standards, while considering feasibility of replacing existing uncontrollable panels.

As a result of market entries of companies in Hokkaido, installed controllable heating panels will save energy loss in urban areas as a whole, protecting the environment by reducing air pollution and GHG.

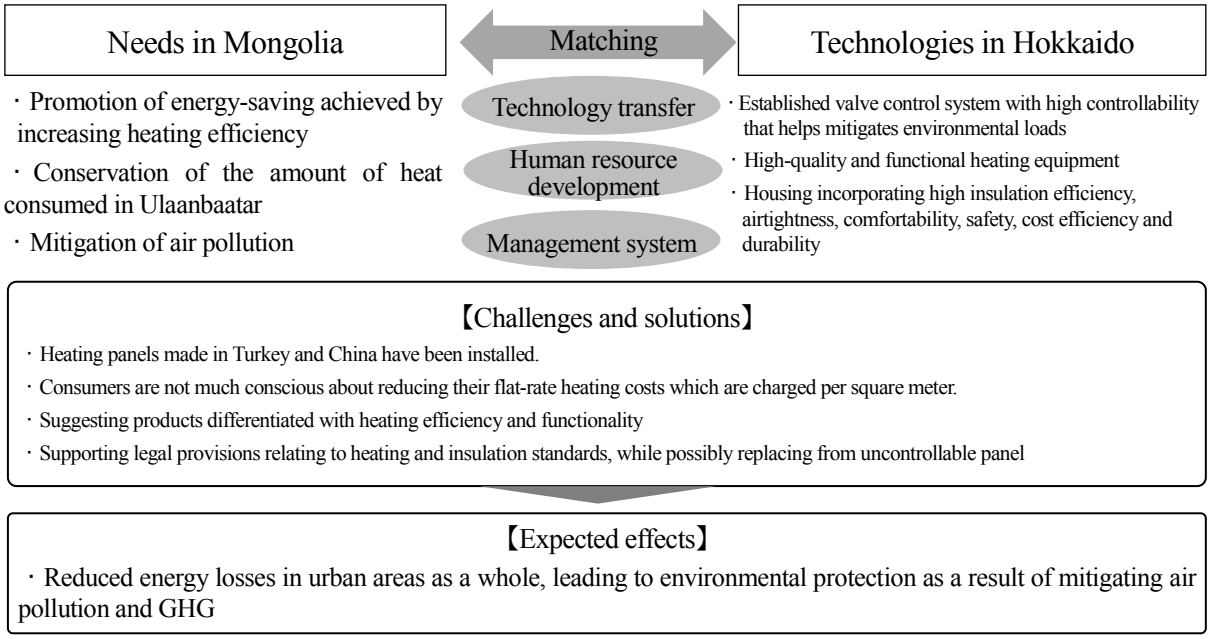



Figure 7-(1)-16 Business Development Plan (Heating equipment)

[26] Mongolia Legal Information Database "The Energy Conservation Law (Draft)" (http://www.legalinfo.mn/law/details/11488?lawid=11488)

・Paragraph 1 of Article 12 of the Energy Conservation Law (Draft): The incentives for the production and importation of energy-saving construction, machines, equipment, goods, and materials, as well as the citizens and enterprises fulfilling the obligations to increase energy efficiency, shall be coordinated according to the provisions of Article 9, Paragraph 1 of this law and of Article 6, Item 1, Number 11 of the Law Concerning Air.

・Paragraph 1 of Article 9., Ibid.: The Energy-saving Committee executes the following rights.

・Paragraph 1.9f (e) of Article 9., Ibid.: Provision that grants preferential treatment to citizens and companies that achieved increased production and imports as well as energy efficiency and conservation for energy-saving construction, machinery, equipment, commodities and materials.

[27] Mongolia Legal Information Database "The Law Concerning the Air" （http://www.legalinfo.mn/law/details/8669）

・Item 11 of Paragraph 1 of Article 6 under the Law Concerning the Air: As provided under Item 6 and 8 of Paragraph 1 of Article 6 of this Law, preferential treatment shall be approved.

・Item 11 of Paragraph 1 of Article 6., Ibid.: Preferential treatment shall be determined and supported with the government budget for a price of electric energy supplied to households in a ger district where the air quality shall be improved to satisfy either terms or standards.

・Item 8 of Paragraph 8 of Article 6., Ibid.: Preferential treatment shall be granted to citizens and companies operating in the electricity and energy sectors in their efforts to reduce air pollution and increase insulation efficiency.

(2) The Kyrgyz Republic

① Geographical features

The Kyrgyz Republic is a landlocked country that shares borders with Kazakhstan to the north, China to the east, Tajikistan to the south and Uzbekistan to the west. With mountains over 1,000 m tall accounting for nearly 93% of its territory, the country is blessed with ample water resources. The elevation of the capital of Bishkek is roughly 800 m.

The main commercial route from Japan passes through China or the far eastern region of Russia, and then through Almaty, Kazakhstan to Bishkek. Either route requires 30 days to traverse.

*Source: THE KEIHIN CO., LTD. website


Figure 7-(2)-1 Location of the Kyrgyz Republic

Source:Ministry of Foreign Affairs

② Climatic features

The climate is continental, and the monthly average temperature in 2015 in the capital of Bishkek reached a high of 27.8ºC in July and a low of –2.6ºC in February (Weather and climate data: www.pogodaiklimat.ru). As a landlocked country, the climate is extremely dry, with low humidity. Bishkek is located at 43ºN, which is the same latitude as Sapporo, Japan, and their climates are essentially similar except for a period of time during summers.

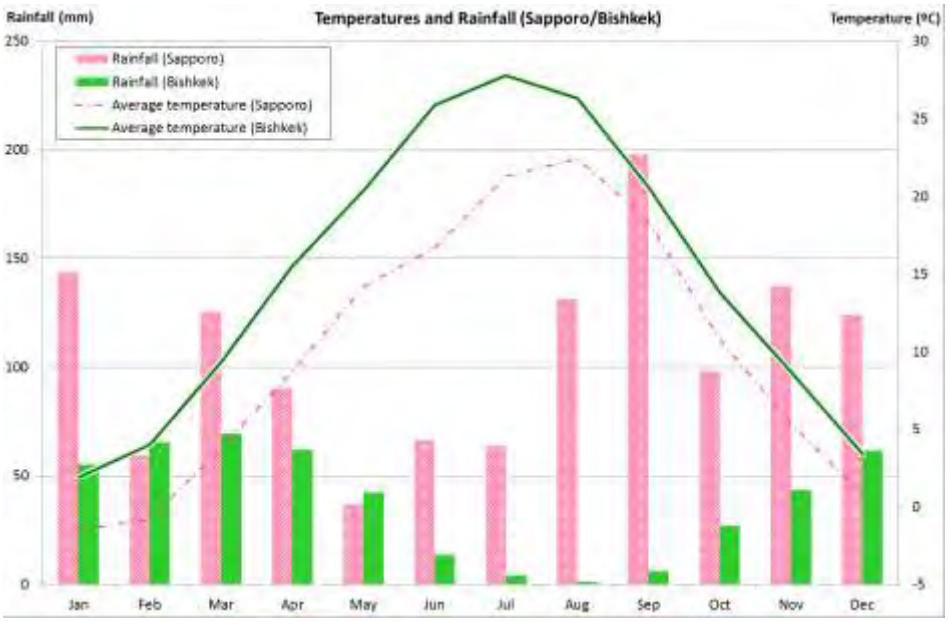



Figure 7-(2)-2　Temperatures and Rainfall in Bishkek

*Created by HIT from weather and climate data from www.pogodaiklimat.ru

③ Administrative districts

The Kyrgyz Republic comprises seven regions and two special cities. Bishkek is the capital of the republic and a special city located in the region of Chuy. Its population is roughly 940,000, which is roughly 16% of the total population of the republic. The next most populous cities in the Kyrgyz Republic are Osh with roughly 270,000 and Jalal-Abad with roughly 110,000. *Source: National Statistic Committee of the Kyrgyz Republic

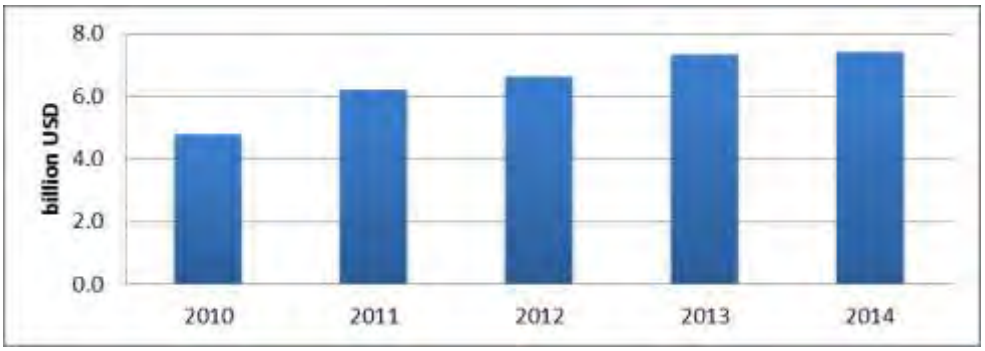

Figure 7-(2)-3　Regions of the Kyrgyz Republic

*Investment Promotion Agency under the Ministry of Economy of the Kyrgyz Republic

④ General condition of the Kyrgyz Republic

1) Gross Domestic Product (GDP)

The nominal GDP of the Kyrgyz Republic has increased each year since 2010, from 4.8 billion USD then to 7.4 billion USD in 2014, and the annual GDP growth rate over that period has averaged roughly 4%. Estimated GDP figures for 2015[28] show that the GDP has dropped to 7.16 billion USD, and this is likely due to the negative effects of the slowdown of the economies of Russia and Kazakhstan, which are the Kyrgyz Republic's main trade partners.




Source: World Bank

Figure 7-(2)-4 Nominal GDP of the Kyrgyz Republic

2) Industrial features

Retail, wholesale, tourism and other service industries account for the greatest percentage of the Kyrgyz GDP (49.6%), while agriculture accounts for 19.3% and industry 31.1%.[29] Industries including gold mining, farming and animal husbandry, food product manufacturing, clothing manufacturing and commercial industries. The economy as a whole is dependent on production from the Kumtor Gold Mine and money remitted from Kyrgyz laborers in Russia and Kazakhstan.

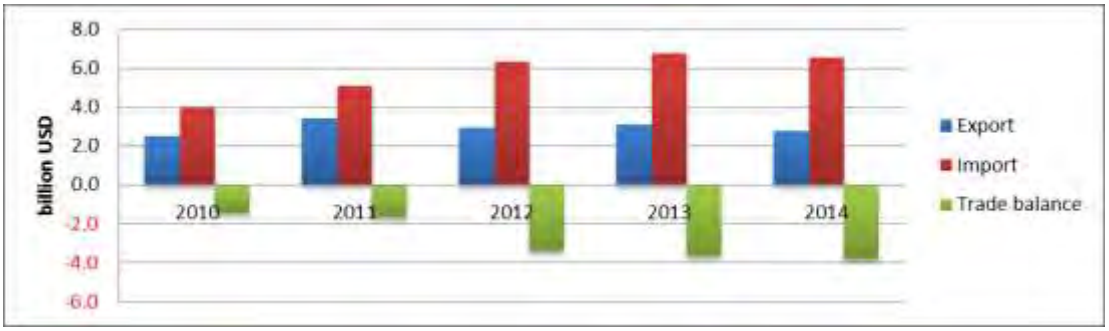
The republic does not have much petroleum or natural gas or many mining resources, but it can produce massive amounts of hydropower due to the abundance of its surface water resources from its many mountains.

[28] World Bank, 2016
[29] CIA World FACTBOOK 2014F

3) Trade

The Kyrgyz Republic normally runs a perennial trade deficit (more imports than exports), and its deficit is growing year by year. This is because its total imports increase from year to year while total exports remain sluggish. In addition, the republic's national debt as percentage of GDP as of 2014 is 53.0%[30] and its external public debt is nearing the maximum as percentage of GDP of 60%[31] set by the government. The republic's financial situation could worsen if its trade deficit continues to expand.[32]

The republic's main exports are gold, cotton, wool, furs, meat, tobacco, mercury, uranium, electrical equipment and shoes, and its main imports are petroleum gas, machinery and equipment, chemicals and food products. Its main export partners in terms of total amounts are Switzerland, Kazakhstan, UAE, Uzbekistan and Russia, and its main import partners are Russia, China, Kazakhstan, Japan and the United States of America.




Source: World Bank

Figure 7-(2)-5 Trends in Total Trade for the Kyrgyz Republic

4) Foreign direct investment (FDI)

Foreign direct investment in the Kyrgyz Republic varies from year to year. In 2013 it was 760 million USD, but in 2014 it was 210 million USD. Foreign corporations dealing in beverages and dairy products, banking, communications, hotels, mining and petroleum have invested in the Kyrgyz Republic since it gained its independence in 1991.

It is worth noting that the National Sustainable Development Plan 2013-2017, a presidential decree, identifies the following priority development industries: agriculture-related industries, energy, mineral resource development, traffic, transportation, communications, tourism and services. Thus, promotion of investment in industrial promotion and infrastructure improvement can be expected.

[30] IMF World Economic Outlook (October 2015)
[31] National Council for Sustainable Development of the Kyrgyz Republic: NATIONAL SUSTAINABLE DEVELOPMENT STRATEGY FOR THE KYRGYZ REPUBLIC For the period of 2013-2017
[32] As of 2013, the republic's cumulative external debt was more than 80% of its GDP


Source: World Bank

Figure 7-(2)-6 Trends in Direct Investment the Kyrgyz Republic

5) Principal overseas investment

In the Kyrgyz Republic, foreign corporations are able to enjoy a wide range of rights and guarantees – national treatment - as investors. For example, foreign corporations are subject to the same 10% corporate tax rate as Kyrgyz corporations.[33]

In September 2014, the Investment Promotion Agency[34] began taking action to attract and promote foreign investment in the Kyrgyz Republic by providing information about its investment environment and economic circumstances. Corporations from China, Turkey, South Korea and other countries have used the agency, and in 2015 a total of 79 projects (total investment of over 1 million USD) were selected.

6) State of economic cooperation between Japan and the Kyrgyz Republic

The Kyrgyz Republic has actively received ODA from Japan since it established its independence in December 1991, and relations between the two countries have developed favorably. In May 1995, Japan established the Kyrgyz Republic-Japan Center for Human Development in the capital of Bishkek in order to develop human resources for driving the public's transition to a market economy.

Japan's total exports to the Kyrgyz Republic reached 13.38 billion JPY (according to a 2014 Ministry of Finance survey) and consisted of machines, transportation equipment, motor vehicles and machinery for construction and mining among other items. In contrast, the Kyrgyz Republic exports aluminum and aluminum alloys to Japan (as of 2014, according to Ministry of Finance surveys).

[33] The Law of the Kyrgyz Republic "On Investments in the Kyrgyz Republic" dated 27th March, 2003 (with the latest amendments as of 22nd October, 2009).

[34] The Investment Promotion Agency of the Kyrgyz Republic was officially established by Cabinet Resolution No. 158 from March 18, 2014: On the Establishment of the Investment Promotion Agency under the Ministry of Economy

7) State of economic cooperation with countries other than Japan

The Kyrgyz Republic entered a customs union and treaty on increased integration with Russia, Belarus and Kazakhstan in March 1996, and their customs union developed into the Eurasian Economic Union (EEU), which the Kyrgyz Republic officially joined after Armenia in 2015. Merchandise, people and capital are expected to move more freely throughout the EEU, and as of 2016 the union's administrative office is continuing to lead efforts toward technical regulations within the union and enhancement of customs systems at the borders of EEU and non-EEU countries.

In addition, the Kyrgyz Republic has expanded its trade with China since becoming the first CIS nation to join WTO in October 1998. The intermediary trade of exporting goods imported from China to CIS nations is a substantial part of the republic's economy.

Table 7-(2)-1 Overview of the Kyrgyz Republic (as of February 29, 2016)

| | | | | | |
|---|---|---|---|---|---|
| General overview | Area | Population[1] | Capital | Official language | |
| | 198,500 km$^2$ (roughly half of Japan's) | 5.8 million (2014) | Bishkek | Russian | |
| | Ethnicities | Language | Religions | — | |
| | Kyrgyz, Uzbek, Russian and others | Kyrgyz | Islam, Russian Orthodox and others | | |
| | Geographical characteristics: Mountains account for over 94% of the territory of the republic, which extends from east to west. The Tian Shan stretch across the republic's border with China, and the Pamir Mountains spread in a southerly direction toward Tajikistan. The republic has an abundance of nature | | | | |
| Economic indicators | GDP per capita[1] | Economic growth rate[2] | Total imports[1] | Total exports[1] | |
| | 1,269 USD (2014) | -3.3% (2015 estimate) | 6.5 billion USD (2014) | 2.7 billion USD (2014) | |
| | Currency | USD exchange rate | — | — | |
| | Kyrgyzstani som (KGS) | 1 USD = 75.90 KGS (2015.12.31) | | | |
| | Nominal GDP[1] (billions of USD) | 2010 | 2011 | 2012 | 2013 | 2014 |
| | | 4.8 | 6.2 | 6.6 | 7.3 | 7.4 |
| | Main exports | Gold, cotton, wool, furs, meat, tobacco, mercury, uranium, electrical equipment, shoes | | | | |
| | Main export partners[3] | Uzbekistan (29.3%), Kazakhstan (28.5%), UAE (6.6%), Russia (5.9%), Afghanistan (5.8%), Turkey (5.3%) (2014) | | | | |
| | Main imports | Petroleum gas, machinery and equipment, chemicals, food products | | | | |
| | Main import partners[3] | China (54.4%), Russia (18.1%), Kazakhstan (7.8%), Turkey (4.4%) (2014)[3] | | | | |

| | | | | |
|---|---|---|---|---|
| Relations with Japan | Total exports to Japan[4] | Main exports to Japan | Total imports from Japan[4] | Main imports |
| | 130 million JPY (2014) | Aluminum and its alloys | 13.38 billion JPY (2014) | Machines, transportation equipment, motor vehicles, machinery for construction and mining |
| | Main treaties and agreements | Kyrgyz Republic Technical Cooperation Agreement, signed October 2004 | | |
| | Number of Japanese companies[5] | Local Japanese corporations: 6 (2014) | | |
| Investment policy | Preferential investment fields | Mineral resources, agriculture (animal husbandry), tourism | | |
| | Main authorities | Investment Promotion Agency (IPA) under the Ministry of Economy | | |
| | Overview of investment legislation | Laws of the Kyrgyz Republic | | |
| | Tax breaks for foreign investors | National treatment is given to foreign individuals and corporations. Protection against expropriation, compensation for losses suffered by investors, freedom of income use and financial transactions. Freedom of foreign currency remittance. | | |
| Other | Main logistical route | From Japan by sea to China; from China by rail to the Kyrgyz Republic | | |
| | Financial environment | Policy rate: 10.0% (October 2015)[6]; Consumer price increase: 7.5% (2014)[1] | | |

Source: Created by the study team based on World Bank data, JETRO, Japanese embassy website, Ministry of Finance statistics, the Kyrgyz Republic Statistics Commission and interviews in the field

[1]World Bank (2015)
[2]Estimated in October 2015 based on World Economic Outlook (IMF)
[3]Kyrgyz Republic Statistics Commission
[4]Ministry of Finance trade statistics (2014)
[5]Ministry of Foreign Affairs Annual Report of Statistics on Japanese Nationals Overseas (2015 summary)
[6]TRADING ECONOMICS

⑤ Aid policies of Japan to the Kyrgyz Republic

The Ministry of Foreign Affairs (MOFA) and JICA have established aid policy for the Kyrgyz Republic, and the Kyrgyz Republic is included in the region-specific strategies of the Central Asia region of the Global Food Value Chain Strategy developed by the Ministry of Agriculture, Forestry and Fisheries (MAFF).

Important objectives among MOFA's assistance policy for individual countries are maintenance of roads and other transportation infrastructure; rebuilding of schools, hospitals and other social infrastructure; and rural development to narrow the gaps between regions. Additionally, since 2002 MOFA has promoted regional cooperation under a framework known as the Central Asia plus Japan Dialogue, holding foreign ministers' meetings, talks between high-level strategists, intellectual dialogues led by experts, meetings of

specialists and exchange between foreign ministries in pursuit of stability and development of the nations and regions in Central Asia, including the Kyrgyz Republic.

JICA as well focuses on improving and maintaining roads, bridges and other transportation infrastructure and on promoting agriculture and business. One specific result of these agricultural and business promotion efforts is the One Village, One Product project. One example is felt products made in the Kyrgyz Republic and sold by Japanese company Ryohin Keikaku (creators of the Mujirushi Ryohin (no brand, quality goods) brand). The felt products are gaining attention inside and outside the Kyrgyz Republic. In addition, JICA Hokkaido invites key people from corporation and the upper echelons of government in the Kyrgyz Republic, which has a climate similar to that of Hokkaido, to visit Japan for training on themes such as agriculture and dairy farming.

Hokkaido has always had a healthy awareness of the Kyrgyz Republic that is growing stronger through events such as a seminar on the republic led by Japanese ambassador to the Kyrgyz Republic Takayuki Koike in Sapporo in June 2015. In terms of business as well, further development for the Kyrgyz Republic is expected in the future, particularly in the construction and infrastructure sectors through such ODA projects as bridge construction in the republic by major Hokkaido construction company Iwata Chizaki Inc.

Table 7-(2)-2 Japanese Aid Policy for the Kyrgyz Republic

| | | |
|---|---|---|
| Ministry of Foreign Affairs | Major objectives of aid policy for individual countries (excerpted) | ・Maintain transportation infrastructure<br>・Rural development |
| | Intermediary objectives of aid policy for individual countries (excerpted) | ・Improve capacity to maintain roads, improve traffic on primary roads<br>・Rural development (closing the gap between urban and rural areas)<br>・Restore public facilities (hospitals, schools, etc.) |
| | Central Asia plus Japan Dialogue (6th meeting in Tokyo)* | Expert instructions for the project to Kyrgyz authorities responsible for agriculture:<br>(1) Establish meat processing corporations and a network of supporting subdivisions<br>(2) Cluster fruit juice concentrate production<br>(3) Build trade logistics center |
| JICA | Objectives/critical policy | (1) Improve transportation infrastructure (improve roads and bridges, strengthen road administration and maintenance capacity)<br>(2) Promote agriculture and business (One Village One Product, agricultural policy support) |
| MAFF | Global Food Value Chain Strategy (excerpted) | Region-specific strategies (Russia, Central Asia, etc.)<br>Promote the establishment of a high-value-added food value chain through the establishment of high-value-added production areas, food product processing zones, cold chains and other parts of the logistics and retail network through the introduction of advanced technology such as agricultural production in cold regions, irrigation, ICT (information and communication technology), plant factories and quality control. |

*Central Asia plus Japan Dialogue, 6th meeting in Toyko: Regional Development through Agriculture in Central Asia

⑥ Awareness level of Hokkaido companies in regard to international expansion

One example of the experience Hokkaido corporations have in the Kyrgyz Republic is the preparation to conduct sales and marketing activities in the northern part of the republic by agricultural machinery manufacturers. Interviews and seminars held in Hokkaido have confirmed interest in the Kyrgyz Republic and Central Asia among dairy product manufacturers, food product developers and travel agencies. The "Central Asia/Kyrgyz Republic Business Seminar: Challenges to Kyrgyz Economic Development and Business Expansion Possibilities" was held in Sapporo, Hokkaido in July 2014.

Other corporations have cooperated with the acceptance of trainees through training programs on disaster risk reduction and road maintenance.

Table 7-(2)-3 Results of Interviews with Hokkaido Corporations

| Sector | Hokkaido corporations' interest, needs, etc. for international expansion |
|---|---|
| Agricultural machines | Preparations to sell and provide service in the Kyrgyz Republic have begun |
| Energy | 10-year implementation through the JICA grassroots assistance program of a project to popularize biogas power generation plants with livestock excreta as the raw material |
| Construction/infrastructure | Building bridges in the Kyrgyz Republic through ODA |

Table 7-(2)-4 Questionnaire from Seminar in Hokkaido (November 25, 2015)

| Sector | Points for confirmation in Kyrgyz Republic |
|---|---|
| Dairy product manufacturing | There is desire to expand with dairy product production technology befitting regions in countries that actively promote dairy farming and industry. Concurrently, there is a need to confirm possibility of cooperation with Central Asia agricultural academies/agricultural research institutions |
| Agricultural machines | There is desire to use potato harvesting technology to expand into Central Asian regions. There is a need to investigate the type of potato (for eating, for processing or other use), planting methods, dimensions, controls, harvesting circumstances, soil quality of growing habitat and other information. |
| Companies involved in food production | As it is likely many undeveloped food products and raw materials exist, there is a desire to investigate the possibility of importing these products as well |
| Food product development | Expansion into Central Asia is possible if potential branch stores can be found in undeveloped regions. |
| Travel agencies | It is likely that few Japanese prefectures are actively promoting themselves in Central Asia; thus, there is a desire to be the early bird and boost the name recognition of Hokkaido. |

Example of Expansion: IHI STAR Machinery Corporation (Kyrgyz Republic, Kazakhstan)

① Overview and outcomes

IHI STAR Machinery Corporation is an agricultural machinery manufacturer headquartered in the city of Chitose in Hokkaido. The company first expanded into both the Kyrgyz Republic and Kazakhstan in 2014 and is in the midst of developing activities to expand sales locally. IHI STAR had long wanted to sell in Russia and other foreign countries and had sought opportunities to expand into the Central Asian region. In 2014 the company seized the opportunity presented by the JICA Collaboration Program with the Private Sector for Disseminating Japanese Technology for Agricultural Machinery Introduction in the Broad Dairy Region, exhibiting and holding demonstrations at local exhibits in the Kyrgyz Republic and Kazakhstan, and inviting key local people to Hokkaido for training. In 2015 the company continued negotiations with corporations and relevant authorities toward developing sales in the region, and during Japanese Prime Minister Shinzo Abe's trade mission to Central Asia that October, they signed memoranda with the Ministry of Agriculture and Melioration of the Kyrgyz Republic and Ail Bank, a major financial institution in the republic.

② Factors of success

Several key factors have driven the successful expansion of IHI STAR into Central Asia, a region with few other examples of Japanese expansion.

The first is the technical capacity refined by interaction with customers in Hokkaido. Agricultural machinery users in Hokkaido farm large areas and have exacting requirements for durability and accuracy of work. A pressing issue for farmers dealing with Hokkaido's limited growing season is whether they can complete their work without interruption. If machinery wears too quickly or fails to harvest or gather crops in some areas, farmers lose work time and efficiency and will feel the negative effects on the business side. IHI STAR has made repeated improvements based on feedback from its customer base in Hokkaido, and thus is confident that it can develop business in Central Asia, where farm plots are much larger.

Next is targeting, in which IHI STAR used its experiential data to select markets in order to maximize the performance of its products in the target countries. The company targeted the broad dairy region that stretches from southern Kazakhstan to the northern part of the Kyrgyz Republic. Dairy farming is prolific in the region, and dairy farmers produce their own hay; there is a great need to use machinery related to making hay, which is IHI STAR's specialty. In addition, small and medium-sized agricultural machinery is better suited to the region's geography than large German- and American-made machinery that results in overlap. IHI STAR painstakingly gathered information from local areas and identified regions regardless of national borders where they could avoid the competition, which helped them market more effectively.

Finally, IHI STAR created a network to involve relevant people. The company has expanded its Central Asian network by working daily to exchange information with bright people in Central Asia and proactively disseminating information through interviews with professional journals and seminars. It is more difficult to obtain information in Central Asia than in Vietnam, Thailand and Inner Mongolia and Xinjiang in China, where the company had ventured in the past. However, IHI STAR successfully overcame this lack of information by building interdisciplinary relationships with experts.

All of this demonstrates that IHI STAR continues to gather information from the area and build its network, and strived to reduce the business risk of expanding into a foreign country for the first time through a JICA collaboration program with the private sector.

③ Outlooks

Both the Kyrgyz Republic and Kazakhstan are in a period of widespread updating of agricultural machinery from the Soviet era, and the growth potential is an attractive feature of this market. Neither country has many agricultural machines that can be easily tinkered with or maintained. There are issues with financial arrangements by lease in the Kyrgyz Republic and with securing a network of service centers in Kazakhstan, but there is potential for further development in specific markets.

⑦ Results of on-site survey

1) Contention of on-site survey results

Foreign corporations in the Kyrgyz Republic hail from Russia and Kazakhstan as well as Turkey, China, South Korea and Germany. However, the small size of the domestic market has resulted in a limited amount of foreign direct investment and delayed introduction of technology for cold regions and agriculture. Even 25 years after the Kyrgyz Republic gained its independence, remnants of Soviet-era machinery and systems are still visible at every turn. In addition, Russian engineers formed the technical core of the country until the collapse of the Soviet Union in 1991, and many of them returned to Russia. Few companies were able to serve as counterparts to pick up where the Russian engineers left off. Thus, technical guidance and human development are still critical to the Kyrgyz Republic.

2) Issues for development and needs in the Kyrgyz Republic

a) Agricultural and dairy farming industries

Picture 7-(2)-1 Deteriorated agricultural machinery

The Kyrgyz Republic is 100% self-sufficient in dairy products, but can only supply 40% of its need for grains and roughly 20% to 30% of its need for vegetables. Facilities and Soviet-era machinery in its farming industry are deteriorating and in need of updating. There is a particular need for small- and medium-sized agricultural machinery due to the large amount of small, irregularly shaped and steeply sloped farmland in the Kyrgyz Republic. In addition, the republic's entry into the EEU integrated economic zone has brought with it an increased need to compete with Russia, Kazakhstan and other neighboring countries. Thus, there is a growing need to introduce certification technology, milk quality and inspection processes and other technology through foreign funding in order to improve product quality and create brands and high-value-added products. The republic also needs to ensure a stable milk yield by securing roughage, grading pastureland and replacing dairy farming leaders it lost after the collapse of the Soviet Union.

b) Energy

As roughly 93% of Kyrgyz territory is mountains, hydropower accounts for 70% of its power generation. Though electricity fees are low, the power grid is incomplete, and there are issues with access to stable power supplies in hilly and mountainous regions and communities and for irrigation and pumping facilities. The situation is ripe for the introduction of independent, renewable energy. Additionally, with so many clear days throughout the year, the environment is well suited to solar power generation.

Picture 7-(2)-2
Experimental solar panels

3) Issues for promoting cooperation with private companies

The Kyrgyz Republic side has raised insufficient capital as an obstacle. Actually, during the Q&A session at the seminar in Bishkek (held January 21, 2016), there were questions about initial expenses. The GDP per capita in the Kyrgyz Republic was 1,269 USD per year (World Bank 2014), which is low even among Central Asian countries; there is little room to improve purchasing power and total consumption. However, on January 1, 2013 the Kyrgyz Republic government devised The Kyrgyz Republic Sustainable Development Program 2013-2017, which is a plan to raise the republic's GDP per capita to 2,500 USD. Thus, there is hope for economic growth in the future. For example, ways to address the problem of limited finances in the agricultural sector include organizing farmers to reduce the initial investments of individual farmers and promoting cooperation with private companies through the establishment of leasing schemes or other financial arrangements.

4) Responses at seminar

a) Seminar and questionnaire procedures

Three Hokkaido corporations helped host a seminar in light of the needs of the Kyrgyz Republic as understood from the series of studies conducted to date. To obtain further information, a questionnaire survey was conducted after the completion of the seminar. As shown below, all 10 people who responded to the question of satisfaction with the seminar replied that they were very satisfied or somewhat satisfied.

Table 7-(2)-5 Overview of the seminar and questionnaire survey

| | |
|---|---|
| Date of the seminar | Thursday, January 21, 2016 (Thursday) 15:00-17:00 |
| Site of the seminar | Japan Center in Bishkek, Kyrgyz |
| Methodology of questionnaire | Distributed questionnaire sheets to seminar participants, then collected them (after the conclusion of the seminar) |
| Questionnaire target | 57 people from Kyrgyz Republic public offices, corporations, NGOs and other groups |
| Retrieved questionnaires | 11 (19.3% of scope) |
| Affiliation of respondents | 7 from corporations, 4 from NGOs and other groups |

b) Purpose of participating in the seminar (multiple answers)

The most common response was “I wanted information about Japanese (Hokkaido) corporations,” followed by an equal number of responses saying, “I am interested in the Japanese companies participating in this seminar” and “I am considering doing business with Japanese (Hokkaido) corporations in the future.”

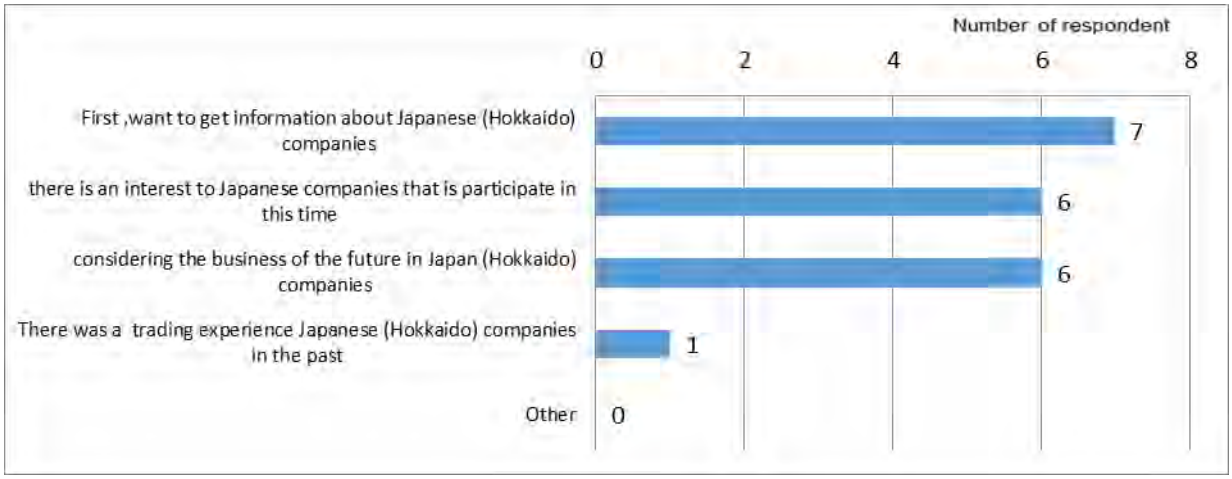



Figure 7-(2)-7 Purpose of Seminar Participation

c) Industrial sectors of interest (multiple answers)

The most common response was agriculture and animal husbandry, followed by machinery, and environment and energy.

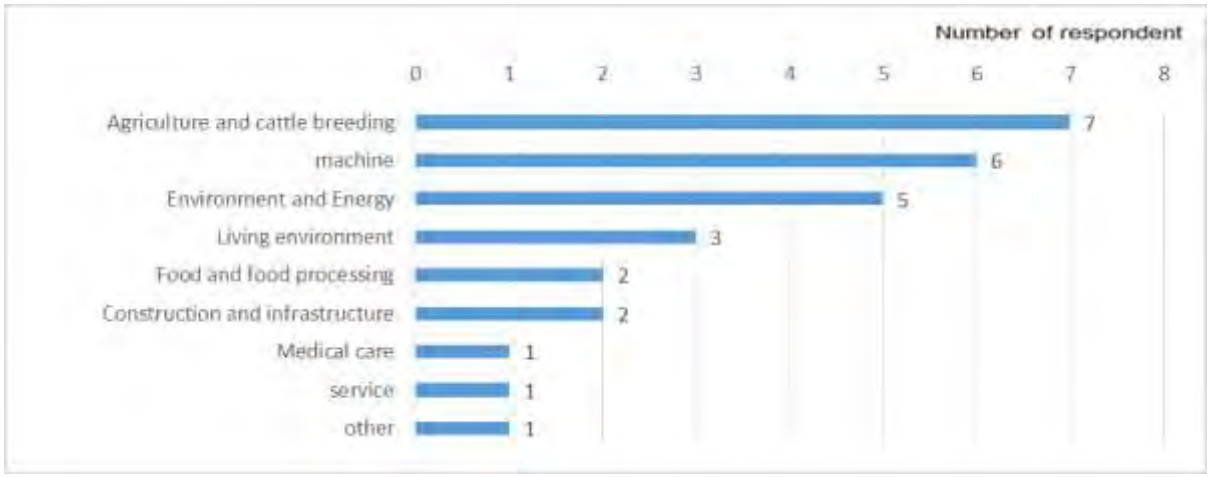



Figure 7-(2)-8 Industry Sectors of Interest

The following chart shows specific interest in each sector.

Table 7-(2)-6 Specific Interest in Each Sector

| | |
|---|---|
| Agriculture/animal husbandry | Agricultural machinery, animal husbandry, potato harvesting machinery, fruit growing, fertilizer |
| Food product production/processing | Milk processing methods, winemaking |
| Construction/infrastructure | Japanese construction technology |
| Environment/energy | Natural energy, energy conservation, solar panels, biogas, bioenergy |
| Living environment | — |
| Machinery | — |
| Health care | — |
| Service | Trash collection |
| Other | Japanese business methods/education |

d) Obstacles for conducting business with Japanese companies (multiple answers)

The most common response was “There is a lack of information,” followed by “There is no way to communicate with Japanese corporations.”

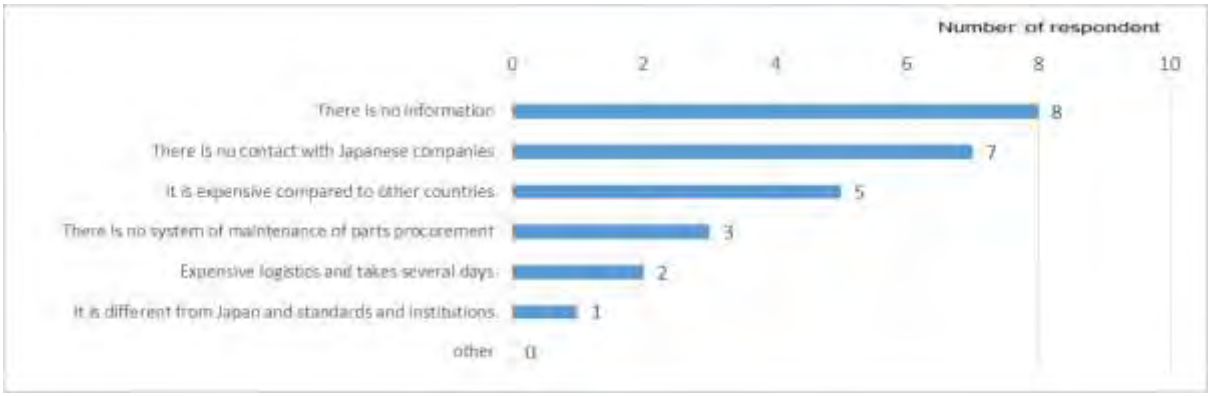



Figure 7-(2)-9 Challenges for Conducting Business with Japanese Corporations

e) Future business with Japanese corporations

The most common answers were “I want to start doing business as soon as possible” and “I want to find a partner company first,” followed very closely by “Obtain more detailed information.” Respondents indicated they required information about service industries, fruit growing and the agricultural industry.


Figure 7-(2)-10 Future Business with Japanese Corporations

⑧ Future planning

The Kyrgyz Republic’s economy is small, but because it joined the EEU, investing in the republic will expand business opportunities throughout a large market that includes Russia. Also, given the already-developed price competition with products from China and South Korea, Japanese corporations have a realistic opportunity to expand in terms of providing not only products but also technical guidance as well as services and other non-technical value. Japanese experts have been dispatched to the Investment Promotion Agency of the Kyrgyz Republic Ministry of Economy (from December 2015 to December 2017) to advise on investment promotion and will play supporting roles for Japanese corporations expanding into the republic.

1) Case of agricultural machinery

As indicated by the present circumstances and needs from ⑦-2) Issues for development and needs in the Kyrgyz Republic, one of the Kyrgyz Republic side’s needs is measures to mechanize small-scale farming operations. The republic is able to meet 100% of its need for dairy products, but its self-sufficiency rates for grains and vegetables are only 40% and 20% to 30%, respectively. Agricultural and dairy farming operations use deteriorating facilities and machinery from the Soviet era that are in need of updating. Mechanization of farming operations on small land areas in particular has been delayed, resulting in hard labor and inefficiency in some harvesting work and work done by hand. It is worth noting that there is a particular need for small- and medium-sized agricultural machinery due to the large amount of small, irregularly shaped and steeply sloped farmland.

Mechanization has progressed in Hokkaido because the average farmer’s plot is 23.4 ha, which is 14.6 times higher than the average plot throughout the rest of Japan (Hokkaido Agricultural Administration Division 2014). The distinct technologies Hokkaido has to offer include small harvesting machinery that are easier and cheaper to maintain and operate than large machinery. The machines are highly durable in

response to customers' needs to handle the vastness and cold of Hokkaido in addition to various soil conditions.

Japanese corporations considering expansion can overcome the associated challenges by identifying detailed specifications of agricultural machinery needed by farmers of the Kyrgyz Republic and setting prices within allowable levels. In addition, they must establish a reliable maintenance system to provide services and spare parts when problems occur or repairs become necessary. Overall agricultural productivity should improve when these efforts for agricultural machinery are coupled with the use of fertilizers and pesticides, guidance on farming techniques and other related technologies.

Introducing small machinery can be expected to free farmers from hard labor and enable work during the harvesting period as well to be done in shorter amounts of time, leading to a reduction in loss due to crop spoilage. Promoting mechanization should enable farmers to cultivate larger areas of land and offer wider varieties of crops.

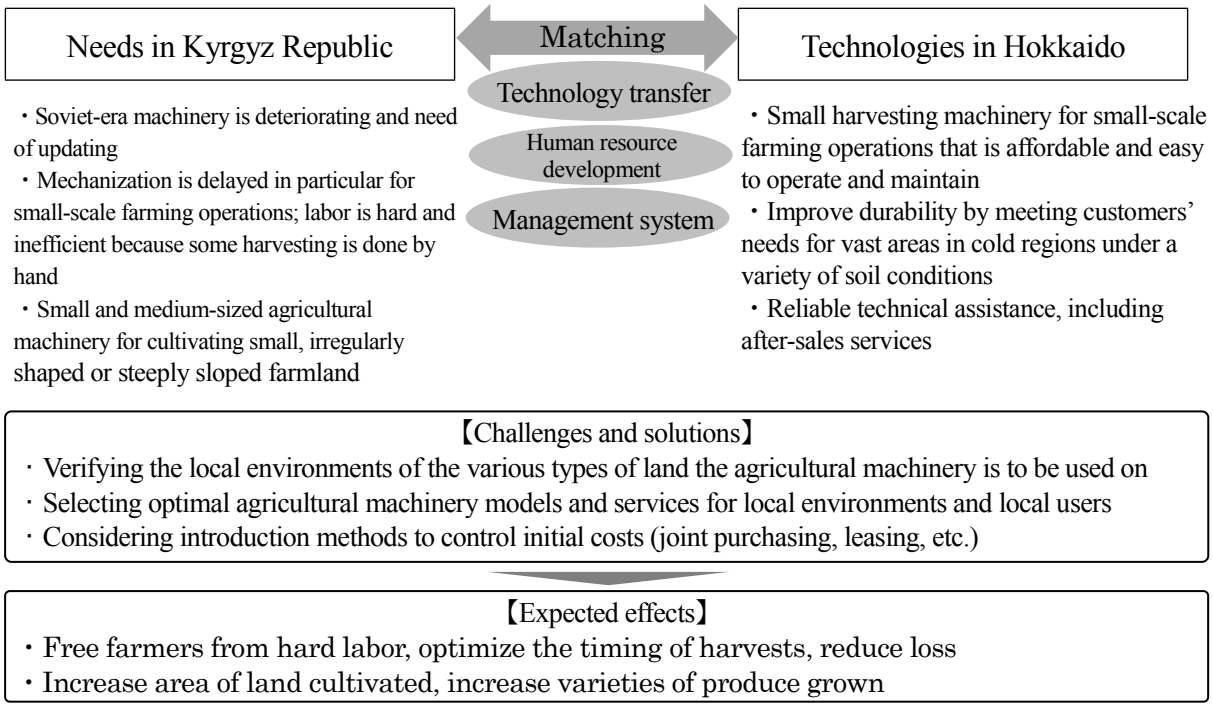



Figure 7-(2)-11 Business Development Plans (Agricultural Machinery)

2) Case of dairy farming

As indicated by the present circumstances and needs from ⑦-2) Issues for development and needs in the Kyrgyz Republic, the Kyrgyz Republic side needs the introduction of certification technology and related milk quality and inspection processes in order to export to the markets of members of the EEU, which was established and welcomed the republic as a member in 2015. The republic also needs to ensure a stable milk yield by securing roughage, grading pastureland and replacing dairy farming leaders it lost after the collapse of the Soviet Union.

Like the Kyrgyz Republic, the dairy farming industry in Hokkaido is thriving - it produces 52.1% of Japan's raw milk (MAFF Animal Husbandry Statistics 2014). The distinct technologies Hokkaido has to offer include advanced management processes for dairy farming operations, including quality control, feed management and safety and sanitation control; and branding with high-value-added dairy products. Hokkaido has traditionally piloted the Japanese dairy farming and is the country's base of dairy production, but recent years have seen the progression of sixth-order industrialization[35] and marketing efforts.

Japanese corporations considering expansion can overcome the associated challenges by introducing technology and processes for certification, quality control, feed management, and safety and sanitation control for dairy product plants and other production areas in the Kyrgyz Republic. In addition, they can update agricultural machinery to produce roughage more efficiently, and introduce non-technical measures such as marketing methodology for branding and establishing premium dairy products. It is worth noting that the requirement of Eurasian Economic Committee certification for exporting products to EEU markets such as Russia and Kazakhstan necessitates technical and expert investigations of dairy farming operations in the Kyrgyz Republic. Hokkaido could begin cooperation with the Kyrgyz Republic through such efforts as establishing an inspection laboratory for test requests related to the approval agencies, or providing advice about product testing.

Introducing this technology can be expected to improve milk yield and the quality of dairy products in addition to further promoting the dairy farming industry.

[35] Sixth-order industrialization: Integrating production, processing and sales in agriculture, forestry and marine industries, and promoting the creation of new industries that capitalize on regional resources (MAFF)

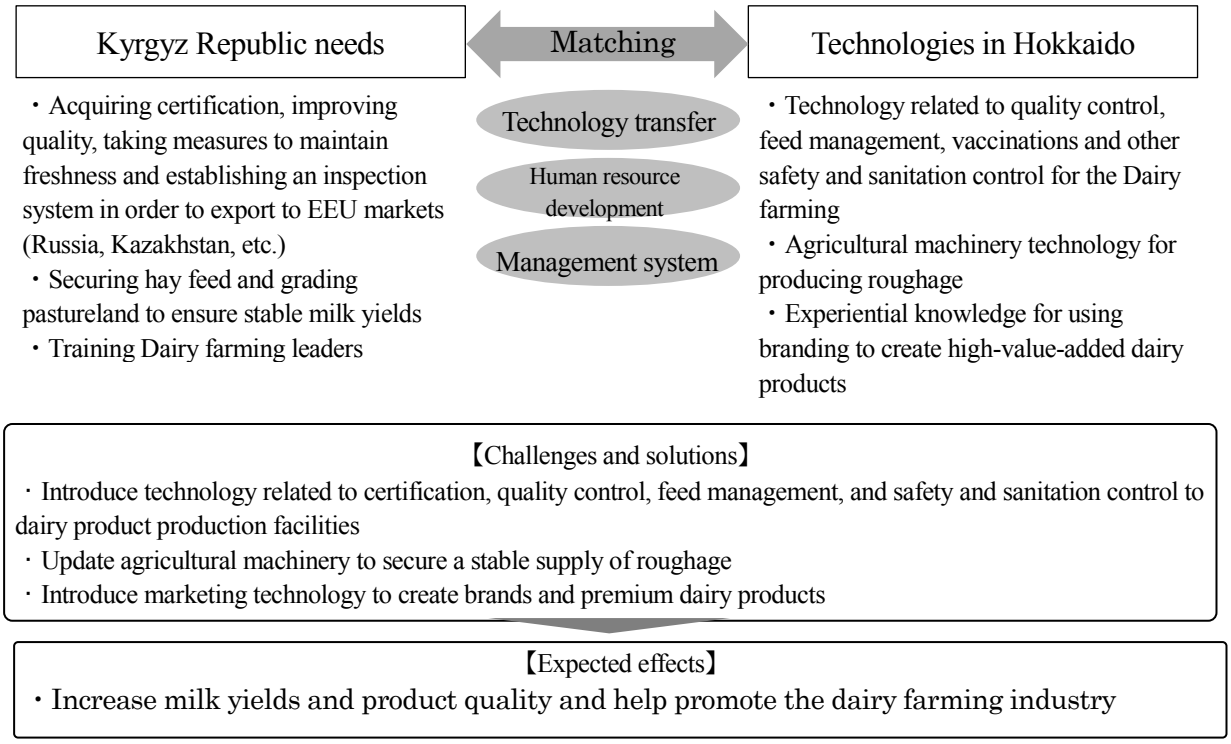



Figure 7-(2)-12　Business Development Plans (Dairy farming)

3) Case of solar power generation

As indicated by the present circumstances and needs from ⑦-2) Issues for development and needs in the Kyrgyz Republic, the Kyrgyz Republic has abundant water resources and thus generates ample hydropower and charges low fees for electricity. The republic needs to supply electric power to communities, cabins and other locations in mountainous areas scattered throughout the country where power is not currently supplied. Thus, there is much interest in an electric power system that uses solar power and other renewable energy depending on the region.

Hokkaido generates ample power from its abundance of natural energy resources, and boasts the highest solar and wind power outputs in the country (Agency for Natural Resources and Energy, March 2013). The distinct technologies Hokkaido has to offer include bifacial solar panels that increase power generation efficiency by harvesting power from both the front and back of the panels, power combining systems that minimize loss and cut costs by combining energy from multiple sources, and zero-waste, environmentally friendly foundations and frames that can be installed on soft ground, sloped land and a variety of other soil conditions. In addition, these technologies are deployable in cold regions that experience temperatures as low as –30ºC.

Challenges facing Japanese corporations considering expansion into the Kyrgyz Republic include the importance of selecting target regions as there are only roughly 10,000 people do not have access to a power supply, transportation costs because it is a landlocked country, and stiff competition on prices from

China and other more advanced countries. Solutions include undertaking marketing efforts that refine the market, asserting prominence in terms of quality due to high power generation efficiency and other factors, and explaining how to control total costs, including running costs. Also important is providing both the technical aspects of the solar panels and systems, and the non-technical aspects such as technical guidance.

Introducing this technology can be expected to lead to the development of the entire region by enabling the supply of power to mountainous areas that do not receive a sufficient power supply now. Introducing the latest technology could spark excitement and result in the spread of its reputation throughout the Russian-speaking world. Efforts are underway to promote tourism in the 3,000-meter mountains of the Kyrgyz Republic, and installing solar panels on cabins in the mountains could have the effect of promoting tourism.

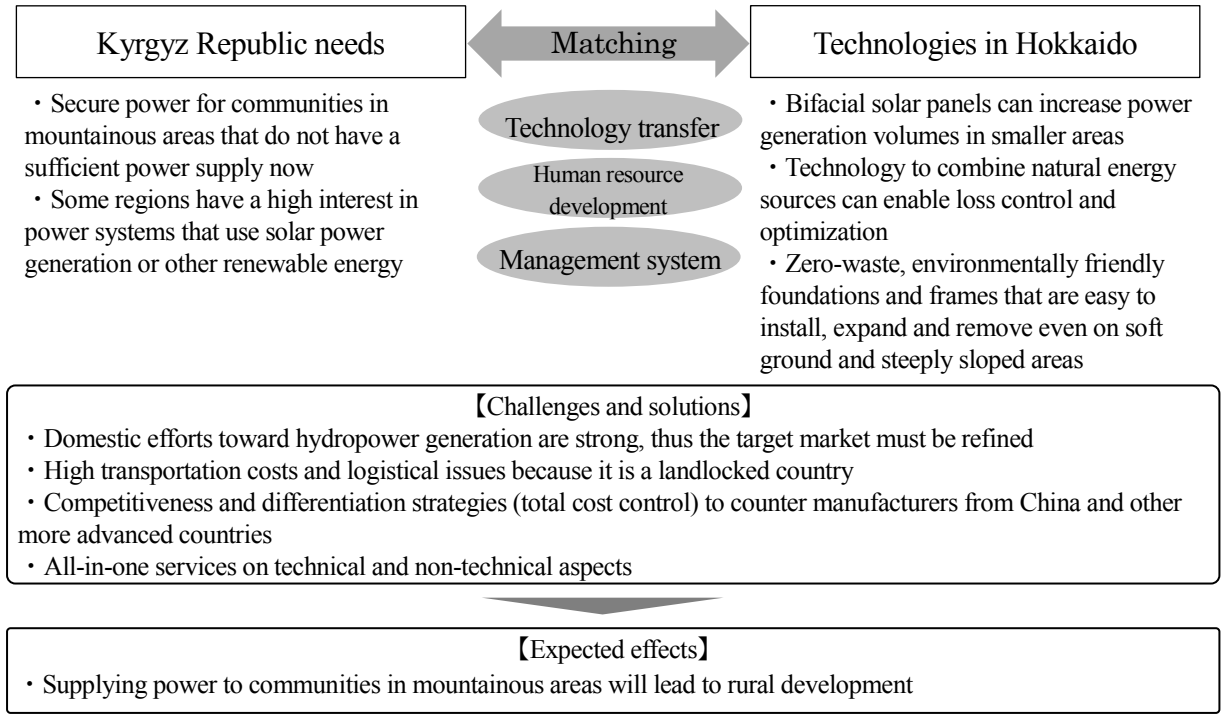



Figure 7-(2)-13　Business Development Plans (Solar Power Generation)

Business Development Proposal: One Village One Product Activities in the Kyrgyz Republic, and Export Promotion from Collaboration with Hokkaido

The One Village One Product (OVOP) Movement is one idea to strive for collaboration and business promotion between the Kyrgyz Republic and Hokkaido. The OVOP Movement was originally proposed in 1979 in Oita Prefecture, Japan. It was introduced in Hokkaido in 1983, and since then 695 special products have been developed.

Most regions in Japan have long histories and familiar natural backgrounds that lend a distinct, regional flavor to their many special products. In contrast, Hokkaido has a relatively short history, and thus the OVOP Movement there feels more like efforts toward agricultural promotion and community building. According to a questionnaire survey, 57.5% of respondents in Hokkaido feel that the OVOP Movement helps with regional development (One Village One Product Movement Awareness Survey, Hokkaido 1992(500 people from prefectural government monitor)).

The Kyrgyz Republic is similarly blessed with fruits, vegetables and an abundance of nature, and the OVOP Movement took hold among 136 groups with 1,500 people in 47 villages (2014). JICA is implementing the "Community Empowerment Project through Small Business Promotion by One Village One Product (OVOP) Approach in Issyk-Kul Region" from January 2012 through July 2016, and has successfully reinvigorated community organization and promoted small businesses.

Seaberry processed food product (Mukawa, Hokkaido)

The experience gained from connecting product development and branding of primary products to regional promotion in Hokkaido can serve as a reference for the Kyrgyz Republic. For example, sea-buckthorn (seaberry) is a fruit that can be grown and processed in both Hokkaido and the Kyrgyz Republic, and has been commercialized in both countries. Hokkaido could transfer technology to the Kyrgyz Republic in order to advance processing technology and help with packaging, branding and other aspects of the business. Both location share circumstances that require high-value-added products to make up for disadvantageous logistical environments.

However, the OVOP Movement in Japan tends to focus mainly on creating special products, and as time passes, issues crop up with training successors and remaining competitive with competing and similar products. The initiative does not end with simply developing products; it is critical to develop people, involve local community members, and introduce marketing strategies and business management methodology.

With its entry into the EEU, the Kyrgyz Republic is expected to have even an greater need to develop high-value-added products in order to promote exports, and collaboration with existing projects between the Kyrgyz Republic and Hokkaido such as OVOP should be promising.

(3) Kazakhstan

① Geographical features

Kazakhstan is an inland country bordered by great nations, Russia to the north and China to the east, with an area of of 2.72 million sq km, roughly seven times that of Japan. Due to its size, regional characteristics such as climate vary in temperature and precipitation, and are characterised by wheat and livestock farming in the north, vegetable production in the south, petroleum and other natural resources in the west, and automobile manufacturing in the east.

Located literally at the heart of Central Asia between Europe to the west and the Asia to the east, Kazakhstan serves as a strategic distribution hub linking major transportation networks China-Russia-Europe, China-Caspian-Caucasus and Turkmenistan-Iran-Persian Gulf. Especially in terms of material flows from China to Europe, the China Land Bridge, extending from the port of Lianyungang to Europe through the border between China and Kazakhstan (Dostyk, Qorghas) has played an increasingly important role in recent years. From Japan to Almaty, it averages 27-32 days [according to data from SENKO Co. Ltd.].


Figure 7-(3)-1 Location of Kazakhstan

Source:Ministry of Foreign Affairs


Figure 7-(3)-2 Major physical distribution routes

② Climatic features

Almaty, a large city in southern Kazakhstan, is located at a latitude of 43 degrees N, which roughly corresponds to the city of Sapporo in Hokkaido. Especially in northern Kazakhstan, including Astana, the capital city, the temperature drops harshly in winter, and may reach -40°C.

Therefore, technology from Hokkaido, which is Japan's coldest region, can possibly be applied in Kazakhstan as well, and positive effects can be expected due to the vast land areas over which it would be applied.

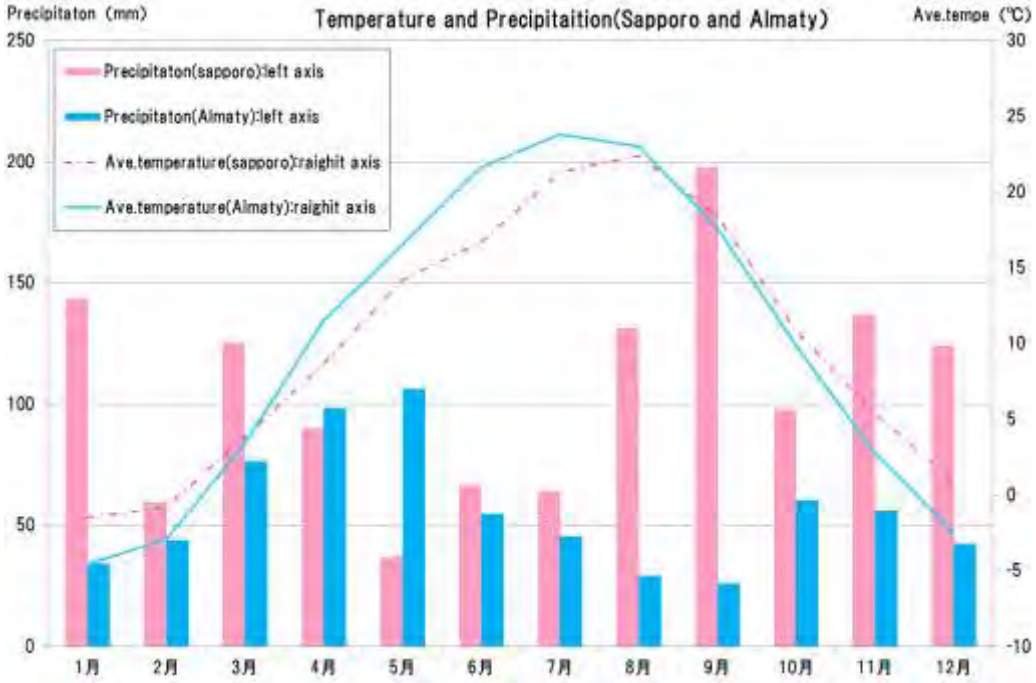



Figure 7-(3)-3 Monthly average temperature and total precipitation of Almaty

Source: Japan Meteorological Agency website, Jan.-Feb. 2015

③Administrative districts

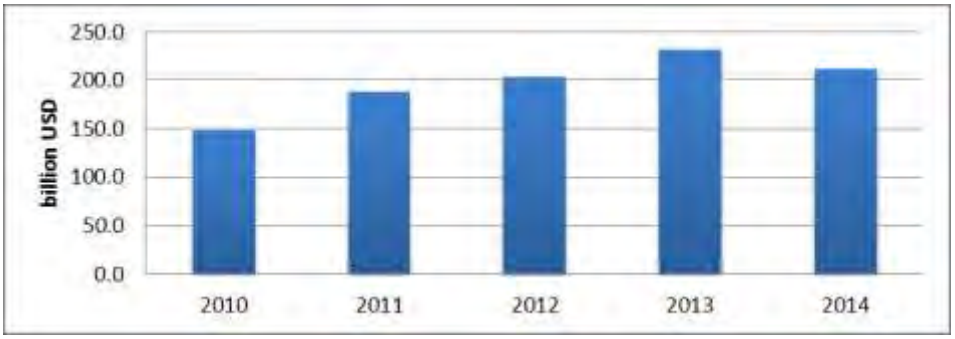
There are 14 oblasts (provinces) in Kazakhstan. The major cities are Astana in the north (the capital, with a population of 850 thousand in 2015) and Almaty in the south (1.5 million in 2015). Overall the total population is 17.4 million making the average density low, and concentrated in urban areas.


Figure 7-(3)-4 Oblasts of Kazakhstan

④ General condition of Kazakhstan

1) Gross Domestic Product (GDP)

Looking at the state of nominal GDP since 2010, it increased from (USD) $148 billion to $212.2 billion over five years through 2014. The annual average growth rate in the last 5 years was 6%, but after 2014, it turned downward, and an estimated value shows, a further decline to an estimated $195 billion in 2015.[36] This is attributable to falling prices for oil and other resources in international markets, which are the main exports of Kazakhstan.




Source: World Bank

Figure 7-(3)-5 Transition of nominal GDP in Kazakhstan

[36] IMF, World Economic Outlook, Jan. 2015

2) Industrial features

A breakdown of Kazakhstan's GDP shows 4.9% agriculture-related, 29.5% in mining, and 65.6% in service industries, for which the proportion of service-related communication, finance, and retail sectors are high[37].

Since the Kazakhstan economy is resource-dependent[38] and does not have core manufacturing industries, improvement of the industrial structure through reformation of ministries and government agencies and the adoption of a presidential decree, "Industry and Innovation Development Program for Years 2015-2019" have been undertaken.

3) Trade

The recent Kazakhstan balance of trade shows a steady export surplus. Major export commodities are petroleum and related products, natural gas, ferroalloys, chemicals, machinery, wheat, wool, and coal; while prime export trade partners are Italy, China, Holland, Russia, and France.[39] On the other hand, major imports are machinery equipment, metal products, and foodstuffs; with chief import trade partners Russia, China, Germany, USA, and Ukraine.

However due to the downturn induced by the current decline in resource prices, its home currency the Tenge has been rapidly depreciating, particularly after introducing a floating system in late August, 2015.[40] Because Kazakhstan relies on imports for many consumer goods, there are inflation concerns in the short term due to the increased cost of imported commodities and diminished public buying capacity as a result of the currency devaluation.


Source: World Bank

Figure 7-(3)-6 Changes in the value of Kazakhstan trade

[37] CIA world FACTBOOK 2014F

[38] Resource-rich country endowed with such energy resources as petroleum and natural gas, and mineral resources. Oil deposits are 30 billion barrels (accounting for 1.8% of the world supply), and natural gas deposits —1.5 trillion cubic meters [BP Statistical Reviews, 2014]. It also has an abundant supply of non-ferrous metals including rare metals (Its Uranium deposits are second largest in the world, chrome the largest, and zinc sixth. [USGS, 2014]

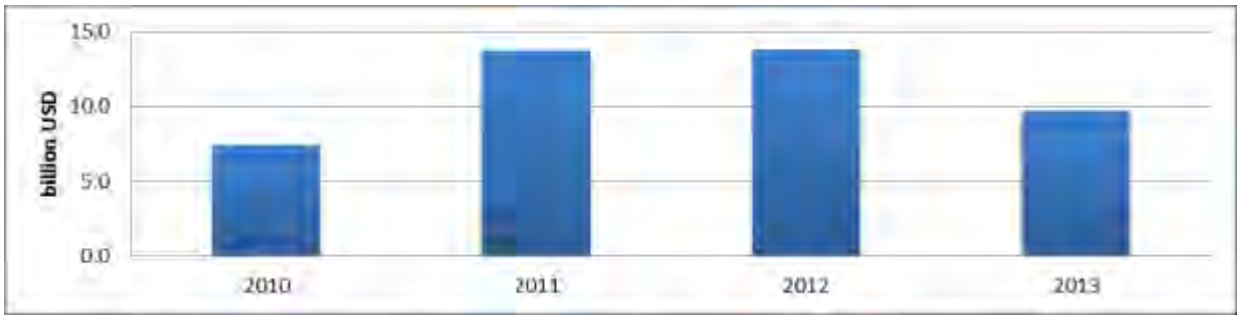
[39] Ministry of National Economy of the Republic of Kazakhstan, Committee on Statistics, 2014

[40] Kazakhstan introduced a floating currency system in 1999, and implemented policies for foreign exchange rate stabilization by adopting a pegging system, but introduced a freely floating rate in August 2015 influenced to some extent by the Chinese Yuan devaluation.

4) Foreign Direct Investment (FDI)

The Kazakhstan economy has been rapidly growing by virtue of resource development led by foreign capital. Over the last five years, FDI in Kazakhstan increased from the previous year in 2011, but dropped by 30% from the previous year in 2013. This was due to the US subprime mortgage crisis in 2007 and reduced investment from overseas owing to the devaluation of the Tenge in February 2009 bringing Kazakhstan's economy down, then Kazakhstan's government monetary injections and debt restructuring from 2010 helping to revive its economy and regain FDI in 2012. By 2013, however, FDI decreased with the likely influence of a plunging European economy.

Because FDI in Kazakhstan is focused on natural resources, it fluctuates in accordance with international market prices.




Source: World Bank

Figure 7-(3)-7 Transition of FDI in Kazakhstan

5) Principal overseas investment

In June 2014, President Nazarbayev signed a bill concerning consolidation of the investment environment, which revised the "Law of the Republic of Kazakhstan on Investments" (as of January 8th, 2003) and the "Tax Code of the Republic of Kazakhstan" (as of December 10th, 2008)", and came into effect as of June 24th, 2014; operation under the new investment laws started January 1st, 2015.

The new investment laws include tax exemption for the corporate enterprise tax and the property tax, and the provision of an investment subsidy for up to 30% of employment costs for factory construction and purchases for investment equipment. The revision also comprises unification of investment application contacts (One Stop Service at Investment Committee) and simplification of procedures for acquisition of factory building land and expected entry of foreign capital into manufacturing industries in particular.

6) State of economic cooperation between Japan and Kazakhstan

A tax convention in December 2009 between Japan and Kazakhstan, a nuclear agreement in May 2011, and an investment agreement in October 2015, have been effectuated.

There are 43 local Japanese-affiliated companies, and 155 Japanese nationals [according to JETRO, as of October 1st, 2014].

As of 2014, export goods from Japan to Kazakhstan consist of automobiles (42.6%), artificial satellites (18.6%), copper tubes (11.9%), mining machinery (mechanical shovels) (7.2%), and automobile parts (car bodies) (2.3%). Those from Kazakhstan to Japan comprise ferroalloys (78.8%), petroleum and bitumen (14.2%), uranium compounds (2.9%), and metals (tantalum) (1.2%) [according to JETRO, as of 2014]. FDI from Japan amounts to $3 billion.[41]

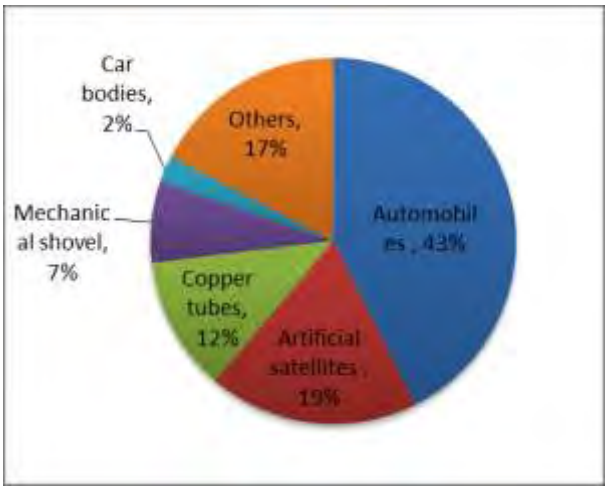



Figure 7-(3)-8 Exports from Kazakhstan to Japan

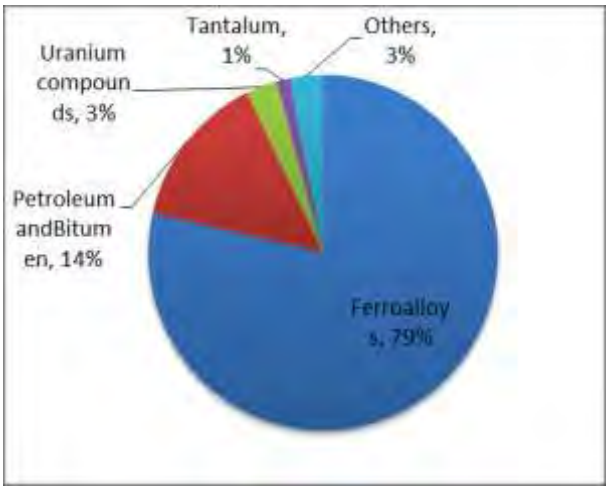



Figure 7-(3)-9. Export items from Japan to Kazakhstan

Source: JETRO

7) State of economic cooperation with countries other than Japan

Kazakhstan retains close economic relations with neighboring Russia, and takes part in all the CIS-related international organizations (such as the Eurasian Economic Union and Collective Security Treaty Organization) guided by Russia. Especially more recently, it has also placed heavier emphasis on relations with China, and joined the Shanghai Cooperation Organization from its founding. Additionally, it maintains favorable economic relations with the USA and EU, suggesting the pursuit of omnidirectional diplomacy. Kazakhstan also became a member of the World Trade Organization (WTO) at the end of November 2015.

[41] Ministry of National Economy of the Republic of Kazakhstan, Committee on Statistics

Table 7-(3)-1 General facts about Kazakhstan (as of Feb. 2016)

| | | | | | |
|---|---|---|---|---|---|
| General Facts | Area | Population | Capital | Official language | |
| | 272.49 ㎢<br>(7x that of Japan) | 17.3 million<br>(2014) | Astana | Russian | |
| | Ethnicity | Language | Religion | — | |
| | Kazakh, Russian etc. | Kazakh | Islam, Christianity, etc. | | |
| | Geographical characteristics: Large territory and wide regional variations | | | | |
| Economic indices | GDP per capita (USD) ※1 | Economic growth rate ※2 | Import value (USD) ※1 | Export value (USD) ※1 | |
| | 12, 276 USD (2014) | -9.7%<br>(2015 estimate) | 61.9 billion USD<br>(2013) | 88.7 billion USD<br>(2013) | |
| | Currency unit | Exchange rate | — | — | |
| | Kazakhstan Tenge (KZT) | 1 USD = 280.08 KZT<br>(Oct. 30, 2015) | | | |
| | Nominal GDP<br>( billion USD ) | 2010 | 2011 | 2012 | 2013 | 2014 |
| | | 148.0 | 188.0 | 203.5 | 231.9 | 212.2 |
| | Major exports ※3 | Petroleum and related commodities, natural gas, ferroalloys, chemical, machinery, wheat, wool, and coal | | | | |
| | Primary export counterparts | Italy (20%), China (12%), Holland (11%), Russia (8%), France (6%) | | | | |
| | Major imports | Machinery equipment, metal products, foodstuffs | | | | |
| | Primary import counterparts ※3 | Russia (33%), China (18%), Germany (6%), USA (5%), Ukraine (3%) | | | | |
| Relations with Japan | Export value to Japan ※4 | Major exports to Japan | Import value from Japan ※4 | Major imports from Japan | |
| | ¥79.75 billion (2014) | Ferroalloys, crude oil, raw oil, chemical products | ¥70.15 billion (2014) | Automobiles, car components, steel pipes, construction and mining machinery, rubber products | |
| | Principal treaty and mutual agreement | Kazakhstan investment agreement, signed in October 2014 | | | |
| | Number of Japanese-affiliated companies ※5 | 43 local Japanese companies (2014) | | | |
| Investment | Priority investment | Petroleum and natural gas, mineral resources, agriculture | | | |

| | | |
|---|---|---|
| policy | areas | |
| | Principal ministry | Ministry for Investments and Development |
| | Investment laws | Law of the Republic of Kazakhstan on Investments, Tax Code of the Republic of Kazakhstan |
| | Preferential treatment for foreign investment (in terms of taxes) | 10 year exemption from corporation tax, 10 year exemption from land tax, 8 year exemption from fixed property tax, subsidiaries for investment, free transfer of foreign currencies |
| Others | Primary physical distribution routes | Japan→(seaborne)→China→(railway)→Kazakhstan |
| | Financial environment | Policy interest rate: 16.0% (Oct. 2015) ※6<br>, consumer prices increase rate: 6.7% (2014) ※1 |

Sources:
※1: World Bank, 2015
※2: IMF, World Economic Outlook, Oct. 2015
※3: JETRO, Dec. 2015
※4: Ministry of Finance statistics, 2014
※5: MOFA, Kaigai-zairyu-houjin-suu chousa-toukei ("Statistics on the number of Japanese living overseas"), summary ed., 2016
※6: Trading Economics

⑤ Aid policies of Japan to Kazakhstan

In addition to Country Assistance Policies (CAP) defined by the Ministry of Foreign Affairs and Japan International Cooperation Agency (JICA), Kazakhstan is incorporated into the regional scheme of the Global Food Value Chain as a part of Central Asia.

The main emphasis of the Ministry of Foreign Affairs of Japan (MOFA), is put on upgrading economic infrastructure, particularly in terms of resources and energy development, with reference also to environmental conservation. This complements Kazakhstan's goals for a Green Economy through its "Kazakhstan 2050 Strategy and Principal Programs". JICA, on the other hand, has stressed human resource development in disaster prevention and countermeasures and energy-saving technology. Following the economic damage caused by the current low global prices for natural resources, JICA is deploying specialists in human resource development in production and quality management in response to the need for manufacturing industries and encouragement of small and medium-sized enterprises. Japan's Ministry of Agriculture, Forestry and Fisheries (MAFF) sets strategies for cold region agricultural production in Central Asia.

Table 7-(3)-2　Aid policies of Japan to Kazakhstan

| | | |
|---|---|---|
| MOFA | Country Assistance Policy (CAP) Basic Policy (excerpt) | ・ Upgrading of economic infrastructure<br>・ Environmental conservation (social development) |
| | CAP Priority Areas (excerpt) | ・ Resources and energy development<br>・ Environmental conservation and climate change mitigation |
| | "Central Asia plus Japan" Dialogue: The Sixth Tokyo Dialogue ※ | Projects proposed by specialists from government agricultural agencies of Kazakhstan:<br>(1) Logistic centers for agricultural products processing<br>(2) Establishment of cereal trading firms |
| JICA | Objective and principal measures | ・ Disaster prevention and countermeasures, energy-saving technology, human resource development in production and quality management |
| MAFF | Global Food Value Chain Strategy (excerpt) | Regional strategies (Russia and Central Asian countries):<br>Cold region agricultural production, irrigation, Information and Communication Technology (ICT), plant factory agriculture, high value-added production areas through installation of advanced technologies for quality management, food processing complexes, promotion of high value-added food value chain plans through the reorganization of distribution and sales networks such as for cold chains. |

※"Central Asia plus Japan" Dialogue: The Sixth Tokyo Dialogue: "Regional Development in Central Asia through Agriculture"

⑥ Entry and business activities of Hokkaido companies in Kazakhstan

1) Hokkaido interest in Kazakhstan and examples of cooperative projects

One example of achievements by a Hokkaido company in Kazakhstan is an agro-machinery maker, which started marketing in the south of the country. As a result of hearings and seminars held in Hokkaido, some companies expressed interest in Kazakhstan and other countries in Central Asia. In June 2015, there was a seminar on Kazakhstan in Sapporo, Hokkaido, with Mr. Kamohara, the Ambassador to Kazakhstan, invited.

One company has also cooperated in a training project for disaster prevention and road maintenance and management.

Table 7-(3)-3　Result of hearings in Hokkaido

| Industry sector | Overseas achievements | Interest, needs, and conditions for overseas expansion by Hokkaido companies |
|---|---|---|
| Food development | Cooperative research experience with Kazakh National Medical University | ・ Central Asia, Mongolia, and the Caucasus are less developed and suitable for penetration if accompanied by local partner<br>・ Characterized by research-mediated overseas promotion |
| Food processing machinery | Russia, China, ASEAN (Vietnam, Thai, Indonesia), Taiwan | ・ Fishery processing is favored over meat processing<br>・ Conditional that payment for workers should not be low-end. |

Table 7-(3)-4 Questionnaires at a seminar in Hokkaido (held in Nov. 25, 2015)

| Industry sector | Points to be cleared in Kazakhstan |
|---|---|
| Dairy products production | Hoping to expand our business with locally based dairy production technology into a country actively promoting dairy farming and milk products; wish to seek the possibility of cooperative research with agricultural academies and agro-research institutes. |
| Agricultural machineries | Hoping to make advances into Central Asia with potato cropping technology; wish to investigate available types of potatoes (for food, processing, or other uses), growing methods, sizes, management, cultivation situation, or soil quality of farmland. |
| Construction and infrastructure | Interested in the state of electrical energy supply, foreign exchange risk, and appreciation of natural energy applications in Kazakhstan. |
| Construction and infrastructure | Wish to know about environmental conservation and industrial waste management, and how Kazakhstan deems upgrading of environmental infrastructure and what it wants to start with; and how it evaluates Japanese techniques of garbage collection, resource recycling, and final disposal, and whether in need of such frameworks and know-how. |
| Comestible company | Wish to examine the possibilities for imports of those untapped food products and ingredients expected to be abundant there. |
| Food development | If able to find a candidate for partner agency, it would be possible to make inroads into the unexplored Central Asia region. |
| Tour agency | Wish to establish a high profile for Hokkaido while apparently few prefectures are promoting themselves in Central Asia. |

The Graduate School of Hokkaido University and Rakuno Gakuen University have concluded international and academic exchange agreements with the Graduate School of Kazakh National Pedagogical University and the Institute of Atomic Energy of the National Nuclear Center of Kazakhstan, and Al-Farabi Kazakhstan National University, respectively.

⑦ Results of on-site survey

1) Contention of on-site survey results

Affected by the extended drop in resource prices, Kazakhstan's economy introduced a floating exchange system in August 2015, but has since gone into an economic crisis after acute devaluation of its currency, the Tenge. On the other hand, it has shown an inclination toward manufacturing and agricultural sectors and small and medium-sized enterprises (SME), reflecting on the previous extreme dependency on the resource sector and large enterprises. Green Economy being one of keywords for the EXPO scheduled in 2017, it provides a great opportunity for Japan to promote its environmental and other pioneering technologies.

Nevertheless, since Russia, Germany, Turkey, and Korea have already entered this market, leaving Japanese companies behind with respect to prices, ingenious measures are required to narrow down target markets and develop entry strategies.

2) Issues for development and needs in Kazakhstan

a) Agriculture and livestock farming

The economic downturn forced Kazakhstan to review the agricultural sector. In January 2016, the "Law on Agricultural Cooperatives (Закон о Сельскохозяйственных Кооперативах)" [42] was enacted, and aims to encourage small-scale farmers to widen their organizational scale by facilitating participation in unions. Some cooperatives have already been established, and because participation is compulsory in order to obtain subsidies, it is expected that more farmers will join these associations and institutionalization will proceed. During the on-site survey, some cases of SME constructing new warehouses for vegetables such as potatoes while actively promoting mechanization through introducing the latest German equipment and machinery were observed. As for livestock farming, in recent years, there has been a tendency to aim more "upmarket" by importing Holstein cows, in place of the red cattle of the Soviet era, while seeking consultation to improve productivity, but, these days, the dairy production does not meet demand, and while shortages are covered by imports from China, some would like domestic production increases achieved through construction of new dairy facilities. There is also a limited demand for high-quality dairy products and secure naturally or organically produced milk.

Photo 7-(3)-1 German machine in warehouse

b) Energy

As Kazakhstan will host EXPO 2017, whose main theme is the environment, there is demand for overseas renewable energy and energy saving technologies, as well as industrial waste disposal and recycling, as in areas around large cities, waste landfills are still in wide use in spite of contemporary rapid growth.

Figure 7-(3)-2 Solar panel factory

3) Issues for promoting cooperation with private companies

Kazakhstan covers a vast area—approx. seven times as big as that of Japan—and thus the climate and industrial features differ significantly by region. Collecting specific and practical information on targeted regions to make inroads is hence necessary not only on a national scale, but also at the provincial and

[42] Source: Ministry of Agriculture of Kazakhstan websites
http://mgov.kz/proekt-zakona-rk-o-selskohozyajstvennoj-kooperatsii/

municipal levels. Depending on the sector, other countries such as Germany, Russia, Turkey and South Korea have arrived ahead, and it is thus necessary for Japan to distinguish itself or segregate market segments with each other in order to obtain a predominant position. For Hokkaido companies, seeking a share in niche and limited markets, or provision of package style operations, combining service and technical training with production may be required.

4) Responses at seminar

a) Seminar and questionnaire procedures

In response to the needs of Kazakhstan learnt through a series of research studies, we held a seminar in Kazakhstan with four companies from Hokkaido, and afterwards carried out a questionnaire survey to acquire more information.

The outcome of a questionnaire showed that 39 personnel (90.7%) of total 43 answered either "very satisfied" or "satisfied to some extent", and none who were "not satisfied".

Table 7-(3)-5 Overview of the seminar and questionnaire survey

| | |
|---|---|
| Date of the seminar | January 25th, 2016, Monday, 14:00~17:30 |
| Site of the seminar | Comfort Hotel / Astana, Kazakhstan |
| Methodology of questionnaire | Distribution of questionnaire sheets to the participants and collection after the seminar |
| Questionnaire target | 95 personnel from governmental or non-governmental organizations, and private corporations in Kazakhstan |
| Retrieved questionnaires | 54 (56.8%): Number retrieved/ number of targets × 100) |
| Affiliation of respondents | Officer of Kazakhstan agency: 1, private companies: 34, NGOs: 13, student: 1, unknown: 5 |

b) Purpose of participating the seminar (multiple answers)

"To obtain information on Japanese (Hokkaido) companies" was the primary answer, followed by "Considering business with Japanese (Hokkaido) companies".


Figure 7-(3)-10 Purposes of participating in the seminar

c) Industrial sectors of interest (multiple answers)

Primarily “agriculture and livestock farming” followed by “environment and energy”, and “foods/ food processing”.

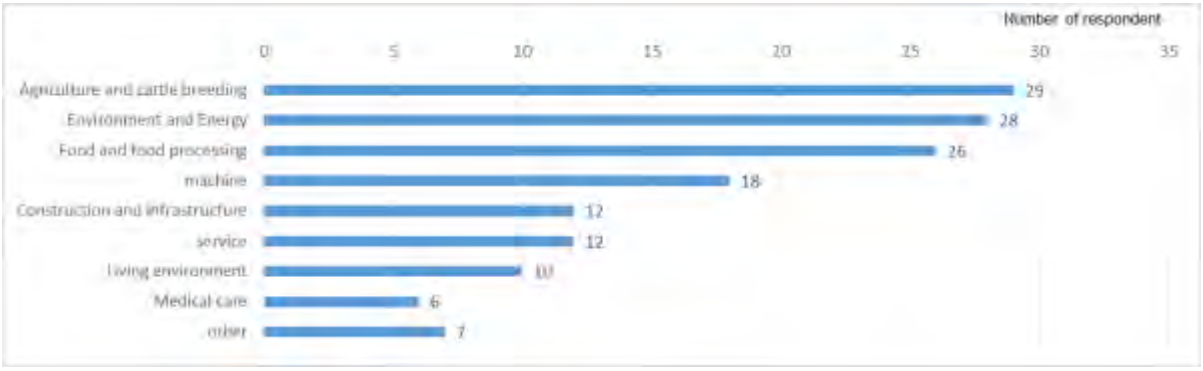



Figure 7-(3)-11 Industrial sectors of interest

Specific subjects of interest for each sector are as follows:

Table 7-(3)-6 Specific subjects of interest

| | |
|---|---|
| Agriculture and livestock farming | Organic crop production, greenhouse, livestock genetics research, potato harvesting machinery |
| Food/ food processing | Dairy products, vegetable food processing, production of ice cream waffle cup |
| Construction and infrastructure | Public transportation organs |
| Environment and energy | Waste recycling, solar batteries, garbage collection systems, solar generation systems, RPF (refuse plastic and paper fuel) production facilities, energy-saving technology, wind-power generation |
| Living environment | Modern technologies for residential construction, kitchens, living rooms and children’s room design |
| Machinery | Robot devices |
| Medical services | Medical products |
| Services | Educational systems, tourism development |
| Others | Applied microbiological products, company founding systems |

d) Obstacles for conducting business with Japanese companies (multiple answers)

"Lack of information" was the answer with largest number of votes, followed by "lack of inquiry contact"

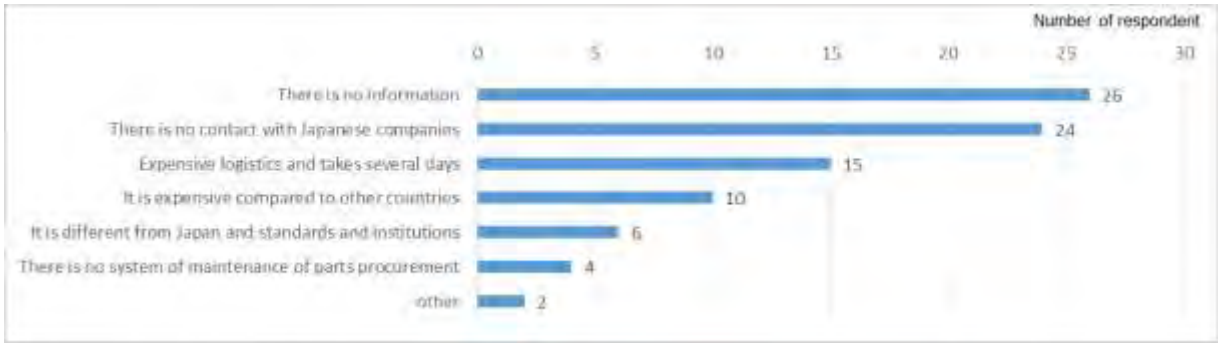



Figure 7-(3)-12 Obstacles for conducting business with Japanese companies

"Others" included "currency exchange" and "no obstacle", one each.

e) Prospects for business with Japanese companies

Many "want to find a partner company" and "need more practical information" as was the question for obstacles. Subjects for information sought range from "research on livestock genetics", "prevalence of powdered eggs in Japan", "recycling", to "solar and wind-power generation".


Figure 7-(3)-13 Prospects for business with Japanese companies

⑧ Future planning

As foreign capital has already penetrated the Kazakhstan market, designation of markets (segmentation), in which distinct technologies and products would be most effective, and appealing from a technical standpoint are essential, for Hokkaido companies to make inroads. For choosing markets, it is necessary to have market evaluation based on estimated demand and unit price, also taking into account geographical conditions and the business environment in the proposed areas and presence of other competitive firms. Secondly as for technical aspects, it may be effective to take advantage of such promotional methods already practiced locally as demonstrations, providing samples, and exhibitions. For Hokkaido companies, it is desirable to incorporate a strategy to keep prices at locally acceptable levels and to help support a product's technical appeal.

1) Case of agricultural machinery

As mentioned in the previous section "⑦－2) Issues for development and needs in Kazakhstan", there is a need for mechanization by small and medium-scale farmers in Kazakhstan. Although major makers of agricultural equipment from Russia, Belarus, and the USA are already operative, most focus on sizable machines directed at larger scale farmers. Mechanization has not yet benefitted smaller farmers with 5-15ha farmland, and harvesting work continues to be done by hand, hence being laborious and ineffective. Complaints are also heard from some farmers in regard to assistance with agricultural machinery, indicating the development of after-service support..

The average size of farmland per household in Hokkaido is 23.4ha, being 14.6-fold that of other prefectures, and mechanization has permeated [Department of Agriculture Hokkaido, 2014]. In particular, Hokkaido technology is characterized by compact models for harvesting, which are less expensive than larger ones and easier to operate and maintain, in addition to high durability and strong technical support realized through experience shared with clients in the vast and cold but also variable landscape of Hokkaido. Kazakhstan and Hokkaido share some common targeted crops such as potatoes.

In order for Japanese companies to examine the issues and solutions for operation in Kazakhstan, it is necessary to identify desirable specs for machines and collect information as to an acceptable range of prices for farmers. Supply of spare parts and maintenance services in case of malfunction and repair are also required. It is also desirable to implement an integrated approach to improve agro-productivity by combining relevant technologies concerning instruction for fertilizer use, agrochemical applications and financial management.

One outcome to be expected as a result of the introduction of compact machinery technology may be to liberate farmers from drudgery and enable more desirable working conditions adjusted to the harvesting season, which can also lead to reduced loss from wasted products. It also further promotes mechanization, expanded areas of farmland and the possibility of increasing the number of cultivated varieties of crops.

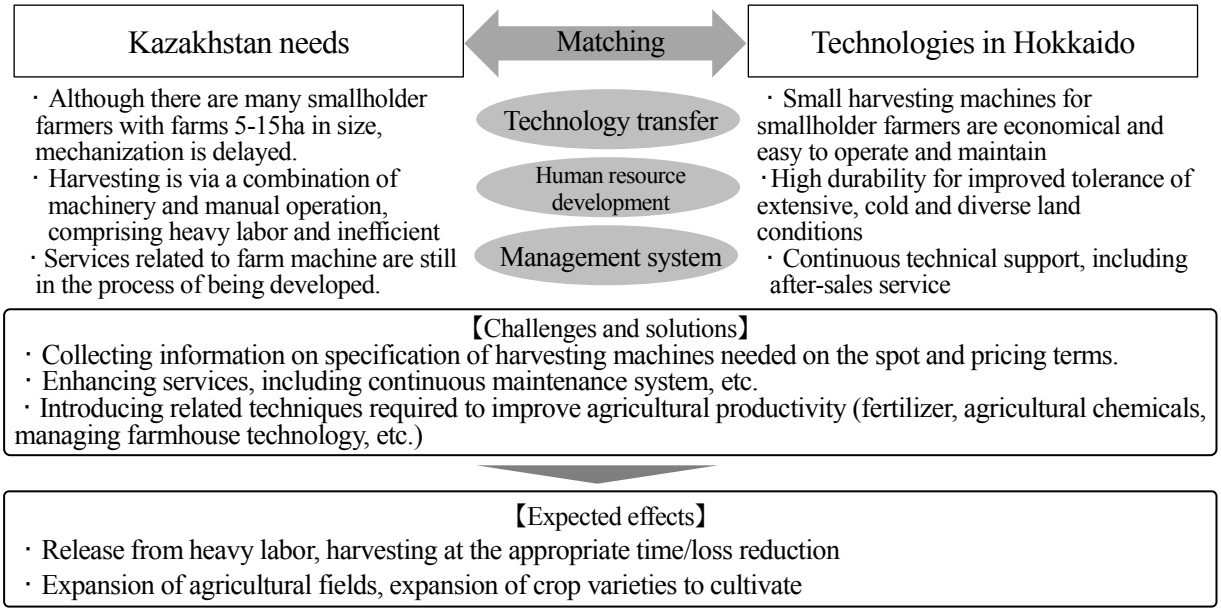



Figure 7-(3)-14 Business Development Plans (Agricultural Machinery)

2) Case of dairy farming

As mentioned in the previous section "⑦－2) Issues for development and needs in Kazakhstan", there is a need for increased production and safer or organic dairy products. In recent years, there has been a tendency to aim more "upmarket" by importing Holstein cows, in place of the red cattle of the Soviet era, while seeking consultation to improve productivity. According to on-site seminars, the number of cattle per farm household is about 700 on average, with some large-scale farmers exceeding 1500. But, these days, the production of dairy foods does not meet demand, and while shortages are covered by imports from China, some would like domestic production increases achieved through construction of new dairy facilities. There is also a limited demand for high-quality dairy products and secure naturally or organically produced milk.

Raw milk production in Hokkaido prefecture accounts for 52.1% of output, the largest share in Japan (MAFF, Livestock Industry Statistics, 2014. Expertise of Hokkaido in this area includes high-level management schemes ranging from quality management of dairy farming, stock husbandry management, to security and sanitary management, and branding of high-value added dairy products. Hokkaido has traditionally played a leading role as a stronghold of dairy production, but nowadays also is also evolving with respect to sextic industrialization[43] and marketing.

In order for Japanese companies to evaluate issues and solutions for operation in Kazakhstan, the introduction of an ongoing quality improvement ethos (KAIZEN) in dairy factories and other sites, husbandry management, security and sanitary management systems, and marketing methods for branding

[43] Sextic industrialization: To promote the formation of new industry, utilizing the local resources, or through unification of processing and sales of agricultural, forestry, and fishery production. [MAFF]

dairy products may be considered.

Technical implementation is expected to result in increased quantity and quality of dairy production, and further promotion of livestock farming.

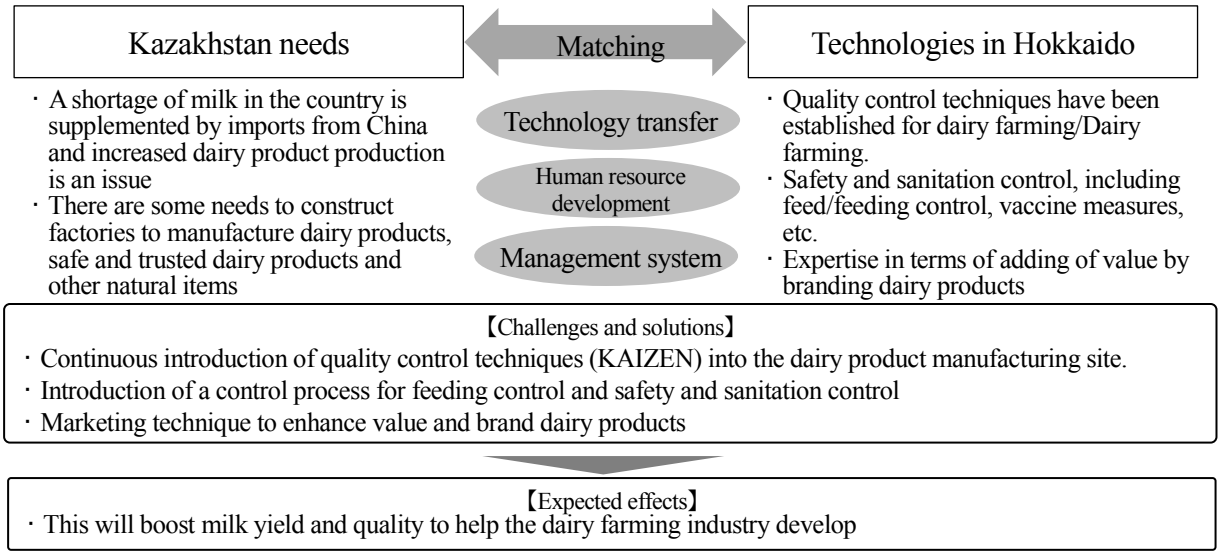



Figure 7-(3)-15 Business Development Plans (Dairy farming)

3) Case of solar photovoltaic

As mentioned in the previous section "⑦－2) Issues for development and needs in Kazakhstan", one of Kazakhstan's needs is to realize a Green Economy —the theme of EXPO 2017, through the introduction and promotion of energy-saving technology and renewable energy. In Kazakhstan, implementation of green energy is encouraged through "Kazakhstan 2050 Strategy and Principal Programs"[44], it is proposed to bring in solar photovoltaic and wind power generation. In 2015, a feed-in tariff (FIT) system was started, planning to have 50% of national energy consumption accounted for by alternative or renewable energy by 2050. There is an example of Astana Solar LLP manufacturing solar panels with technical assistance from France.

Hokkaido is active in power generation using natural energy, and solar photovoltaic and wind power generation ranks first nationwide on an output basis [Agency for Natural Resources and Energy, March 2013]. Technologies available in Hokkaido include double-sided solar panels that maximize generation efficiency by receiving sunlight on both sides of panels, synergetic power systems that minimize loss and lower costs by blending multiple energy sources, and environmentally responsible mounting with little leftover waste that can be set up in diverse site conditions including soft ground and slopes. These technologies are the fruits of constant technical refinement in Hokkaido, where resources of natural energy

[44]Source: Executive Office of the President official websites
( http://www.akorda.kz/ru/official_documents/strategies_and_programs )

abound.

As issues or solutions for Japanese companies considering operation in Kazakhstan, it will be necessary to have a better price advantage over the ongoing electricity sales price standard set through FIT (34 Tenge/kwh). In order to achieve this, it is necessary to demonstrate technical superiority over existing competition by making the technologies visible through trial production or test installations. In more concrete terms, it is necessary to provide "hard" equipment and operational systems along with "soft" aids like technical instruction for those local corporations, which have already employed the FIT system.

It may be pointed out that a possible effect of technology implementation would be an improved share of renewable energy by introducing non-conventional technology over existing competitors from Europe and other places. These technologies of Hokkaido would likely further contribute to the effective application of natural energy technology and stable electric power supply in Kazakhstan.

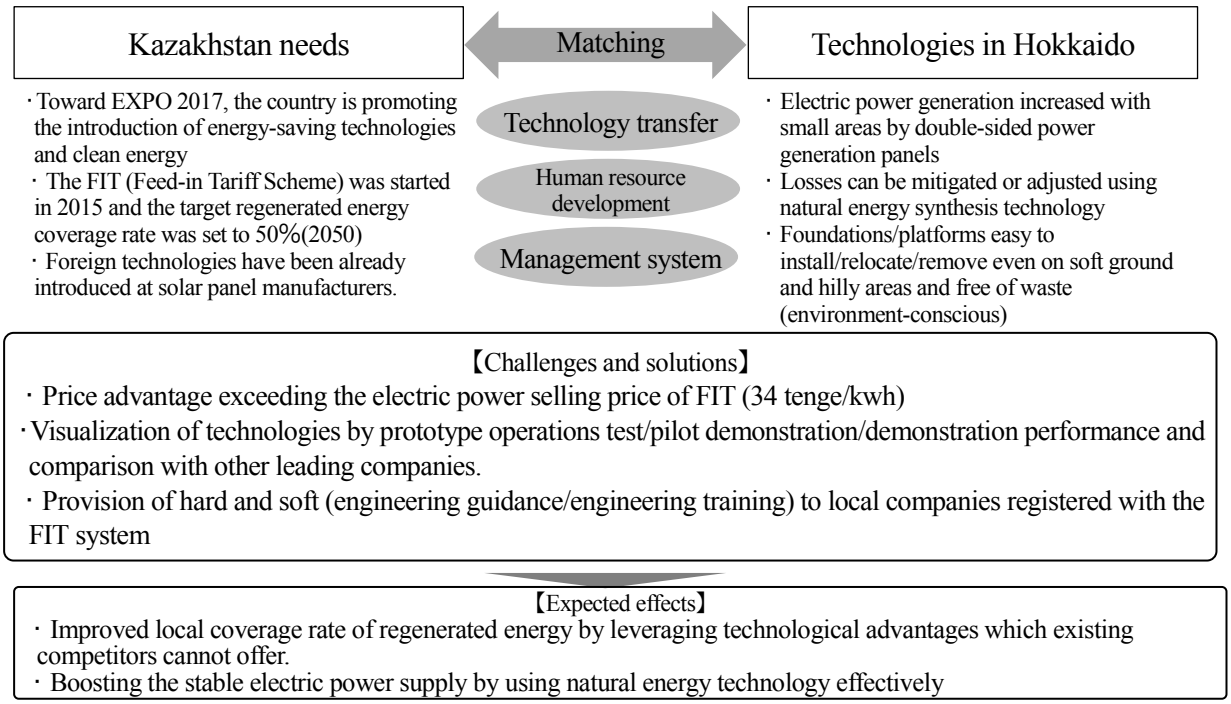



Figure 7-(3)-16 Business Development Plans (Solar Power Generation)

4) In the case of waste recycling

As mentioned in the previous section "⑦－2) Issues for development and needs in Kazakhstan", there is a need to remedy the low rate of recycling owing to the still prevalent landfill-based waste management system, despite the fact that the nation proposes the introduction of foreign capital advanced technology in order to realize Green Economy targets for EXPO 2017. Due to the lack of intermediate processing facilities, recycle and reuse have not progressed, and the recycling rate remains at 3%, according to the on-site hearing. It was also learned that waste materials having gone through initial processing are sent to

such places as Russia, so the waste management problem is not solved within the country. After the collapse of the Soviet Union, waste processing management organs were privatized, but most operations by small and medium-scale enterprises have three stages: carriage, separation-processing, and disposal, and are linked to landfills, while even in the capital city of Astana, recycling has made little progress.

Hokkaido boasts high awareness of environmental protection, which also serves as a tourism resource, and possesses know-how for commercialization of comprehensive waste management and recycling systems and operation, incorporating techniques to extract fuel from waste oil and plastics, environmentally oriented technology for melting treatment and processed water leaching prevention, and intermediate processing facilities.

In order for Japanese companies to understand the issues and provide for penetration into Kazakhstan, the provision of materials and intelligence for transition from landfill disposal to recycling would be worthwhile. More specifically, facilities and equipment, such as laboratory instruments necessary for recycling, coordinated with technical and specialized knowledge and instruction of operation methods, could be brought in. Since municipal authorities are involved in the local waste disposal management in Astana and elsewhere, joint proposals by companies and local governments in Hokkaido could also offer a possible approach.

With the implementation of such technology some alleviation of the current environmental burden can be expected along with more effective utilization of resources in the course of breaking away from the pattern of landfill disposal, fostering circulation-based waste management systems which lead to better reuse of waste and recycling.

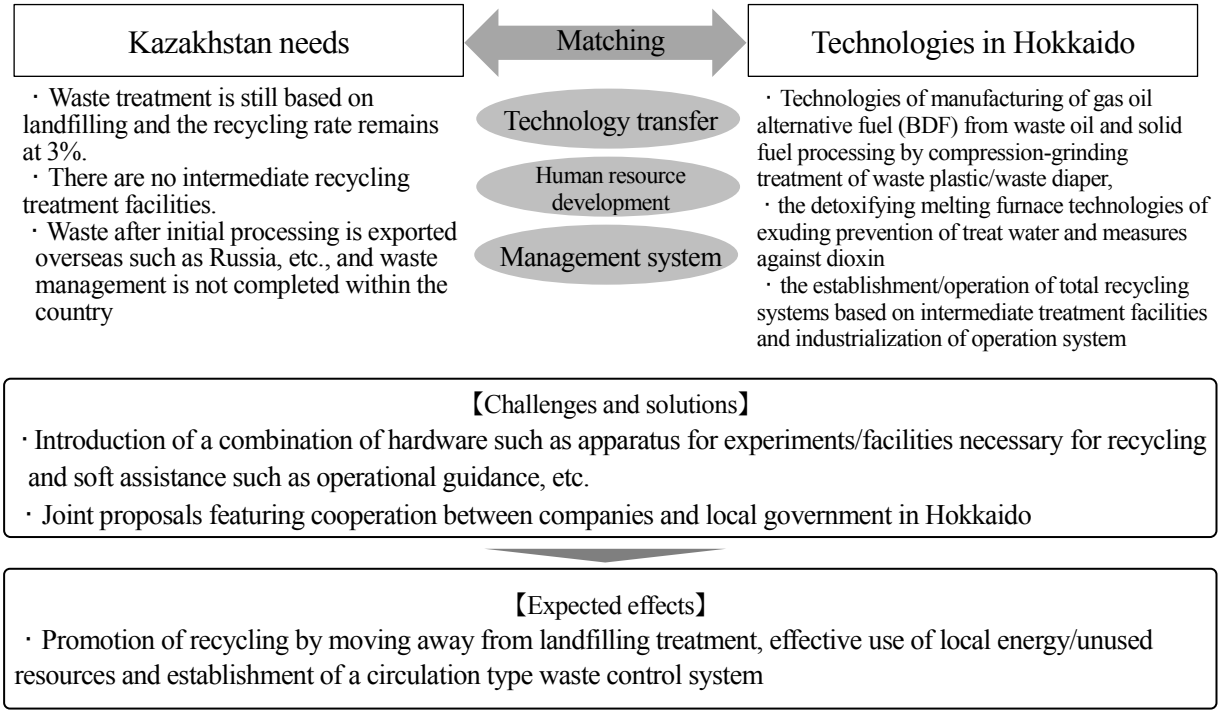



Figure 7-(3)-17　Business expansion plan (waste recycling)

(4) Uzbekistan

① Geographic features

Approximately 1.2 times Japan's area, Uzbekistan is a doubly landlocked country with a land area of 447,000 $km^2$, surrounded by landlocked countries in all directions, namely Kazakhstan in the north, Kirgiz and Tadzhikistan in the east, and Turkmenistan and Afghanistan in the south. Though located in inland areas, the country has been prospered as an oasis city on the Silk Road from ancient times. Furthermore, its agricultural production has been robust, including vegetables and fruits, because the country is endowed with green, bounded by such two large rivers as the Sir-Dar'ya River in the north and the Amu-Dar'ya River in the south.

From Japan to Uzbekistan, a transport of 40ft container generally takes a delivery route via China and Kazakhstan (about 28 to 37 days), via Russia and Kazakhstan (about 30 to 42 days), via Latvia (about 60 to75 days), and via Iran (about 50 to 60 days). The shortest distribution route is via China and Kazakhstan in terms of the number of days.

※The number of days required for a delivery are estimated as of 2012, based on "Facts about distribution in Uzbekistan" by JETRO and a daily CARGO on July 15, 2015.


Source: Ministry of Foreign Affairs

Figure 7-(4)-1 Location of Uzbekistan

② Climatic features

Tashkent, the capital of Uzbekistan, is located in latitude 41 degrees north, which is equivalent between the northern Aomori Prefecture and Hakodate city in Hokkaido in Japan. Compared with a climate in Sapporo city in Hokkaido, Tashkent has lower temperatures all year around, with a very little precipitation, particularly from June through September.

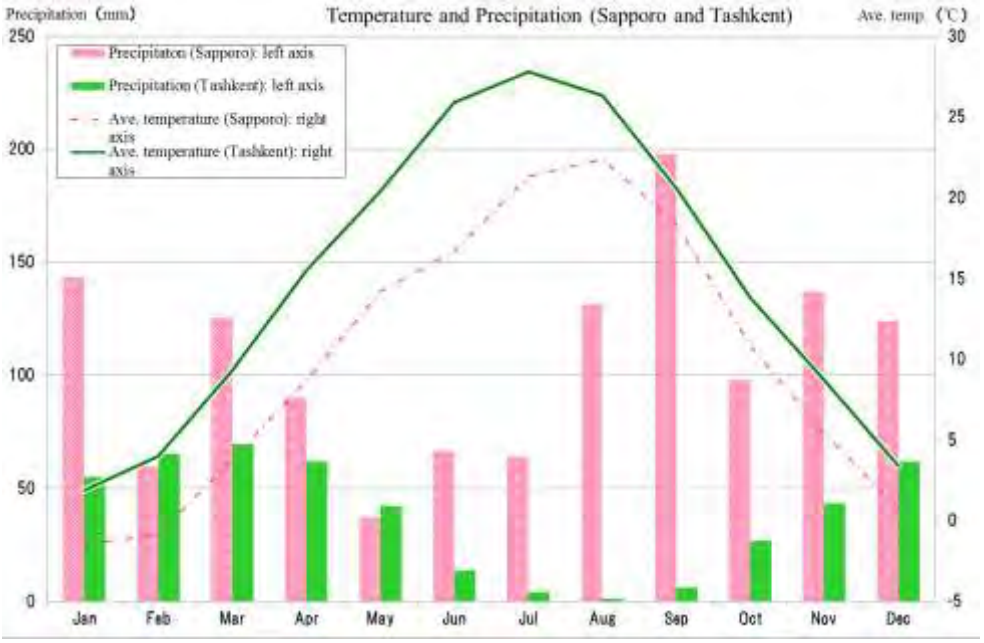



Figure 7-(4)-2 Temperature and precipitation in Tashkent

＊Prepared by HIT based on the data from January to December 2015 on the Website of Japan Meteorological Agency.

③ Administrative districts

Uzbekistan has a total of 14 administrative divisions, including 12 provinces, one autonomous republic (the Kara-Kalpak Autonomous Republic) and one special city (Tashkent). Major cities are Tashkent, the largest city in Central Asia and the capital of Uzbekistan (a population of about 2.35 million), Samarkand (a population of about 0.51 million), and Namangan (a population of about 0.48 million). ※Source: Department of Statistics of Tashkent (2014)

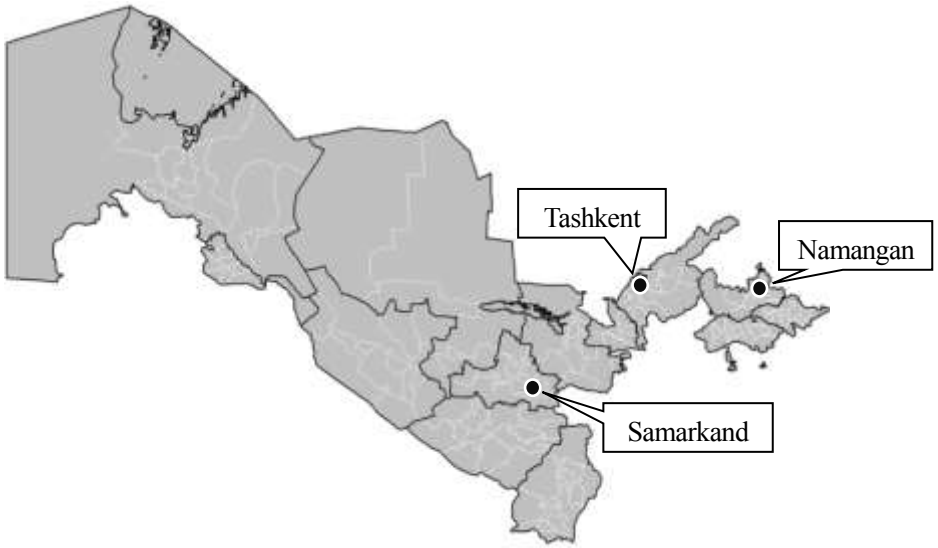
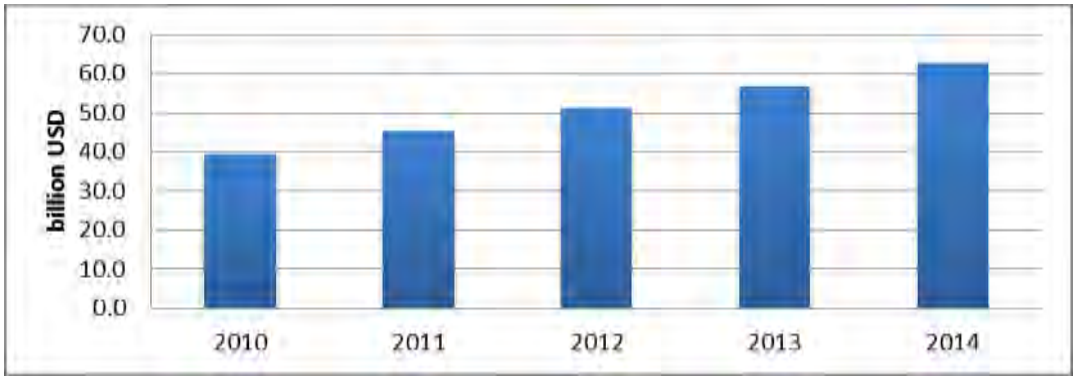



Figure 7-(4)-3 Map of Uzbekistan ＊Prepared by HIT

④ General condition of Uzbekistan

1) Gross Domestic Product (GDP)

In terms of a change of nominal GDP of Uzbekistan since 2010, the country has achieved stable growth, increasing by 8% annually from 39.3 billion USD in 2010 to 62.6 billion USD in 2014. Notably, preliminary GDP[45] in 2015 is reported 660 billion USD, further grown by 5.3% compared with the previous year.




Source: World Bank

Figure 7-(4)-4 Change in GDP of Uzbekistan

2) Industrial features

Sectoral shares of GDP in Uzbekistan include 18.5% in agriculture, 32.0% in the manufacturing industry and 49.5% in the service industry[46], respectively. Cotton production has been traditionally active in agriculture and manufacturing that includes mining is also a main industry as the country is rich in such mineral resources as natural gas, uranium and gold. However the government launched ministerial restructuring in 2010 in order to revive the industrial structure which depends on natural resources. Furthermore, it has been implementing the "Development Program for Industrial and Innovation Promotion, 2010-2014" and the "Program for Industrial Diversification, Modernization and Structural Reform, 2015-2019" (the Presidential Order No. 4707).

[45] IMF World Economic Outlook (October 2015)
[46] CIA world FACTBOOK 2014F

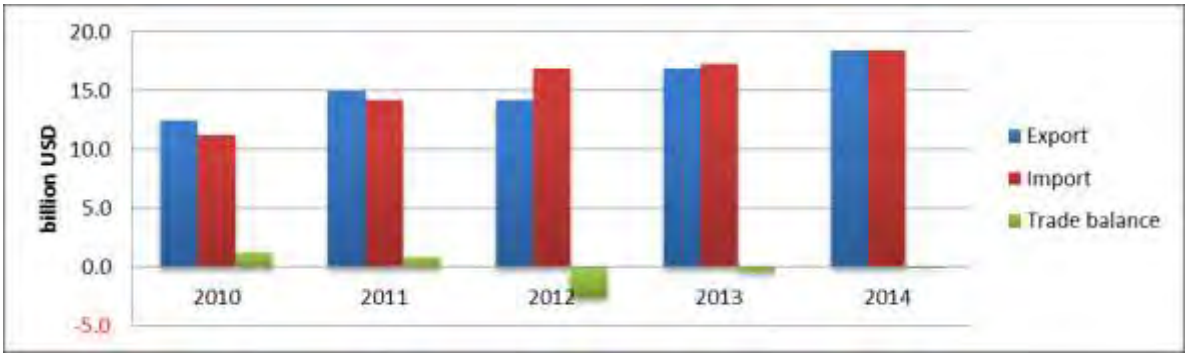
3) Trade

Uzbekistan has been promoting import substitution to replace import goods with local products. Trade is strictly controlled, posing a particular problem of foreign exchange that has caused a substantial gap between the government's official rate and the market rate, and the serious difficulty in converting the local currency to the foreign currency.

A trade balance has run a deficit (excess of imports) in a relative term since 2012. In contrast with a robust increase in the volume of imports, that of exports have been slightly changing, mostly achieving a trade balance.

Primary export goods include petroleum, gas, petroleum products, services, cotton textiles, food, and iron and non-iron metals. Major export partner countries are Russia, China, Kazakhstan, Turkey and Afghanistan. Primary import goods, on the other hand, include machinery and facilities, chemical products, food, iron and non-iron metals, and petroleum products. Major import partner countries are Russia, South Korea, China, Kazakhstan and Germany.

The volume of exports from Uzbekistan to Japan are 2.91 billion yen, and the primary export goods are gold and cotton fabrics. On the other hand, the volume of exports from Japan to Uzbekistan are 17.79 billion yen, and the primary export goods are automobiles and rubber goods[47]. Also, in terms of the investments from Japan in Uzbekistan as of 2015, 12 Japanese-affiliated joint corporations and 11 authorized Japanese-affiliated companies operate their business in such sector as the trade, transport services, tourism, health care service, machinery, metallurgy and light industry.



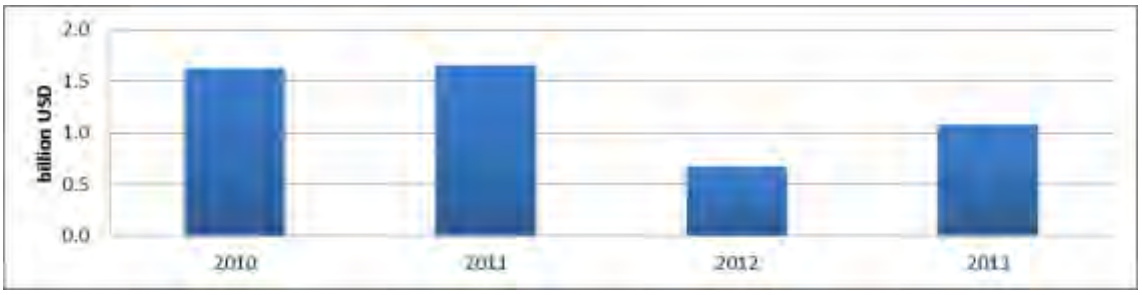

Source: World Bank

Figure 7-(4)-5 Change in Trade Volume of Uzbekistan

[47] Ministry of Finance, 2014

4) Foreign Direct Investment (FDI)

Although the direct foreign investments in Uzbekistan decreased below 700 million USD in 2012, it recovered to 1 billion USD in 2013 (see Table below). Uzbekistan has ranging restrictions against investments, for instance, compliance with standards of former Russia (GOST-R), high import tariff rate charged on products made other than in CIS countries, and strict control of remittance outside Uzbekistan. With the largest population in Central Asia, Uzbekistan has a potential market to invest, achieving a high growth rate. Nonetheless, its closed economic systems have resulted in an impediment for foreign investments.




Source: World Bank

Figure 7-(4)-6 Change in the Volume of Direct Foreign Investments in Uzbekistan

5) Principal overseas investment

Laws related to the investments in Uzbekistan are (1) a law for foreign investments, (2) a law for assuring and protecting rights of foreign investors, (3) a law for investment projects, and (4) a law for the free economic zones. Compared with 1993 when the country became independent, the tax burden imposed on corporate activities has been reduced approximately by one third in 2014. Also in regards to the permission procedures, of In recent years, it has abolished 160 authorization procedures and 19 types of license applications related to commercial activities. Furthermore, the environments for business activities and investments in Uzbekistan have been gradually improved whereby it has largely reduced frequencies of reports on statistics, tax and financial accounts required by competent authorities.

To invite foreign companies, economic zones have been developed, including Navoiy Free Industrial and Economic Zone, Jizzax Free Industrial Special Zone, and Angren Free Industrial Special Zone, which offer preferential treatment including tax exemption.

6) State of economic cooperation between Japan and Uzbekistan

In 2008, for the purpose of promoting trade and investments between the two countries, the Japan-Uzbekistan Network for Investment Environment Improvement was created to facilitate project coordination and enhance interactions between their ministries, government agencies, and public organizations, and companies related to trade and investments. In February 2011, furthermore, the top executives of the two countries agreed to strengthen their Strategic Partnership, aiming toward the next milestone of cooperation. In this context, economic ministers of the two countries signed on an agreement to expand trade and investments. On October 25, 2015, Prime Minister Abe attended in a business forum held in Tashkent city, meeting with President Karimov to have a discussion.

7) Economic partnerships with neighboring countries other than Japan

In January 2006, Uzbekistan gained a membership of Eurasian Economic Community (EAEC), but deferred its membership in October 2008. EAEC was established in 2000 and Russia, Belarus, Kazakhstan, Uzbekistan, Kirgiz and Tajikistan were member states. However, it suspended its activities when the Eurasian Economic Union (EEU) was established in 2015.

Uzbekistan became a member of the Collective Security Treaty Organization (CSTO) in May 1992, defected in April 1999, joined it again in August 2006, and defected again in June 2012. CSTO was established in May 1992 by six countries that became independent from the former Soviet Union for national security and territorial integrity of its member states and, as of 2015, six countries—Russia, Belarus, Kazakhstan, Kirgiz, Tajikistan and Armenia—are members.

Figure 7-(4)-1 Overview of Uzbekistan (February 2016)

| | | | | | | |
|---|---|---|---|---|---|---|
| General outline | Land area | Population※1 | | Capital | | Official language |
| | 447,400 square kilometers | 30.7 million (2014) | | Tashkent | | Uzbek |
| | Ethnicity | Language | | Religion | | — |
| | Uzbek（78.4%） | Uzbek | | Sunni Islam | | |
| | Geographic feature: One of the only two doubly landlocked countries in the world, bordering on all Central Asian countries | | | | | |
| Economic indicators | GDP per person ※1 | Economic growth ※2 | | Import volume ※1 | | Export volume ※1 |
| | 2,038 USD (2014) | 5.3% (estimated value, 2015) | | 184 billion USD (2014) | | 184 billion USD (2014) |
| | Currency unit | USD exchange rate | | — | | — |
| | Sum (UZS) | 1 USD = 2,790.99 Sum (as of December 31, 2015) | | — | | — |
| | Nominal GDP ※1 (billion USD) | 2010 | 2011 | 2012 | 2013 | 2014 |
| | | 39.3 | 45.3 | 51.2 | 56.8 | 62.6 |
| | Major export goods ※3 | Petroleum, gas, petroleum products, services, cotton fabrics, food, iron and non-iron metals | | | | |
| | Major export partners※3 | Russia, China, Kazakhstan, Turkey, Afghanistan | | | | |
| | Major import goods ※3 | Machinery and facilities, chemical products, food, iron and non-iron metals, petroleum products | | | | |
| | Major import partners※3 | Russia, South Korea, China and Kazakhstan, Germany | | | | |
| Relationship with Japan | Export volume for Japan※4 | Major export goods for Japan ※4 | | Import volume from Japan ※4 | | Major import goods※4 |
| | 2.91 billion yen (2014) | Gold, cotton fabrics | | 17.79 billion yen (2014) | | Automobiles, rubber products |
| | Major treaty and agreement | Signing on the Japan-Uzbekistan Investment Agreement, August, 2008 | | | | |
| | Japanese-affiliated company ※5 | 17 Japanese companies (2014) | | | | |
| Investment policy | Priority investment sector | Underground resources, chemicals, construction and construction materials, electricity and machinery, automobiles, medicine and medical equipment, food | | | | |
| | Key government agency | Ministry of Foreign Economic Relations, Investments and Trade of the Republic of Uzbekistan | | | | |
| | Outline of the laws related to investments | Law for foreign investments, law for assuring and protecting rights of foreign investors, law for investment projects, law for the free economic zones | | | | |
| | Preferential treatment for foreign investments (tax) | Exemption of corporate tax | | | | |

| | | |
|---|---|---|
| Other | Major distribution route | Japan→（sea transport）→China →（railway）→Kazakhstan→（railway）→Uzbekistan |

Source:. JETRO, Website of the Ministry of Foreign Affairs of Japan, Website of the Uzbekistan Embassy of Japan, , National Statistics Committee of Uzbekistan, and also prepared by the study team based on a local hearing survey

※1: the World Bank data

※2: An estimate of the World Economic Outlook (IMF) as of October 2015

※3: National Statistics Committee of Uzbekistan

An estimate of the World Economic Outlook (IMF) as of October 2015

※4: Trade statistics, Ministry of Finance (2014)

※5: MOFA, Kaigai-zairyu-houjin-suu chousa-toukei (“Statistics on the number of Japanese living overseas”), summary ed., 2015

⑤ Aid policies of Japan to Uzbekistan

The Ministry of Foreign Affairs (MOFA) and JICA have prepared assistance policies for Uzbekistan. The Global Food Value Chains Strategy of the Ministry of Agriculture, Forestry and Fisheries (MAFF) targets the Central Asia which includes Uzbekistan.

Policies of MOFA and JICA reveal underlying priorities to specifically support the economic infrastructure including electric power and transport, institutional and human-resource development, and the agricultural sector in Uzbekistan. For the agricultural sector targeted by MAFF's said strategy, the sixth "Central Asia plus Japan" Tokyo Dialogue (March 18, 2014) touched on a cooperation for production of vegetables and fruits as well as potatoes.

Table 7-(4)-2 Assistance Policies of Japan for Uzbekistan

| | | |
|---|---|---|
| MOFA | The overall goal of the Country-specific Assistance Policy (extracts) | ・Development of the economic infrastructure<br>・Assistance for institutional development to improve the business environments<br>・Assistance for agricultural development |
| | The medium goal of the Country-specific Assistance Policy (extracts) | ・Upgrade and development of the economic infrastructure (Transport and energy)<br>・Human resource development (in the private sector)<br>・Assistance for the agricultural and health and medical sectors. |
| | "Central Asia plus Japan " Dialogue (the sixth Tokyo Dialogue)※ | Projects proposed by Uzbek experts of the agricultural agency<br>（1） a project to increase production efficiency of vegetables and fruits<br>（2） a project to improve potato seeds and increase production efficiency |
| JICA | Target and priority policy | ① Economic infrastructure development in the electric power and transport sectors, particularly targeting modernization of thermal power generation plants<br>② Assistance for institutional and human-resource development including the business personnel training to foster the private sector<br>③ Strengthening water use associations that help increase rural incomes, improving water resource management, and expanding health, medical and educational services |
| MAFF | Global Food Value Chain Strategy (extracts) | Regional strategy (including Russia and Central Asia)<br>Developing distribution and marketing systems related to value-added production, food-processing industrial areas, and cold chains, applying such advanced technologies as cold-areas agriculture, irrigations, ICT （Information and Communication Technology）, plant factories, and quality control, which are ultimately intended to create high-value-added food value chains. |

※"Regional Development Achieved through Agriculture in Central Asia" in the "Central Asia plus Japan" Dialogue in the sixth Tokyo Dialogue

⑥ Awareness level of Hokkaido companies in regard to Uzbekistan

As a result of interviews and seminars carried out in Hokkaido, some of the local companies showed their interests in Uzbekistan and Central Asia. In March, 2013, the Embassy of Uzbekistan in Japan and related organizations held an Uzbekistan Business Forum in Sapporo city in Hokkaido.

Furthermore, JICA Hokkaido International center hosts training programs focusing on agriculture and roads for which companies in Hokkaido and related organizations are cooperating.

Table 7-(4)-3 Outcomes of Interviews with Companies in Hokkaido

| Type of business | Interest in and needs for overseas expansion of Hokkaido companies |
|---|---|
| Sewing industry | Display showcases in exhibitions starting in Hong Kong, China (Shenyang), South Korea and Uzbekistan |
| Manufacturing machinery and metal products | Interested in the business starting in Uzbekistan, Turkmenistan, Armenia, and Azerbaijan |

Table 7-(4)-4 Questionnaire in the Seminar in Hokkaido (held in November, 2015)

| Type of business | Check points in Uzbekistan |
|---|---|
| Dairy product manufacturing | Seeking for the business to start in a country which intends to expand dairy farming and the milk industry, by introducing locally applicable manufacturing technologies of dairy product. At the same time, exploring a potential partnership with an agricultural academy in Central Asia and/or agricultural research institute. |
| Agricultural Machinery | There is desire to use potato harvesting technology to expand into Central Asian regions. There is a need to investigate the type of potato (for eating, for processing or other use), planting methods, dimensions, controls, harvesting circumstances, soil quality of growing habitat and other information. |
| Food business | The country seems to have underdeveloped food and untapped materials of various kinds, which is worth exploring potentials for product imports. |
| Food development | Central Asia is an untapped region. The business potential depends on a locally available agency. |
| Travel agency | Few prefectures in Japan have targeted Central Asia for their business promotion, which is advantageous for Hokkaido to take the initiative to make it well known. |

Higashikawacho in northern Hokkaido known as a town of photography has active communication with Uzbekistan. In August 2015, a coordinator for international relations who graduated from Tashkent State Institute

of Oriental Studies started working there.

Two members of a delegation of Uzbekistani foreign ministry and the University of World Economy and Diplomacy visited the Graduate School of Economics and Business Administration of Hokkaido University to exchange views and have discussions as part of the university's Project for Promotion of Global Human Resource Development 8nitobe College) (in March 2015).

⑦ Results of on-site survey

1) Contention of on-site survey results

At present, the business environments in Uzbekistan tend to be exclusive against foreign companies, and are hardly able to describe "open" for their business. In particular, a regulatory control of foreign currency is a major impediment for companies. The regulation does not allow the Japanese suppliers to receive advance payment in the full amount, while also a letter of credit (L/C) does not function. Depending on an amount of money, a purchase of foreign currencies may often take several months. The Japanese products are less likely to have advantages in terms of price and speediness. Because of the doubly landlocked country, moreover, the access to distribution networks is more restricted than in Central Asian countries.

On the other hand, Uzbekistan has rich human resources of the younger generation. There are a quite a few human resources who are future engineers with much interest in Japan's technologies and Japanese-Russian interpreters who have studied at Japanese schools through JICA's grant aid programs.

Furthermore, revealed in 2015, the "Program for Industrial Diversification, Modernization and Structural Reform, 2015-2019" (the Presidential Order No. 4707 on March April, 2015) intends to invite foreign investments, and investment promotion is also expected in the future.

A concrete desired way of entering Uzbekistani market is to have local excellent human resources as partners and demonstrate that their technologies and products can function and contribute significantly in the country as much as possible. The local interviews identified potential needs in such sectors as agriculture, and construction and infrastructure. Given the fact that Uzbekistan has sustained the high growth rate as a whole, broader need finding, including other industrial sectors, may be feasible.

2) Issues for development and needs in Uzbekistan

a) Agriculture and stock farming

According to hearings of Tashkent local tractor manufacturers, about 88% of the crops are harvested manually, which indicates the compelling needs for agricultural machinery. In fact, it was found out that a local agency had imported and sold agricultural Machinery made

Photo 7-(4)-1: On-site visit (farm machinery manufacturer)

in China and Belarus. However, farmers in general do not know much about the quality of machinery, and are unable to offer a guarantee for a lease agreement. Thus, they may have further needs of receiving such services related to machine operation and maintenance as well as related training. Moreover, training of agricultural production techniques, for instance, know-how on planting and cultivation of crops, is essential to achieve more from mechanization. This indicates broader needs of technical cooperation to promote mechanized farming.

As for dairy farming, the agricultural production modernization and technological innovation program 2012-2016 was formulated in 2012 (Gazette No.5 of 2012 of the Senate of the Republic of Uzbekistan) as a policy on agricultural production. The country has a tendency to introduce meat and dairy product processing technologies and know-how from overseas for dairy farming development. In the hearing with Uzbekistan chamber of commerce and industry, they also expressed their intention of its development based on experiences of foreign countries.

b) The construction and infrastructure

In Uzbekistan, the construction sector has become one of the principle industries in the course of its economic growth. According to an interview with a local construction company, there are as many as 31 design companies owned by the government and 700 private counterparts. Specifically, local needs are identified in such areas as earthquake resistance, fire resistance and energy saving. However, highly specialized engineers have moved overseas after the collapse of the Soviet Union, resulting in the slow technical development of the sector within Uzbekistan as of today.

Photo 7-(4)-2: On-site visit (a construction company)

In addition, the infrastructure sector has potential needs in heating and renewable energy. Since 2015, heating systems across the country are being replaced under the Modernization Program that requires central heating systems to be substituted with individual heating systems. The previous heating systems have ranging problems that low water pressure of hot-water pipes causes a low temperature in the room, the hot-water quality is low, and the systems are not controllable. On the contrary, the country will have controlled individual heating systems. As for renewable energy, power supply methods are expected to be diversified in line with the promotion of industrial diversification and modernization and structural reform. The survey team confirmed with local construction companies an example of solar panels being used by hospitals and stock farming facilities for such reasons that they are surrounded by a desert.

3) Issues for promoting cooperation with private companies

The coping with foreign currency restrictions will become more important in the Uzbek markets. Thus, companies are desired to fully discuss ways to collect funds based on collaboration with local partner

companies and mutual public-private partnership by making an appeal about their high technological capacity. It is practical to obtain a market share gradually with a strategic marketing, starting with trial sales and product demonstration. This may be better carried out when worked together with a partner company operating with a local license, which must be competent in appropriately assessing the desired technology.

4) Responses at seminar

a) Seminar and questionnaire procedures

In response to the needs of Uzbekistan learned from the series of survey, a seminar was held in Hokkaido with four local companies. A questionnaire survey was also conducted after the seminar to obtain more information.

As a result of the questionnaire in the local seminar described below, 22 out of 27 respondents (81.5%) indicated the event were "Very satisfactory" and "Generally satisfactory," when asked to what extent they were satisfied with it. None responded "Unsatisfactory."

Table 7-(4)-5 Overview of the seminar and questionnaire survey

| | |
|---|---|
| Date of the seminar | Thursday, January 28, 2016 14:00-17:30 |
| Site of the seminar | KOKHAN Hall (International Business Center 9F) / Tashkent, Uzbekistan |
| Methodology of questionnaire | Distribution and collection of questionnaires for participants in the seminar (after closing the event) |
| Questionnaire target | Organizations including government agencies, companies, and NGOs in Uzbekistan |
| Retrieved questionnaires | 35, 83.3%（No. of responses received÷No. of targets×100） |
| Affiliation of respondents | 1 respondent from the Uzbek government agency, 27 from companies, 2 from NGOs and others, 5 unknown |

b) Purpose of participating the seminar (multiple answers)

The largest number of respondents indicated that they were "considering business with the Japanese companies (in Hokkaido) in the future", followed by "seeking for information on the Japanese companies (in Hokkaido)."


Figure 7-(4)-7 Purpose of Participation in the Seminar

c） Industrial sectors of interest (multiple answers)

The largest number of respondents indicated they were interested in “machinery”, followed by “food and food processing.”

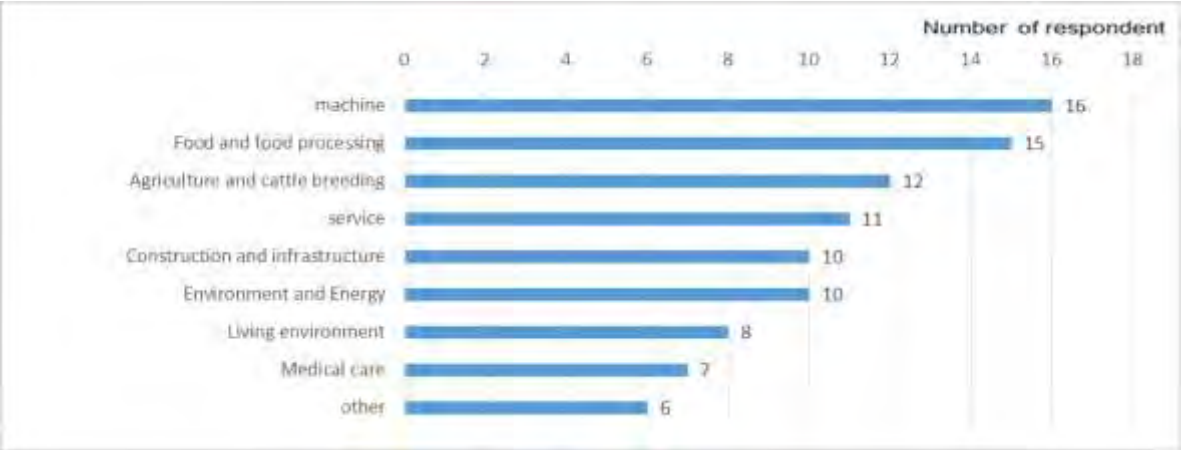



Figure 7-(4)-8 Industrial Sectors of Interests

The specific interests of each sector are as follows.

Table 7-(4)-6 Specific Interests

| | |
|---|---|
| Agriculture and cattle breeding | Maintenance techniques on irrigation, drainage and farms |
| Food and food processing | Machinery and equipment for manufacturing dairy products made in Japan, organic foods, import of dairy products from Japan |
| Construction and infrastructure | Test machine of concrete strength, construction technologies, water gates |
| Environment and energy | Solar panels, heat insulating films, energy-saving technologies, biogas-related equipment, resource-saving power supply switch, renewable energy, recycling of wastes, heat pumping |
| Living environment | Heating facilities, boilers, panel heating |
| Machinery | Robot machine (technology), water pumping system, and packaging machines |
| Medical care | — |
| Services | Catering, show business, Japanese-style health recreation center, office rental<br>Lodging services, 100-yen store, department store |
| Other | — |

d) Obstacles for conducting business with Japanese companies (multiple answers)

The largest number of respondents indicated “lack of information,” followed by “no business liaison available with Japanese companies.”

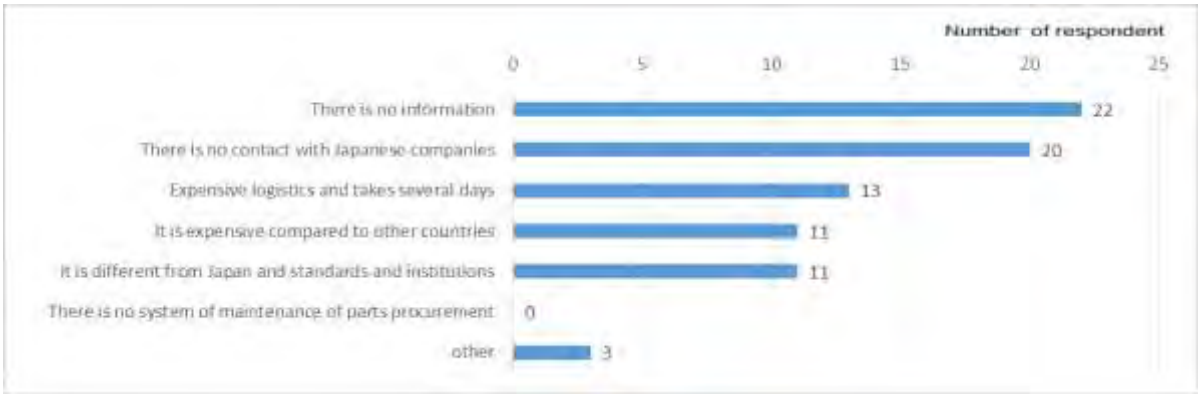



Figure 7-(4)-9 Problems in Starting Business with Japanese Companies

e) Prospects for business with Japanese companies

The largest number of respondents indicated that they "wish to find a partner company," followed by "wish to start business as soon as possible."


Figure 7-(4)-10 Future Business with Japanese Companies

⑧Future planning

Uzbekistan has the largest population in Central Asia of about 30 million (accounting for approximately 45% in the total population in Central Asia). The market has stably sustained 8% of high economic growth annually for the last five years until 2014 (a growth rate of 8.1% in 2014 (World Bank)). In particular, such sectors as agriculture, and construction and infrastructure which underpin the business operations have increasing potentials. These sectors are the principal industries in Hokkaido. The country has also attractive markets in other industrial sectors which are likely to grow in the future.

A precondition for a market entry in Uzbekistan is to gain a market share by appropriately responding to needs of local companies. A solid business base, though on a small scale, will lead to develop the market, as the entry becomes demanding for the rival companies. Many companies in Hokkaido are operating on the medium and small scales, and this will turn out to be advantageous because their businesses can start without entailing low price competitions and mass production.

1) Case of agricultural machinery

As mentioned in the previous section "⑦－2) Issues for development and needs in Uzbekistan", there is a need for mechanization and local application of related technologies and services in Uzbekistan. Although agricultural Machinery made in China and Belarus has been imported and sold in the country, some already require replacement of parts in six years or so. They are not satisfactory in terms of durability and quality, given that agricultural Machinery made in Japan has at least twenty years of durability. According to a local tractor manufacturer, about 88% of the farm operations are carried out manually, farmers may seek for mechanization. At the same time, mechanization must accompany with technical training that covers the entire farming process from planting, cultivation and harvest.

In Hokkaido, a cultivation area per farming household is 23.4 ha, which is 14.6 times as large as other prefectures in Japan, where mechanization has been advanced (the Agricultural Administration Division of Hokkaido, 2014). In particular, the small- and medium-sized harvesting machines, which is a Hokkaido-based technology, have different models tailored to various farmers and type of farms. The small- and medium-sized agricultural Machinery is lower cost than the large-sized counterparts, while also easy to operate and maintain. Thus, small- and medium-scale farmers have the merit to use them. Farm machine manufacturers in Hokkaido have continuously improved durability and technical services, resulting in high quality products.

In addressing challenges associated with their business expansion in Uzbekistan, Japanese companies must start collecting information on various local farming practices. They need to research the condition of farms in different regions, a harvest time and methods, as well as use and maintenance of agricultural Machinery, ultimately preparing for a plan to solve identified problems. In addition, it is desirable to apply wide-ranging farming techniques, such as supplying spare parts and after-sales services during machine

failure and repairs, building a maintenance mechanism, applying fertilizers and agricultural chemicals, and training farming techniques.

As a result of applying these techniques, the most suitable agricultural Machinery as well as the related techniques tailored to diverse farming practices will become available, leading to mitigate farmers' intense manual labor and enable farming appropriately scheduled for the best timing of harvest. This will result in reducing loss due to wasting crops and increasing the variety of cultivated crops and the farming areas.

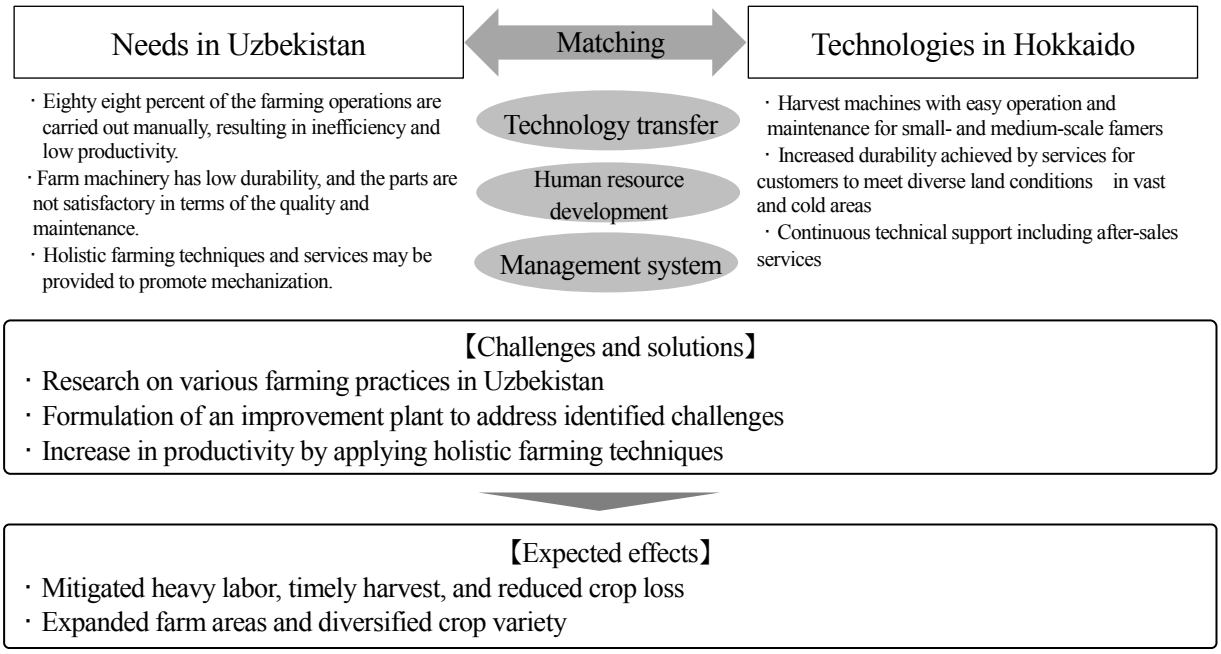



Figure 7-(4)-11 Business Development Plan (Agricultural Machinery)

2) Case of dairy farming

As mentioned in the previous section "⑦－2) Issues for development and needs in Uzbekistan", under the agricultural production policy there are intends to develop dairy farming by localizing foreign technologies and know-how on processing of meat and dairy products in Uzbekistan.

Accounting for 52.1%, Hokkaido has the top share of raw milk production in Japan (Livestock Statistics 2014, MAFF). Hokkaido's technologies are marked by the advanced control of processes related to the quality, breeding, and safety, and also by branding of high-value added dairy products. Hokkaido has been leading Japanese dairy farming as a long-established dairy production center. In recent years, it has developed itself by the "sixth industrialization"[48] and marketing, and thus is able to provide a holistic assistance in the dairy farming sector.

In addressing challenges associated with their business expansion in Uzbekistan, the Japanese companies

[48] The sixth industrialization refers to integrating production of agriculture, forestry and fisheries and processing and marketing as well as creating new industries using local resources (MAFF).

may be able to apply wide-ranging technologies and know-how, such as quality control techniques (KAIZEN) applied to manufacturing and processing practices in dairy product plants, process control of breeding, and safety and hygiene, and marketing strategies for high-value and branded dairy products.

As a result of applying these techniques, the dairy farming and dairy product sectors in Uzbekistan will be able to holistically practice Hokkaido's dairy-product processing technologies, controlled processes on the product quality and breeding, and branding and marketing strategies. This will lead to increasing the amount of milk and improving the product quality, resulting in making high-quality and high value-added dairy products broadly available and further promoting the dairy farming.

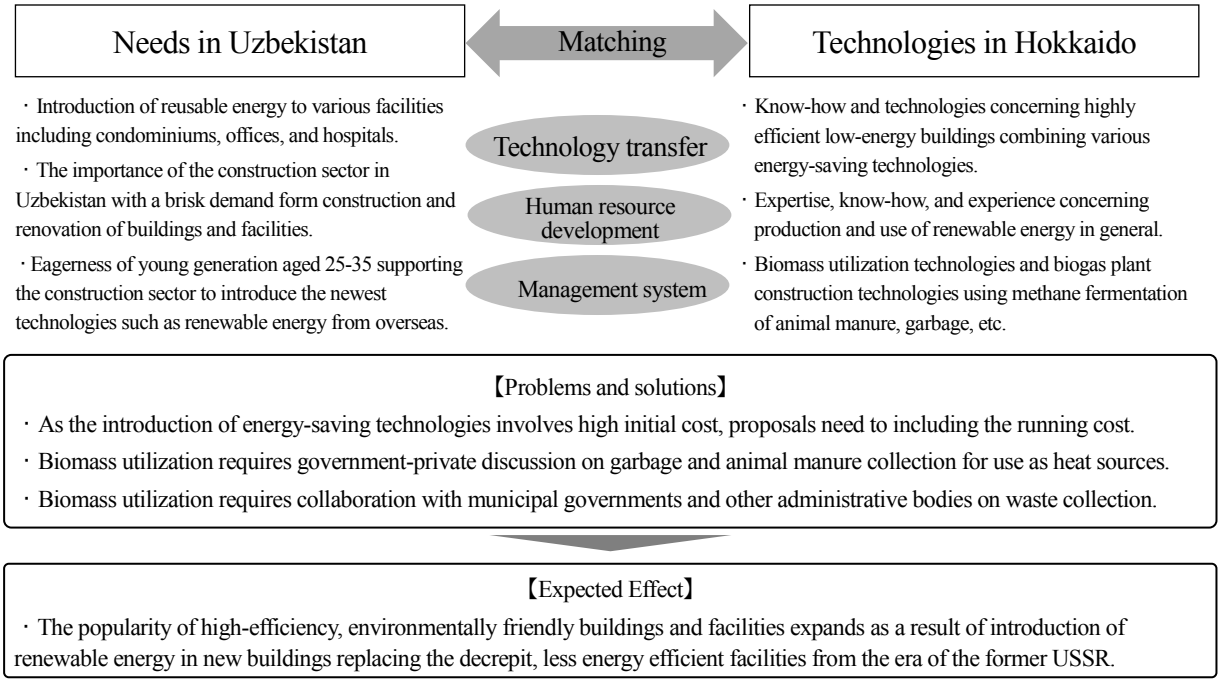



Figure 7-(4)-12 Business Development Plan (Dairy Farming)

3) The Case of Renewable Energy

As mentioned in the previous section "⑦－2) Issues for development and needs in Uzbekistan", In Uzbekistan, the power supply methods are expected to be diversified to support industrial diversification and modernization and structural reform in Uzbekistan. According to a local constructor, there are cases that renewable energy has been introduced in some buildings constructed to replace the decrepit buildings from the era of the former USSR, and it has been confirmed that solar panels are used at some hospitals and stock farming facilities. The people supporting the construction sector after the collapse of the USSR are the relatively young generation aged 25 to 35, and they are eager to introduce the newest technologies such as renewable energy from overseas.

Hokkaido has a record of vigorous power generation using abundant natural energy, and is ranked first in Japan in solar power generation and wind power generation on an output basis (Agency for Natural

Resources and Energy, March 2013). Hokkaido also has the know-how and technologies concerning highly efficient buildings combining various energy-saving technologies such as underground heat and ventilation systems, which are used in collective housing buildings, office buildings, schools, and other large facilities. It also has technologies and experience in the design and construction of plants for heat and power generation using biogas from garbage and animal manure.

Problems for Japanese companies considering overseas expansion and the solutions to them: Because energy-saving technologies are characterized by the high construction cost in initial investment and the low running cost, it is necessary to provide proposals based on the total cost. Because the collection of garbage used as the heat source in biomass utilization is often conducted by administrative bodies such as municipal governments, it is necessary to consider government-private collaboration concerning the method and procedures of collection, legal regulations, etc.

Expected effect expected of the introduction of technologies: Diversification of the power supply method, Contribution to the distributed power sources and stabilization of industrial activity are considered to expand as a result of introduction of renewable energy in new buildings replacing the decrepit, less energy efficient facilities from the era of the former USSR.

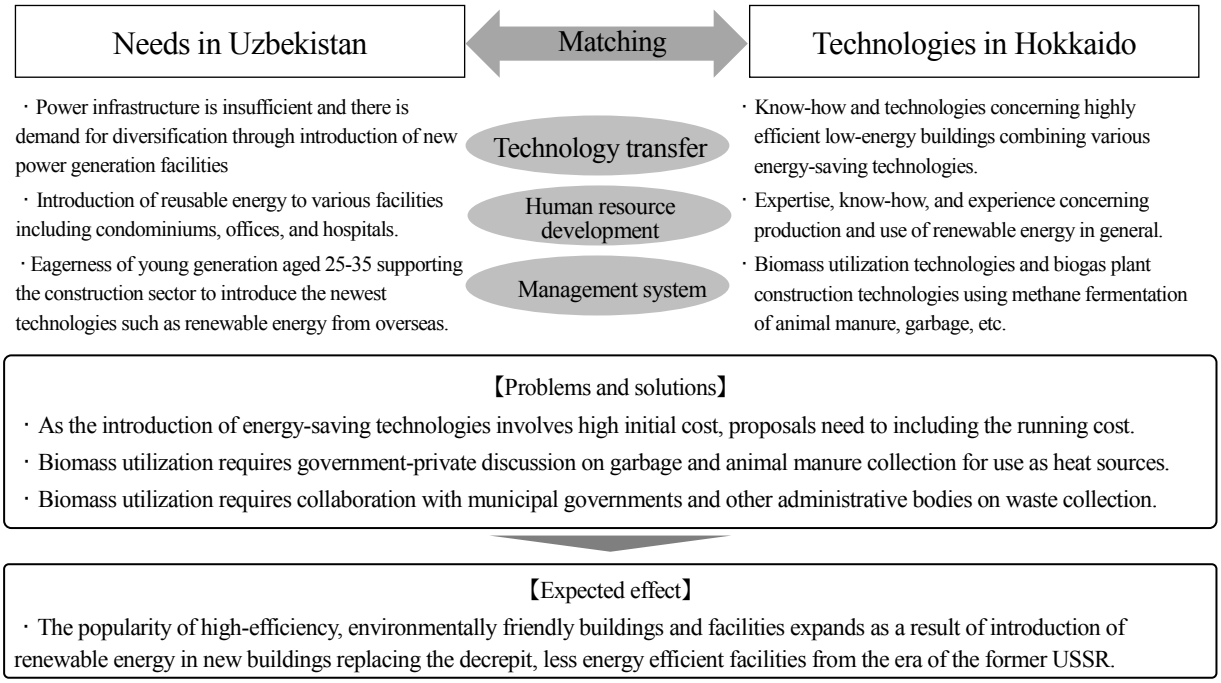



Figure 7-(4)-13 Business Development Plan (Renewable Energy)

4) The Case of Heating Equipment

As mentioned in the previous section "⑦－2) Issues for development and needs in Uzbekistan", In Uzbekistan, Uzbekistan side needs the introduction of individual heaters for households linked to the renewal of central heating systems. The central heating systems from the era of the former USSR have

many problems such as the deterioration of pipelines, low water pressure of hot water pipes, poor quality of hot water, non-controllable systems, and heavy environmental burdens such as air pollution. Uzbekistan has a policy for the reduction of electric power consumption and invitation of overseas investment stated in "The Program of Measures for Structural Reforms, Modernization and Diversification of Production for 2015-2019" (Decree of the President of the Republic of Uzbekistan No, 4707 dated March 4, 2015), and the works to replace heating systems across the county has begun in 2015. As households are going to purchase standalone heating systems in this process, a mass demand is likely to be produced in the future.

Heating systems have been developed as an essential housing-related technology in Hokkaido with its cold climate. While coal-fueled heating was used in Hokkaido until the 1960s, the conversion of heat sources to kerosene and gas and further innovations have led to the achievement of high heating efficiency and low environmental burdens. Individual heating equipment with low environmental burdens is used widely in houses as a technology suitable to cold-climate housing.

Problems for Japanese companies considering overseas expansion and the solutions to them: Replacement of household heating equipment needs to be planned considering air pressure and floor area (about 71 $m^2$ in average). Check for legal regulations and the differentiation from the products from China, Russia, Italia, and other leading competitors are indispensable.

Expected effect of the introduction of technologies: The widespread use of controllable heating systems in households will achieve comfortable home heating in cities and all over the country, leading to reduction of energy loss and prevention of air pollution.

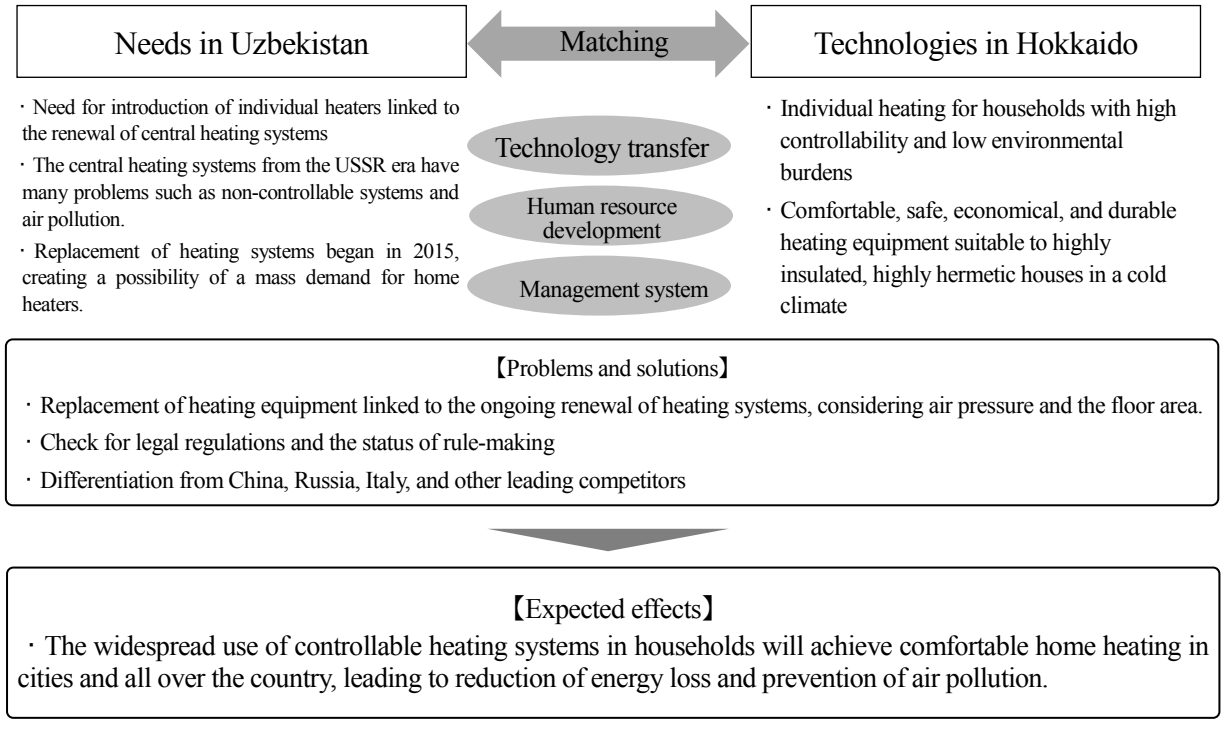



Figure 7-(4)-14 Business Development Plan (Heating Equipment)

(5) Armenia

① Geographical features

Armenia is located between latitudes 38° and 42°N and longitudes 43° and 47°E in the south Caucasus of Western Asia (Hakodate city in Hokkaido lies at 42° N). Armenia is bordered by Georgia, Iran, Azerbaijan, and Turkey and due to political issues, commodity distribution is harnessed to Georgia in the north and Iran to the south. Territorial area is 29,800 ㎢, and 90% of the land is at high altitudes between 1000-3000m. The largest plain of the country is the Ararat basin, where the capital city of Yerevan is located, and the soil is fertile. Underground, three tectonic plates —Arabian, Eurasian, and African merge, and thus earthquakes frequent the landscape.


Source: Ministry of Foreign Affairs

Figure 7-(5)-1 Location of Armenia

② Climatic features

Armenian climate is steppe climate in lowland areas and subarctic humid climate in highland areas according to Koppen climate classification[49]. The nation's largest plain is the Ararat Basin where the state capital of Yerevan is situated. Thus, the capital is also steppe climate and it has hot summer and cold winter because it is highland basin. In Armenia the average temperatures in January and July in the plains are -5 and 25℃, respectively; in lower mountains at altitudes between 1000-1500m, -10 and 20℃; and in higher mountains at 1500-2000m, -14 and 16℃.

Rainfall is less in the lowlands and greater in the highlands with a range of annual average precipitation between 200-900mm. In the Ararat basin, for instance, the figure is 200-250mm, whereas it is 500mm on lower plateaus, and 700-900mm at higher elevations. Even in the mountains in winter, heavy snow as in

[49] The climate classification is decided based on a simple calculation with two variables of climate and precipitation. However, attention needs to be paid that climate changes based on topography and other surrounding environment.

Hokkaido rarely occurs.


| | IAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ave. precipitation (mm) | 21.8 | 26.8 | 36.6 | 54.7 | 71.1 | 58.2 | 32.6 | 26.8 | 23.8 | 40.1 | 30.6 | 21.5 |
| Ave.temperature(℃) | -6.2 | -4.5 | 0.3 | 7 | 12 | 16 | 19.6 | 19.5 | 15.2 | 9.2 | 2.4 | -3.1 |

Source：weatherbase（http://www.weatherbase.com/）

Figure 7-(5)-2　Average monthly temperature and average monthly precipitation in Armenia (left axis: mm, right: ℃)[50]

③Administrative districts, etc.

There are 11 administrative areas, including the Gegharkunik district, which has an enclave in Azerbaijan. The capital city of Yerevan is also regarded as one administrative region. According to data from the United Nations Population Fund, of three million residents, 1.06 million people are concentrated in the capital Yerevan although the actual population may be considerably smaller according to some local sources. The discrepancy as pointed out at an on-site hearing was due to the difficulty of accounting for Armenian emigrants overseas in Russia, the USA, Georgia, France and Germany, believed to number more than seven million —a network that is one of the strengths of this country.


Figure 7-(5)-3　Administrative districts of Armenia

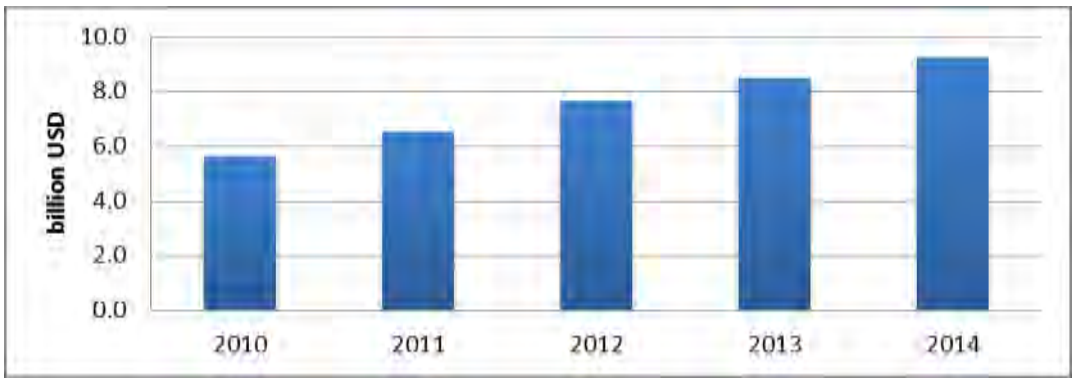
Source: Tourism Armenia http://www.tourismarmenia.org/

[50]Temperature: Average of the past 49 years in 7 cities; Precipitation: 29 year average in 7 cities.

④ General condition of Armenia

1) Gross Domestic Product (GDP)

The state of nominal GDP since 2010 saw (USD) $9.3 billion in 2010, and $10.9 billion in 2014. The average annual growth rate of GDP from 2010 to 2014 was 4%, but a quick estimate for 2015[51] shows it stagnant at $10.6 billion. The year 2016 is expected to be worse due to the effects of Russia's faltering economy.




Source: World Bank

Figure 7-(5)-4 Transition of nominal GDP in Armenia

2) Industrial features

A breakdown of Armenia's GDP shows 21.9% agriculture industry, 31.5% manufacturing industry, and 46.6% service industry. Main industries are mining, agriculture, jewelry (diamond) processing, IT and tourism.

Mines have been developed since the time of the former Soviet Union era as the country is rich in such mineral resources as molybdenum, iron ore, aluminum and uranium. Mainly produced goods are cotton, vines, and vegetables. Once acclaimed as the "Silicon Valley of the USSR", high-level research and education have carried on, with some success in the semiconductor industry, parallel computation, and software development.

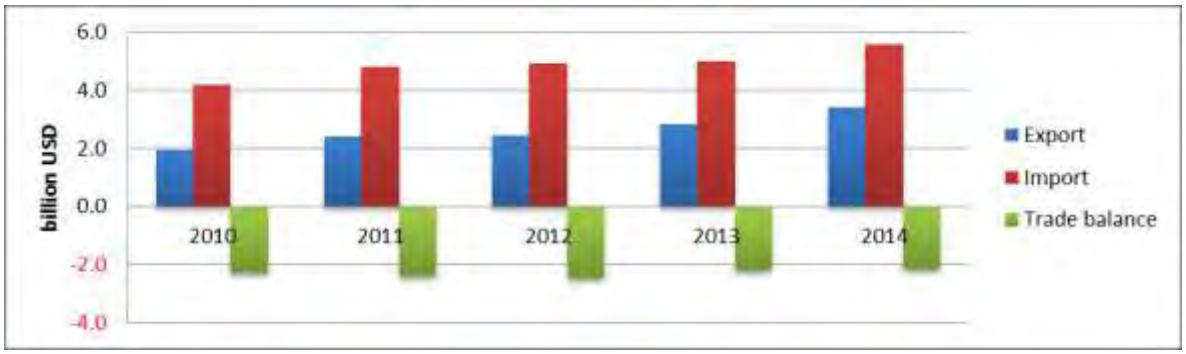
3) Trade

Trade balances in recent years have been consistently unfavorable (import surplus). As export and import values remain unchanged, the trade deficit is also static.

Major export goods are molybdenum and other minerals, sulphur and other earths, iron ores, fuels, processed foods, alcoholic and non-alcoholic beverages. In 2014 the major export counterparts are Russia

[51] World Bank, 2016

(308.3 million USD, 19.9%), China (171.0 million USD, 11%), Germany (158.6 million USD, 10.2%), Canada (93.3 million USD, 6.0%) USA (91.4 million USD, 5.9%) and Bulgaria (85.6 million USD, 5.5%).[52] In 2014 the major import goods, on the other hand, are animal and vegetable oils and fat, tobacco, medical products, cosmetics and other daily commodities. Major import counterparts are Russia (1,122.9 million USD, 25.4%), China (416.9 million USD, 9.4%), Germany (283.3 million USD, 6.4%), Turkey (232.3 million USD, 5.2%), Iran (206.5 million USD, 4.7%) and Ukraine (201.6 million USD, 4.6%).[53]

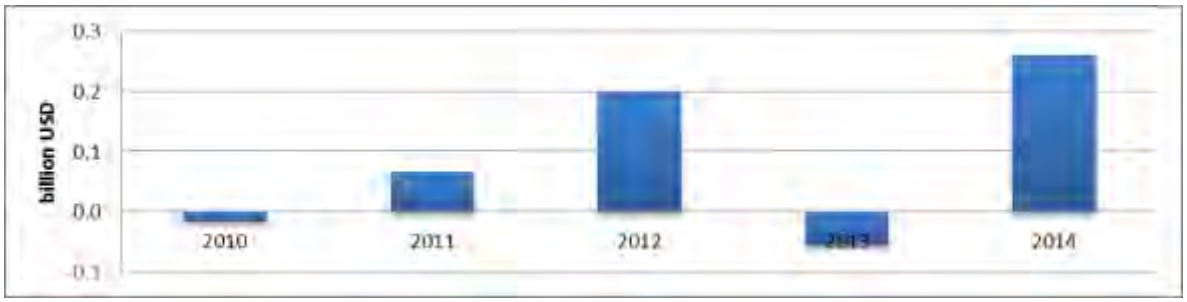



Source: World Bank

Figure 7-(5)-5 Changes in the value of Armenia trade

4) Foreign Direct Investment (FDI)

Recent foreign direct investments (FDI) showed a steady $500 million annual average. Currently, the development of tungsten and other mineral resources, information technology and tourism services attract attention as an investment target. Major countries investing in Armenia are Russia, France, Greece, the USA, Lebanon, Germany and Argentina.




Source: World Bank

Figure 7-(5)-6 Transition of FDI in Armenia

[52] Statistical yearbook of Armenia, 2015, National Statistical Service of the Republic of Armenia
[53] Statistical yearbook of Armenia, 2015, National Statistical Service of the Republic of Armenia

5) Principal overseas investment

Laws concerning foreign capital were enacted in 1994, under which preferential treatments for investment include: unlimited foreign shareholding, export tax exemption, unrestricted foreign exchange, unrestricted profit transfer, import tax exemption for individual enterprises on essential facilities, semi-finished products, or raw materials, profit tax exemption for the initial two years and 50% deduction for the following eight years after starting investment.

In 1998, Armenia Development Agency (ADA) dedicated to private operation was established by Learning and Innovation Lending (LIL) proposed for overseas investment and export facilitation, and has engaged in fostering the private sector. Investment and export enhancement strategies were formulated by the agency, and a relatively free outward investment system (Open-door Policy) among CIS companies was introduced.

The state government also actively promotes the induction of foreign capital enterprises and foreign capital through development of free economic zones for high-tech industries (Hi-Teck FEZ).

6) State of economic cooperation between Japan and Armenia

The value of exports from Japan to Armenia totaled ¥1.17 billion, with major export items being construction and mining machinery and electrical equipment, whereas the value of exports from Armenia to Japan amounted to ¥970 million. Export goods include chemical products, organic compounds, and tobacco.[54]

7) State of economic cooperation with countries other than Japan

Armenia has been an official member of WTO since 2003. Although stress has been given to the consolidation of economic linkage with Europe, in September 2013, President Sargsyan initiated the aforementioned programs, and announced Armenian participation in the customs union led by Russia. Afterwards, in January 2015, it joined the Eurasian Economic Union ushered in by Russia, forming a common economic sphere with Belarus, Armenia and Kyrgyzstan, seeking an environment, in which goods, people, capital and services move freely.

On the other hand, economic cooperation with Europe has continued, and in January 2014, Armenia, along with Georgia and Moldova, was designated as a recipient of GSP plus (Generalized Scheme of Preferences Plus) by the EU, through which preferential duties are applied on 6000 items, or 65% of the EU tariff classifications.

[54]Ministry of Finance Japan, 2014

Table 7-(5)-1 General facts about Armenia (as of Feb. 2016)

| | | | | | | |
|---|---|---|---|---|---|---|
| General Facts | Area | Population ※1 | | Capital | | Official language |
| | 29,800 ㎢ | 3 million (2014) | | Yerevan | | Armenia |
| | Ethnicity | Language | | Religion | | — |
| | Armenians (97.9%) | Armenia | | Christianity | | |
| | Geographic features: Dominated by mountain ranges and highlands, where 90% of the land exceeds 1000m in altitude. | | | | | |
| Economic indices | GDP per capita (USD) ※1 | Economic growth rate ※2 | | Import value (USD) ※1 | | Export value (USD) ※1 |
| | 3,620 USD (2014) | -8.9% (estimated value, 2015) | | 56 billion USD (2014) | | 34 billion USD (2014) |
| | Currency unit | USD exchange rate | | — | | — |
| | Dram (AMD) | 1 USD = 483.61 Dram (as of December 31, 2015) | | | | |
| | Nominal GDP ※1 (billion USD) | 2010 | 2011 | 2012 | 2013 | 2014 |
| | | 9.3 | 10.1 | 10.0 | 10.4 | 10.9 |
| | Major exports | Processed foods, alcoholic or non-alcoholic beverages, sulphur and mineral materials, iron ore, fuel | | | | |
| | Primary export counterparts | Russia, Bulgaria, Belgium, Iran, the USA | | | | |
| | Major imports | Cereals, animal and vegetable oils and fat, tobacco, medical products, cosmetics and other daily commodities | | | | |
| | Primary import counterparts | Russia, China, Germany, Ukraine, Turkey, Iran | | | | |
| Relations with Japan | Export value to Japan ※3 | Major exports to Japan | | Import value from Japan ※3 | | Major imports from Japan |
| | 970 million yen (2014) | Chemical products, organic compounds, tobacco | | 1.17 billion yen (2014) | | Construction and mining machinery, electrical equipment |
| | Principal treaty and mutual agreement | Agreement on Technical Cooperation between the Government of Japan and the Government of the Republic of the Armenia signed in June 8, 2005 | | | | |
| | Number of Japanese-affiliated companies ※4 | 1 Japanese-affiliated company (2014) | | | | |
| Investment policy | Priority investment areas | Agricultural products | | | | |
| | Principal ministry | Armenian Development Agency | | | | |
| | Investment laws | “Open-door” Policy, No restrictions on foreign capital | | | | |
| | Preferential treatment for foreign investment (in terms of taxes) | – | | | | |
| Others | Primary physical distribution routes | Japan(by sea: Mediterranean →Aegean →Black Sea)→Georgia→ (overland)→Armenia | | | | |

Source:
※1: World Bank, 2015
※2: IMF, World Economic Outlook, Oct. 2015
※3: Ministry of Finance statistics, 2014
※4: MOFA, Kaigai-zairyu-houjin-suu chousa-toukei ("Statistics on the number of Japanese living overseas"), summary ed., 2015

⑤ Aid policies of Japan to Armenia

Following the inauguration of an Armenian Embassy in Tokyo in 2010, a Japanese Embassy was established in Yerevan in 2015, while economic and cultural exchanges are expected to become more active in years to come. In 2015, a Japanese film festival and a series of cultural events were held to celebrate the opening of the Japanese Embassy, and interest in Japanese culture is now growing in Armenia thanks to information made available.

International assistance from Japan to Armenia is founded on experience in Japan with disaster prevention and promotion of small and intermediate-scale enterprises. Also projects related to landslide countermeasures, local branding and product development through the "One Village One Product" concept have been carried out under JICA.

Table 7-(5)-2 Aid policies of Japan to Armenia

| | | |
|---|---|---|
| MOFA | Country Assistance Policy (CAP) Basic Policy (excerpt) | ・Improvement of institutions and infrastructures, disaster prevention |
| | CAP Priority Areas (excerpt) | ・Assistance for the improvement of basic infrastructure including electric power networks, and creation of employment opportunities.<br>・Assistance in human resource development for promoting small and intermediate-scale enterprises<br>・Personnel training (to strengthen disaster prevention capability) |
| JICA | Objective and principal measures | ・Improvement of institutions and infrastructures and regional development for economic growth.<br>・Enhancement of disaster prevention measures |

⑥ Implementation of a local survey

1） Survey targets incorporating local needs

The government ordinance #442 (Armenia development strategy 2014-2025[55]) that took effect in March 2014 takes 1) promotion of industry and exports, 2) tourism development, 3) IT sector development, 4) agricultural and regional development, and 5) creation of SMEs and support for their activities for economic development and employment promotion.

The survey team assumed that collaboration in the areas of IT that does not involve transportation based on its bad environment which is the biggest bottleneck of the country, food processing that can cope with long transportation, and high value-added functional food have high potentials of collaboration promotion based on the survey results of features and overview of Armenia in (1) and (2), Japan's aid policies in (3) and Hokkaido companies' thoughts in this chapter in 3-(4) Technologies and Knowledge of Hokkaido in the report and in reference to the views and requests of Armenian companies and organizations. The survey team also studied tourism which the Armenian government regards as an important sector and in which Hokkaido has much experiences and successful examples.

As for the IT sector, Hokkaido has a cluster of small- and medium-sized IT companies mainly in Sapporo and they are assisting HR development for Vietnam and working in collaboration with the US, Taiwan, Thailand, China and Vietnam. Food processing coincides with agricultural and regional development in Armenian development strategy and it enables value addition to regional resources and creation of regional employment. It is also one of Hokkaido's key industries and it has successful experiences in branding not only in Japan but also in Asia. As for functional food, research and development in Hokkaido has been active and there is much needs for international collaboration in addition to the fact that the needs for cooperation with Japan was confirmed in Armenia. Tourism is one of key industries both in Armenia and Hokkaido and it has the potential of generating synergy effects with regional development projects based on the concept of JICA's one village one product movement.

The second field survey and a seminar is planned to be held on February 8, 2016, in Armenia to exchange views with Japanese experts on the theme.

[55] http://www.minfin.am/index.php?fl=78&lang=3 A strategy of the Armenian Government after review of the government ordinance #1207N, The Sustainable Development Program (SDP), that was adopted in 2008

2) Issues for development and needs in Armenia

a) IT industry

The information and communications industry has also been positioned as critical in export development in the Armenia development strategy 2014-2025 government decree mentioned earlier, which lists the following five policies. The objectives of these policies are to create 10,000 to 15,000 new jobs in the IT industry by 2025, and raise the GDP share of the IT industry by six to seven percent in 2025, from two percent in 2011.

1) Establish a Technopark through PPP
2) Human resource education at universities in cooperation with private sector
3) Preferential tax treatment for export products and technologies in promising sectors
4) Education and start-up support for small and medium businesses including research and information provision
5) Direct support from government for technological innovation in the IT industry

According to the country study, it was confirmed that there are already three Technoparks in Yerevan, with cooperation from international IT companies including Microsoft, Sun Microsystems, Synopsis, and Cisco Systems. Microsoft has opened an innovation office on the campus of the State Engineering University of Armenia and is developing technologies and training human resources, and Synopsis has built a development base in one of the Technoparks (VIAsphere) within the city of Yerevan, employing 600 engineers. In the country study, there were comments from local people involved with the Technoparks that the currently outsourcing work for American Silicon Valley companies is indeed supporting the Armenian IT industry, but the situation is no match for emerging countries in Asia in the competition for simple work in terms of price and the number of personnel available, meaning that going forward, the independent development of technologies will be indispensable.

Armenia was at the center of basic research and terminal and other material development and production in the former Soviet Union era. However, technological application and advanced technological development concentrated in Russia and thus it has limited experiences in it and it is a problem related to human resources development. Although the country is exploring overseas market using the human network of approx. seven million Armenians living overseas, there is little network in Asia that is expected to grow the most and the on-site survey revealed that they hope to have reliable Japanese companies as partners to handle the Asian market.

b) Food processing industry, including functional foods

Armenia is a natural habitat for herbs, northern fruits, and other produce. However, local residents do not recognize their values and they simply collect and conmume them on their own as their hobbies. Product development for the overseas market where there is much needs for them has not progressed sufficiently. Meanwhile, ordinary apricot and apple juice and jam are exported to Russian and EU markets. Armenia standardized products when it became a member of EEU in January 2015 to be able to ship them out to the member states without any inspection at the customs by simply conducting the inspection they conduct for the domestic market and showing the package. This means that they no longer have to take samples to inspection agencies of the importing countries or go through various paper work, which they are required currently. In the three-year transition period from 2015, government laws and programs are being reviewed and standardization procedures are being taken and no specific impact on the distribution has appeared. Although provision of equipment to inspection agencies or human resources development are planned as support for the transition by the EEU Secretariat, they are behind the schedule due to recent economic slowdown in Russia and Kazakhstan. As the EEU standards apply to the domestic market, Armenian companies that supply products/services to the market also need to develop facility and human resources to meet the technical standards.

Armenia was recognized as GSP+ to be qualified to enjoy EU preferential tariff scheme together with Georgia and other countries in 2014. It aims to have cooperation from Armenians living in EU to develop a new distribution channel via the companies they operate or through their introduction to increase exports at a lower tax rate[56].

Food products are shipped from Armenia to other member countries, and the need for processed vegetable and fruit products is especially high on the market. In the country study, it has been confirmed that there are companies that have received orders for contract production from major German and Russian supermarkets and suppliers, among other similar outlets.[57]

[56] The total export value from Armenia to EU in 2014 was 228 million EUR and 60 million EUR (26%) was under the GSP+ preferential tariff scheme. The ratio increased in the first half of 2015 as the total value was 144 million EUR and 58 million EUR of it (40%) was under the tax scheme. (EU Armenia delegation repprt on Jan. 29, 2016) http://eeas.europa.eu/delegations/armenia/press_corner/all_news/news/2016/2016_01_29_en.htm

[57] Company A the survey team visited in the second field survey produces private-brand juice (apricot, tomato, etc.) for two major Russian supermarket chains and it plans to increase the product lineup. It also launched a brand of jarred vegetables, Noah, with the Noah's ark as its motif, for German market and started shipment. It has an inhouse inspection system to meet EEU and EU wuality standards and their wuality control officials visit the company once a year to check the production and inspection facility.

Photo 7-(5)-1 Products being shipped Perekpestok, a major retail chain in Russia


Photo 7-(5)-2 Products being shipped to Germany with the Armenian Noach brand

Regarding various kinds of food, among companies where hearings were conducted as a part of the country study, there is the belief that there is demand for healthy and safe foods in large cities in Russia, Kazakhstan, and other countries, and that they need a system for introducing Armenian products to those markets as organic products. Armenia's cool and dry high plains are well suited to organic cultivation fruits, nuts, honey, herbs, and other products because the climate allows them to be grown without damage from pests even with only small amounts of agricultural chemicals.

In the Caucasus region, plants and fruit such as sea buckthorn, rose hips, marmelo, cornelian cherries, and other foods with high nutritional value, which can be used as ingredients for functional foods, grown naturally, which are considered promising for commoditization with an eye to Japanese and European markets. Specifically, INSI-NTK CJSC "The rich heritage of the Armenian nature" reported the following strengths of the country as concerns the development of natural remedies and health foods at the local seminar held as part of this study on February 8, 2016.

- Raw materials produced without agricultural chemicals can be sourced because of the cool and hospitable natural habitats
- Armenia has a history of roughly 3,000 years of creating and using natural remedies
- There is a registry containing more than 2,100 types
- Cooperation with international research institutes in Europe and the US is also underway
- Facilities for a scientific approach to this development exist, along with a system for cooperation with research and medical institutions

However, while it has been a positioned as a center for research and ingredient sourcing in the Soviet Union era, there are no departments that do the final processing and distribution. The function concentrated in Russia including Moscow. Although they need private companies and human resources for final product development and marketing after its independence, they are not developed as much as needed in the country.

c) Tourist industry

For Armenia, the tourism industry is second only to mineral resource as a means of obtaining foreign currency. The government has laid out the plan below for the tourism industry up to 2025 in its Armenian development strategy. Toward these goals, the Armenian government is creating an environment to accept international tourism by creating multilingual support for airports and other related facilities, as well as conducting tourism promotion abroad. As part of the promotion efforts, it developed a wide-area international tour route with Georgia with which it shares the border and produced a common pamphlet and joint exhibits at overseas travel fairs and proposed common packages for overseas tourist agencies as joint promotion activities. It has also accepted tourist agency employees from Georgia at pioneering model facilities that are members of B&B Network of Aries[58] in which Armenian B&B inns participate and provides advice on the organization management and its membership requirements, and promotion methods. It also plans to introduce Georgian facilities on the site of B&B Network of Aries to increase travelers who cross the borders.

Table 7-(5)-3 Tourism Sector Development Plan 2011 - 2025

| Year | 2011 | 2017 | 2021 | 2025 |
|---|---|---|---|---|
| Inbound visitors (thousands) | 757.9 | 1351.2 | 1907.3 | 2692.3 |
| Inbound visitor spending (millions of USD) | 513.0 | 1030.0 | 1573.7 | 2404.5 |
| Employed in tourism sector (thousands) | 20.6 | 23.9 | 26.0 | 28.3 |

* Based on Armenia Development Strategy 2014-2025

The biggest protion of foreign tourists are from Russia, accounting for 22.7% of all tourists in FY2013. Most of them come to Armenia to meet their relatives, acquantances and friends. Thus, they do not stay at accommodation facilities or visit tourist destinations and thus they are not the target of tourism services. According to the comparison data by EU and CIS of 2013, 27.8% of tourists were from CIS and 36.3% were from EU. Thus, torism resources development and services to meet the needs of tourists particularly from EU need to be examined. Therefore, the Armenian government is not only putting its strength into Yerevan, but into

Table 7-(5)-4 Percentage of foreigners by country as of 2013

| Category | Country | Percent |
|---|---|---|
| CIS 27.8% | Russia | 22.7% |
| | Other CIS countries | 5.1% |
| EU 36.3% | France | 7.7% |
| | Germany | 6.1% |
| | England | 3.4% |
| | Other EU countries | 19.1% |
| Other 35.8% | USA | 12.2% |
| | Iran | 5.9% |
| | Others | 17.7% |

Data: National Statistical Service of Armenia

[58] B&B network established in 2000 by Aries Ltd., which is a mjor catering comapny in Armenia. It is a membership network and conducts awareness raising activities among members and draws guests via a shared site. It has about 400 member companies according to on-site hearing. Members are not limited to B&B inns but it include restaurants and guiding companies. www.bedandbreakfast.am

cultivating the tourism industry in rural regions as well, at the same time repairing historical buildings[59] and working on language issues. It is also cultivating small lodging facilities like farm hostels by conducting of trainings, pamphlet creation, construction of the network between parties, etc. to address the issue of accommodation facilities in those areas. It is also preparing local farms to receive green tourism and eco-tourism. Going forward, there must be a cooperative structure between farmers, tourist industry workers, and other locals in the region in order for these initiatives in the tourism industry to lead to economic development in the region. Recent needs of tourists from Japan and other Asian countries and Europe and North America include guides who can introduce local fresh food, history and culture and participation in local events. These needs can be met if relevant local entities cooperate and it can serve as competitive edge against other regions. Sightseeing- and hands-on-experience-based travels have shifted to long-stay travels. It is likely to be possible to further extend the length of stay of tourists[60] from Europe who tend to stay at one place for a week.

Reference. Project for development of local production and promotion of local brands (JICA)

In this project conducted by JICA, the Small and Medium Entrepreneurship Development National Center (SMEDNC) acted as the executing agency in promoting the participation of farmers and other local residents in green tourism and eco-tourism.

The most important objective of this project was for regional products or business to contribute to the economic development of the target community, with another goal of the project being to develop support tools for regional small and medium businesses based on the One Village One Product concept.

As one part of that, pilot projects are also underway, for areas including agro-tourism, promotion of bed and breakfasts, and strengthening the abilities of tourism industry operators.

3) Responses at seminar

a) Seminar and questionnaire procedures

In response to the needs of Armenia that were found out in the series of survey, a seminar was held in the country to publicize the technologies and products of Hokkaido companies. Questionnaire survey was also conducted to gather additional information after the seminar. As shown below, the results of a survey are the next: a question about the degree of satisfaction with the seminar generally, 15 out of 16 participants (93.8%) were either "very satisfied" or "somewhat satisfied."

There were no participants who reported being "dissatisfied."

[59] One example case is the Revival of Tatev project conducted by IDeA (Initiatives for Development of Armenia) incooperation with the government. Volunteer workers from home and overseas repair and maintain historic structures in Tateb. http://rubenvardanyan.info/en/projects/idea-initiatives-for-development

[60] Hearing results with local B&Bs reveal that European tourists tend to make a reservation without deciding the length of stay and stay for a long period if they are satisfied. They stay for a week on average and travel to another region.

Table 7-(5)-5　Overview of the seminar and questionnaire survey

| | |
|---|---|
| Date of the seminar | February 8, 2016 (Monday) 11:00 to 14:30 |
| Site of the seminar | Elite Plaza 15 Khorenatsi Str., Yerevan 0010, Armenia |
| Methodology of questionnaire | Distributed and collected questionnaires to seminar participants (after completion of seminar) |
| Questionnaire target | Group from Armenian government agencies, industries and NGOs: 50 people |
| Retrieved questionnaires | 22 questionnaires, 40 % (Number collected ÷ Number of participants) |
| Affiliation of respondents | Armenian government agencies: 1 person, Industries: 14 people, NGOs and other groups: 3 people, Unknown: 4 people |

b) Purpose of participating the seminar (multiple answers)

The response "I would first like to know more information about Japan's (Hokkaido's) corporations" was overwhelmingly common, being twice as likely as the next most common response.

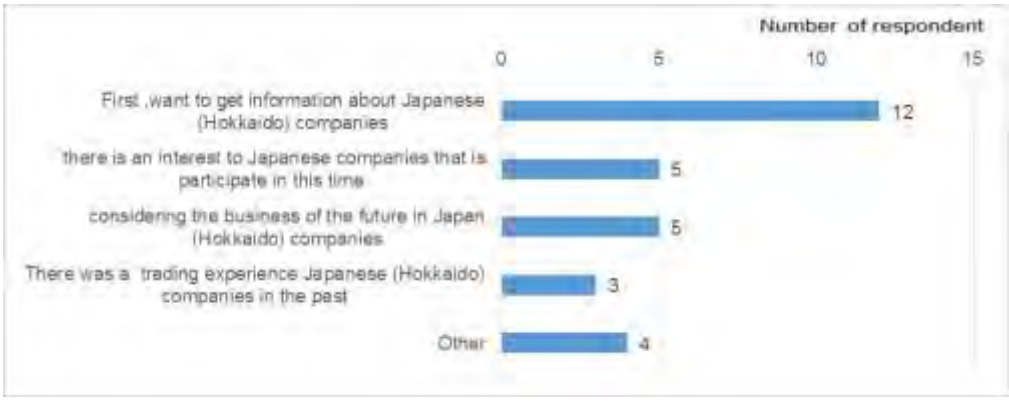



Figure 7-(5)-7　Reason for Participation

c) Industrial sectors of interest (multiple answers)

"Food Products / Food Production" was most common, followed by "Service."

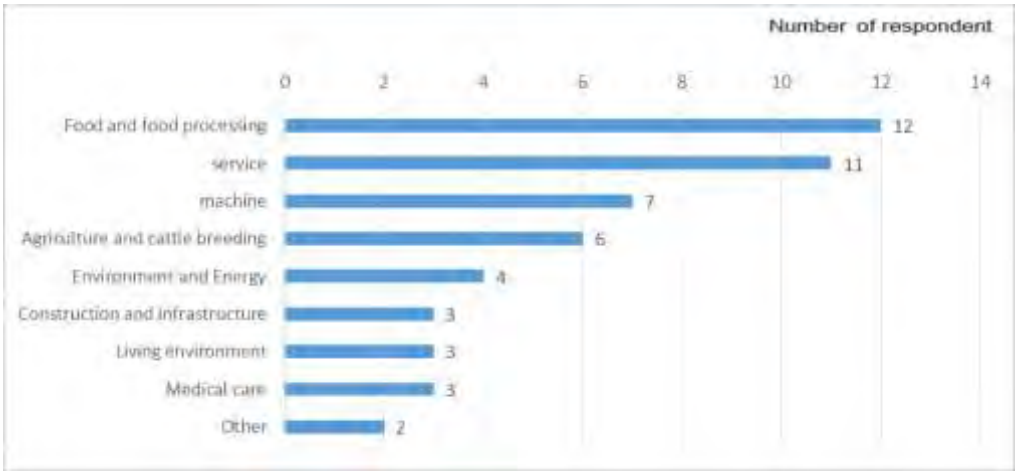



Figure 7-(5)-8　Industrial sectors of interest

Specific subjects of interest for each sector are as follows:

Table 7-(5)-6 Specific subjects of interest

| | |
|---|---|
| Agriculture and livestock farming | — |
| Food/ food processing | Wine exporting and importing and joint-production |
| Construction and infrastructure | — |
| Environment and energy | — |
| Living environment | — |
| Machinery | — |
| Medical services | Medical tourism |
| Services | Hokkaido tourism, rural tourism |
| Others | Tourism education, IT, software development (web programing), telecommunications apparatuses |

d) Topics about conducting business with Japanese corporations (multiple answers allowed)

"No information" was the most common response, followed by "No contact with Japanese corporations."

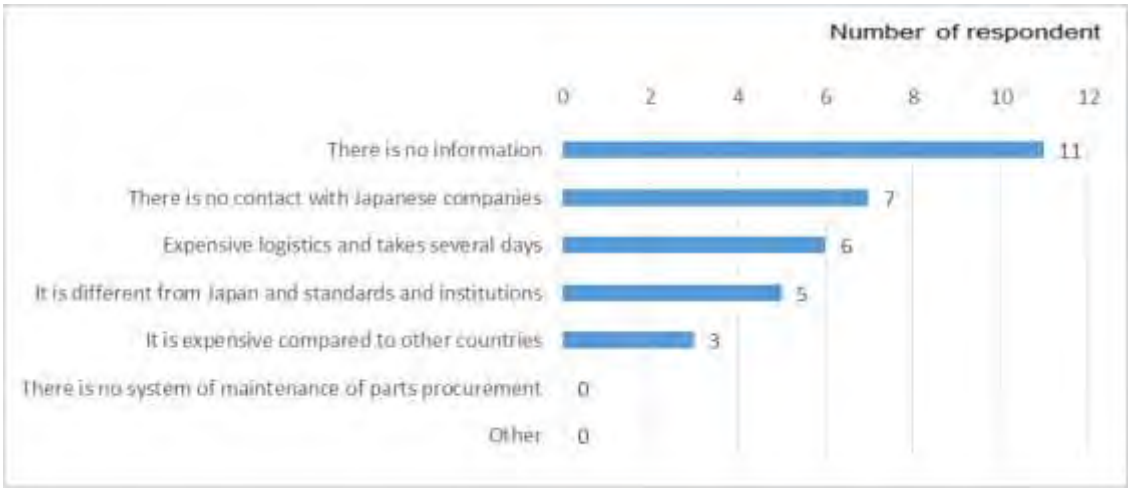



Figure 7-(5)-9 Topics about conducting business with Japanese corporations

e) Business with Japan in the Future

The response “I would first like to find a partner company” was most common, followed by “I would like to start doing business” and “I do not yet intend to do business with Japanese corporations.”


Figure 7-(5)-10　Business with Japan in the Future

⑦　Future planning

As mentioned in the previous section “⑥－2) Issues for development and needs in Uzbekistan”, the current situation of each theme was presented. Here are our thoughts on each topic.

・The IT Industry :

As they are unable to offer internationally competitive rates on IT outsourcing projects, It is necessary to pioneer unique technology developmental abilities.

・Functional food :

As for functional food that is one of interests in which Hokkaido has as private collaboration, processing technology improvement and capacity to cope with the market trend are needed although the country is rich in raw materials and research experiences. Although Armenia has interest in food processing in general, Japan side is not interested in such ordinary raw materials as apricot and tomato for private collaboration as it cannot see any advantage of the collaboration when it considers the transportation cost.

・The Tourism :

Establish a network of collaboration between the tourist industry, farmers, food processing companies and local communities is important to develop competitiveness and new appeal as a tourist attraction.

With each of these topics in mind, we held a seminar on February 8 on connecting the people of Armenia and Hokkaido. Based on the results of this seminar, we conducted the following investigation.

1) Development in IT Field

Both Hokkaido and Armenia have their own respective strengths in the IT field, and we believe that by capitalizing on each region’s strengths, we can establish a relationship that allows both parties to overcome their respective issues and bring the people together. Hokkaido’s IT sector was introduced in the abovementioned seminar. Hokkaido IT companies used research outcomes of university research institutes in

their projects, universities learned social needs from the companies, and the government assisted technological and human resources development of SMEs under industry-university-government collaboration and this helped IT companies grow according to the report. Hereafter, in case IT companies of the both countries conduct the private sector partnership, aiming for improving technological abilities through the link between industry, government and academia based on the experience of those from Hokkaido, we also expect to create mutual benefits by making use of Armenia's network with international corporations and the cluster of IT-related organizations that is Silicon Valley.

Table 7-(5)-7 Excerpt from Report on Armenia-Hokkaido Joint Seminar to Promote Private Sector Collaboration

| | | |
|---|---|---|
| Report by | Japanese report:<br>NPO Organization SAPPORO IT FRONT<br>Mr. Tomoaki Yoshii, Head of Overseas Division | Armenian report:<br>Mr.: Tony Moroyan President VIA Sphere Techno Park |
| Status | ・History of Hokkaido's IT industries deriving from universities<br>・Lack of large corporations, known for being a leader in technology<br>・Target of same NPOs: global human resources development, restructuring of local IT industry, development of overseas market | ・Silicon Valley of Soviet Union in the 1980s<br>・Establishment of Techno-park as park of government countermeasures, cooperation with foreign corporations(Microsoft, etc.)<br>・Global network and reinforcement as contact with NIS market |
| Issues | ・Insufficient international network<br>・Insufficient human resources | ・Has semiconductors and basic foundation building, but not being put to full use at actual company<br>・Cooperation with Asian market, has market security |
| Possible Results of Exchange | ・Exchange between industry, government and academia, aiming for expansion in business in niche markets<br>・Established cooperation based on mutual understanding<br>・Has overcome outsourcing operations<br>・Developed applied technology<br>・Overseas development based on difference in level of technology rather than price competition<br>・Hokkaido cooperates with creating a place for technology and human resource exchange for industry, government and academia | ・Hopes to have tri-lateral connection with not only Armenia, but also countries that have their own Silicon Valleys and Hokkaido<br>・Implementation of Japanese technology and application<br>・Links to not only corporations, but also both parties' universities<br>・Armenia is a feasible market model for actual societal demonstrations of developing software and services |

Our image for the promotion of exchange in the IT field between Armenia and Hokkaido are displayed in Figure below. As a first step, we could make the most of IT characteristics and allow for the continuous exchange of opinions between corporations over the Internet. Many people who work in Armenia's

bountiful IT industry, which is has connections to many foreign corporations, are able to communicate in English. In Hokkaido, there are many IT-related corporations interested in pursuing international expansion that seek to employ linguistically proficient personnel or people with experience studying abroad, and the communication in English is possible in some companies. Such developments would make the establishment of appropriate mutual points of contact that are desirable for sharing in each party's fields of expertise possible, and allow for parties to make the best of their respective strengths. Participation of universities and government in addition to companies is expected to enable exchange of information on advanced technological research of both countries and international exchange programs among municipal governments.

Next, it would be necessary to put into effect mutually functional model projects with detailed themes and clearly defined roles. Such model projects enable understanding of the technical levels and approach to work of both sides. In these circumstances, we believe that it would be possible to start with feasible small-scale university or corporate sponsored independent research and development projects in matters that Japan may already have knowledge of and technology pertaining to, such as ① the utilization of IT technology for natural disasters like landslides, emergency information system in case of earthquakes and etc., which are accumulated in Hokkaido, ② the utilization of IT technology a market information gathering tool for tourism, regional specialties, public relations, and sales and marketing, commodity settlement and traceability, and ③ software development technology for public services like local transportation and local information networks. These topics are mentioned by local IT companies as necessary needs.

In relation to the above, the Hokkaido Regional Development Bureau and Sapporo municipal government have programs on ① in collaboration with local companies. In relation to ②, a settlement and home delivery model including overseas settlement and delivery is in place in collaboration with a large online shopping mall. A snow clearance plan based on snow forecast that uses bus operation guide by bus companies, geolocation system and IT can be utilized in relation to ③ local transport.

It has again been recommended that there be mutual cooperation between industry, government and academia on Armenia's part through seminars to be held on location. For example, an opportunity to share views of each other can be provided as the first step and then a joint research project can be implemented as a model project as the following step when Armenia and Hokkaido jointly provide technologies and services overseas, as shown in the below figure. This is a form of using Armenia as the social demonstrative and model market and develop software and systems, thereby making them as business.

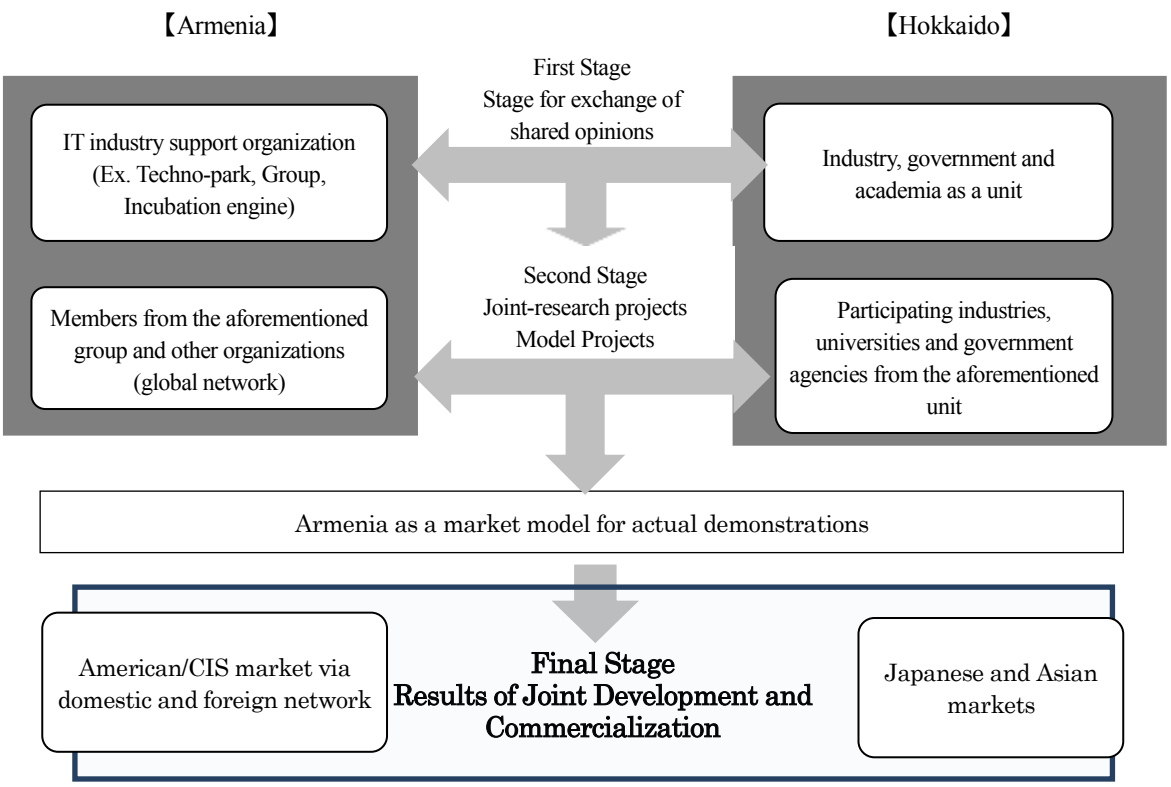



Figure 7-(5)-11 Armenia-Hokkaido IT Industry, Government and Academia Cooperation

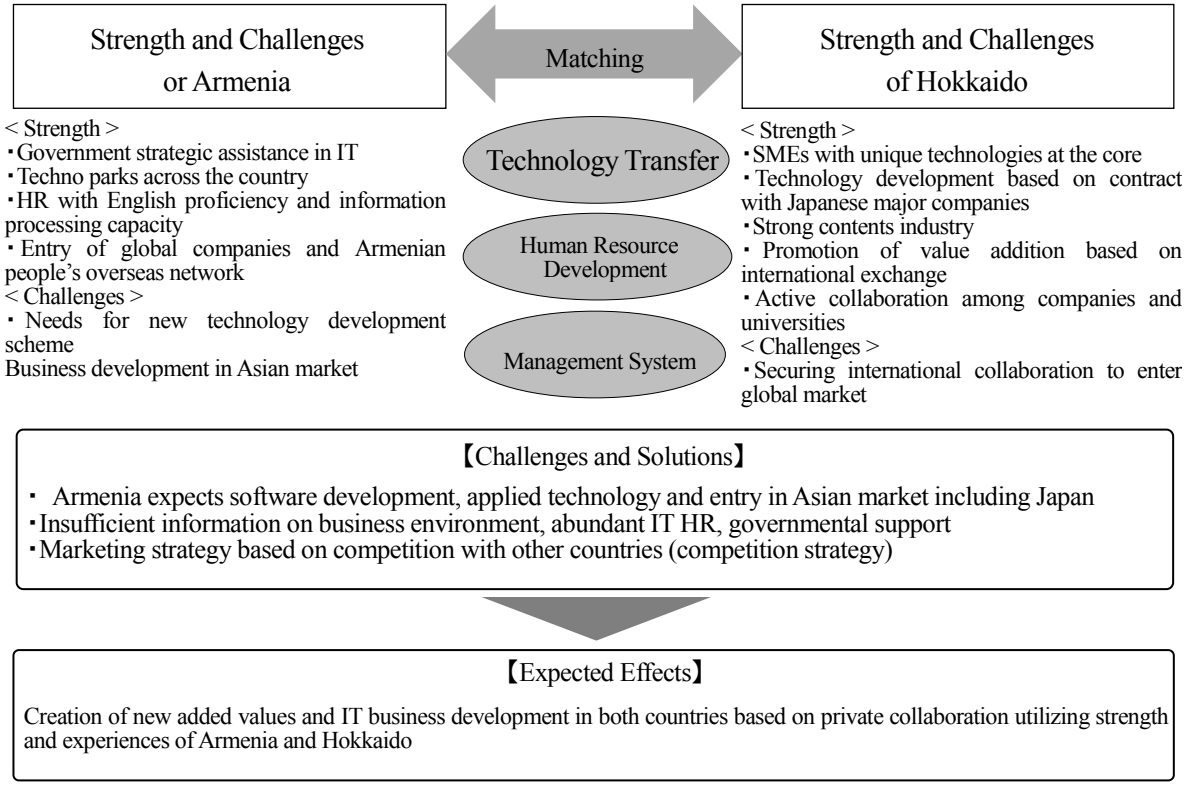



Figure 7-(5)-12 Business Development Plan (IT Sector)

2) Developments in the Field of Food Processing, Including Functional Food

Armenia is able to cultivate safe, pesticide-free herbs and fruit trees in areas of high altitude with cool and dry climates, but these products have not been fully commercialized. In our country, Hokkaido included, which holds news about functional foods as a raw resource in high regard, the procurement of raw materials and primary processed products from Armenia can be imagined. Because the Armenian diaspora has a network throughout the EEU and EU that maintains a framework for a common market and the adaption of preferential treatment, there is a possibility for the local joint development of products in a more diverse market.

By bringing Hokkaido's engineering and expertise to Armenia—for example, having a functional food development system that is focused around general incorporated Hokkaido bio industry associations—projects grounded in mutually important issues or news that would contribute to the advancement of both countries' food production would become feasible. In such an event, it would be desirable to have exchanges between research institutions in coordination with the plan.

Reference：Development in funcitonal food sector in Hokkaido

- Hokkaidi with cool climate and vast idle land is most suitable for cultivation and production of medicinal plants in Japan and private companies are engaged in such activities at various locations there. Hokkaido Association for Bio-Business that promotes functional food business there organizes research sessions for entry in the global market.
- There are various native herbs in Armenia, including sea buchthorn native to mountains, and using them as raw amterials of functional food will contribute to business promotion of both countries.

Examples of Projects Using Northern Fruits and Medicinal Plants (Hokkaido)

| Comapny | Region | Overview | |
|---|---|---|---|
| Yubari tsumura Co., Ltd. | Yubari | Established in 1999. Regarded Hokkaido as production base of medicinal plants in Japan and has launched expansion of processing facility. The production area is increased by over 200% to 10 million square meters by 2020. It began planting 4,200 medicinal trees to be used as raw materials of natural medicine in 2015. | |
| Oji Holdings Corp. | Shimokawacho | Raising seedlings and cultivation of medicinal plants under a collaborative agreement on medicinal medicine research in 2013. It conducts R&D for high value addition and product developent in Hokkaido that is suitable for mechanization as it has vast farmland to realize cost reduction based on mass cultivation. | |
| Endougumi Co., Ltd. | Mukawacho | Cultivation and processing of domestically grown sea buchthorn. It particularly focuses on jam and cosmetic product and local specialty product development. |  Bread paste Fruit sauce http://www.endou-gumi.co.jp/berry/top.html |

*Produced by HIT based on press release, etc.

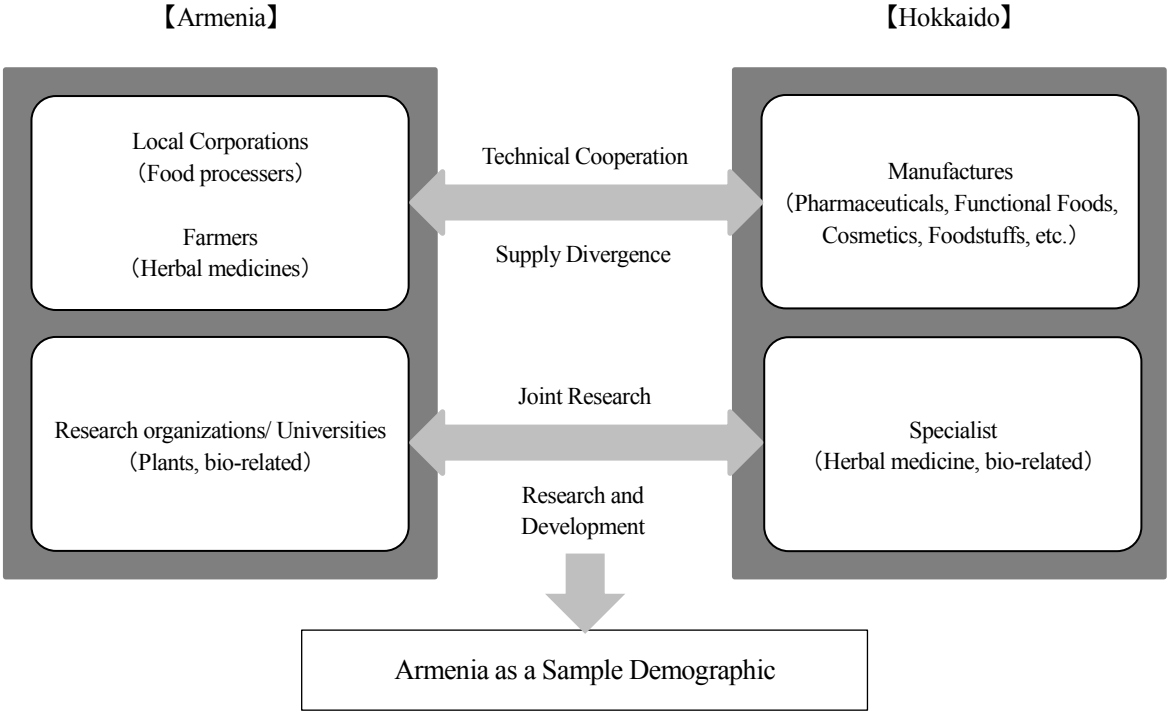



Figure 7-(5)-13　Partnership—An Image of Industry-University-Government Collaboration between Armenia and Hokkaido

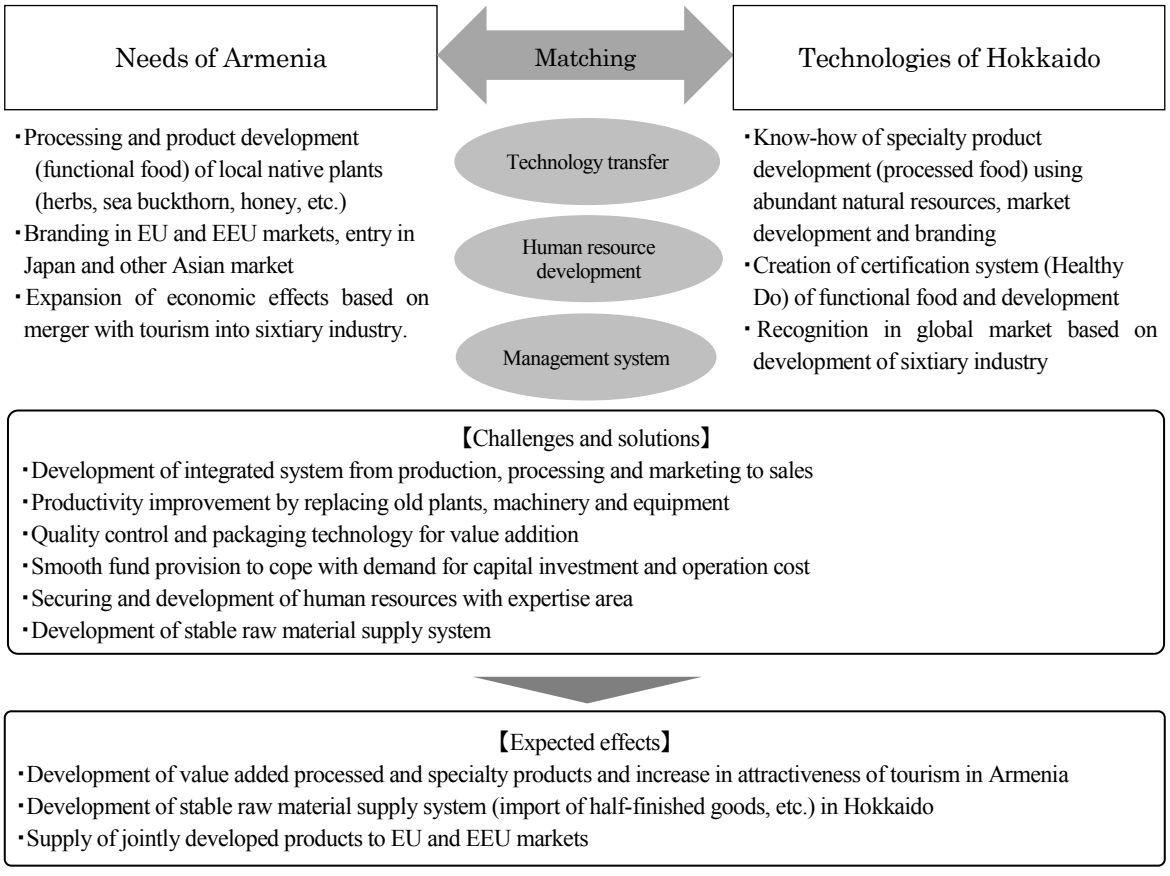



Figure 7-(5)-14　Business Development Plan (Functional and Other Food Procesing)

3) Potential development in tourism

Thanks to cooperation from JICA, Armenia has been able to make strides in regional development, which has led to further developments in food processing, folk crafts, wine production and cultivation, and even tourism expansion. Furthermore, the Armenian government has made the promotion of tourism and agriculture as well as the growth of small and medium businesses strategic priorities, the unified improvement of which would also tie into regional development. It may also be possible to effectively utilize the domestic expertise of Hokkaido or the exchange experience of Armenia's neighboring country, Georgia.

The Japanese government has enacted the Sixth-order Industrialization Act (2010) to push the progress of sixth-order industrialization, which promotes the links between the agriculture, manufacturing, tourism and service industries; and is currently working toward regional development. Hokkaido is making the greatest efforts of all of the prefectures of Japan to utilize this system. We expect that we will be able to develop similar enterprises at dairy farms and fruit growing regions in the north aimed at improving the appeal of tourism sites of Armenian suburbs. More detailed examples of this are listed below.

Furthermore, recommendations were made and opinions shared concerning the possibility of exchanges between Armenia's NPOs and universities pertaining to sixth-order industrialization at a seminar held on February 8, which can be seen below.

Table 7-(5)-8 Excerpt from Report on Armenia-Hokkaido Joint Seminar to Promote Civil Collaboration (Tourism, Sixth-order industrialization)

| Reported by | Hokkaido report: (Research group) | Armenian report: Small and Medium Entrepreneurship Development National Center |
|---|---|---|
| Explanation of current situation | ・Example of regional economic development through Sixth-order Industrialization (Niseko Takahashi Farm, NPO B&B Association etc.)<br>・ Build mutually beneficial win-win relationship (Ex. Hokkaido and Georgia) | ・JICA venture of One Village One Product<br>・ Implement regional businesses like tourism, agriculture and food processing. Work to improve product quality and branding<br>・ Establish events and permanent marketplaces, spread PR through social media |
| Possibilities | ・Cooperation with fields like IT and functional foods<br>・ Create an information network for tourism(information exchange for mutual clients, etc.)<br>・ Georgia and Armenia could increase exchange with Hokkaido, which has shown actual results in tourism development and expanding inbound travelling | ・Explore Japan as a future international market<br>・ Possible collaboration on things like product quality management and responding to market needs<br>・In tourism, B&B collaboration and development of tour routes that cross the border of two countries are carried out in the private sector and tourist groups can be accepted from Hokkaido more extensively. |

Reference: Potential of agricultural cooperation through tourism promotion by developing the sixth economy sector

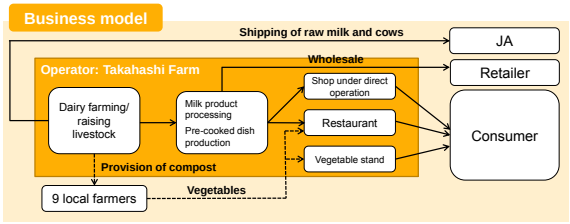
## Success examples of promotion of the sixth economy sector in Hokkaido

(1) Takahashi Farm Co., Ltd.
(Production x Processing x Direct sales/Restaurant)

**Overview**

- Raises 260 milk cows to produce approximately 1,200 tons of raw milk.
- Sells confectionery (cream puffs, puddings, etc.) and milk products (ice creams and yogurt drinks) made of fresh raw milk of its ranch in the shop under direct operation.
- A restaurant is open where vegetables sold at farmers' market and other locally produced food are used in collaboration with nine local farmers. A buffet lunch centered on vegetables is served.

**Business model**

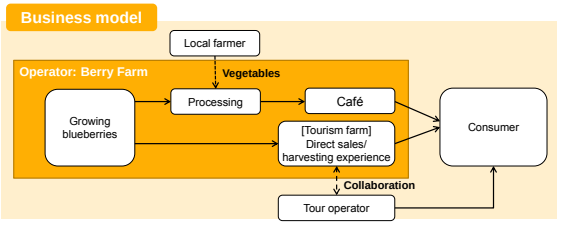



(2) Berry Farm Company
(Tourism farm)

**Overview**

- 16 types of blueberries are cultivated.
- The tourism farm is open to sell blueberries directly and/or provide hands-on harvesting experience to visitors. A travel product has been developed in collaboration with tour operators.
- Obtained the certification of comprehensive business planning for the sixth industrialization in 2012. A café is open on the site of the tourism farm to sell more than 50 types of *gelato* (Italian ice cream) made from blueberries grown in their own farm as well as local farms.

**Business model**




Example ① Facility and processed goods of Takahashi noen Co.

Example ② Blueberries and processed goods produced by Berry farm Co.

＊Materials prepared by HIT

(6) Azerbaijan

① Geographical features

Azerbaijan, whose area is 1.1 times larger than Hokkaido, is zoned into three major regions: Caspian Sea, Greater Caucasus Mountains, and Great Plains. Due to its complicated geological formation, the country has 9 of the world's 12 climate zones. Azerbaijan is located on the west side of the Caspian Sea, and surrounded on three sides by steep mountains. Rivers from those mountains form a wealth of valleys emptying into the Caspian Sea. Since Azerbaijan shares common borders in the Caucasus not only with Georgia and Armenia but also Russia to the north and Iran to the south, this country has the potential to be a distribution hub to those countries through the trade ports in the Caspian Sea. In addition, to the southwest across Armenian territory, lies the Nakhchivan Autonomous Republic that belongs to Azerbaijan.


Figure 7-(6)-1 Location of Azerbaijan

Source: MOFA

② Climatic features

As described above, Azerbaijan possesses nine climate zones due to its geological formation. However, its subarctic zone, to which Hokkaido also belongs, is limited to high-latitude areas in the mountains region, and considering the temperature, precipitation, and snowfall, the country is considered to have few common climatic characteristics with Hokkaido. However when it comes to road transport, road management is required in the mountain regions and thus technologies employed in Hokkaido can be used for road management and disaster prevention measures in the relatively low-temperature environment of the mountain regions.


Figure 7-(6)-2 Map of climate zones in Azerbaijan

http://www.grida.no/graphicslib/detail/climate-zones-of-the-caucasus-ecoregion_851d#

③ Administrative districts

Azerbaijan has administrative boundaries separating 59 administrative districts, 11 cities (similar to designated cities in Japan), and one autonomous republic in an area approximately 1.1 times larger than Hokkaido. The population of Azerbaijan is 9.5 million, out of which, 2.15 million people reside in the capital city, Baku. The population of the area within commuting distance of Baku is approximately 4 million.[61] In the case of Hokkaido, the number of autonomous communities is 178 (cities, towns, and villages) and 1.91 million people out of its total population of 5.4 million reside in Sapporo, which suggests Azerbaijan and Hokkaido have common characteristics and challenges in terms of population centralization in urban areas.

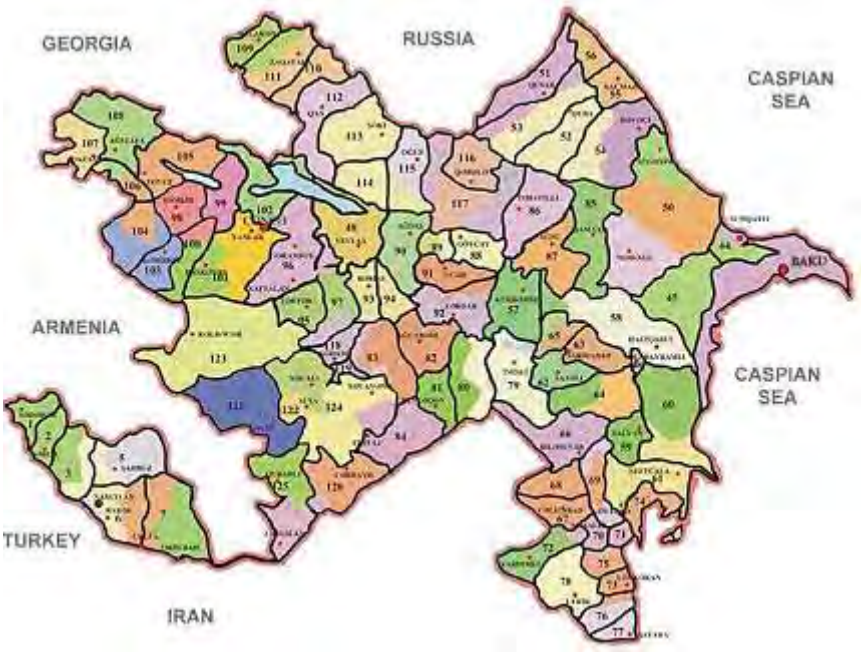



Figure 7-(6)-3 Administrative Boundaries in Azerbaijan

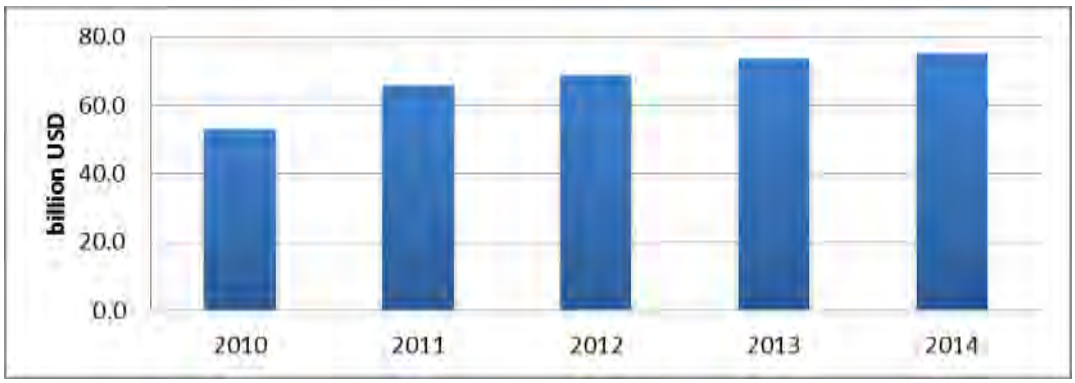
Source: Central Election Commission of the Republic of Azerbaijan

[61] Doing business in Azerbaijan 2015（Azpromo）

④ General condition of Azerbaijan

1) Gross Domestic Product (GDP)

Since 2010, the nominal GDP has increased from 52.9 billion US dollars in 2010 to 75.2 billion US dollars in 2014. The most recent GDP average growth rate, which is from 2010 to 2014, is 3% per year. Based on a quick estimate for 2015,[62] it has decreased by over 15% from the previous year to 63.8 billion US dollars. This is considered to be due to the drop in the international market prices of petroleum products, which are Azerbaijan's major exports.




Source: World Bank

Figure 7-(6)-4 Recent transition of GDP in Azerbaijan

2) Industrial Characteristics

Azerbaijan's GDP consists of 5.7% agriculture, 61.1% manufacturing, and 33.2% service industries — the share of primary industry is low and that of secondary industry high.[63] Most active of the secondary industries are petroleum refining, heavy chemicals, textiles and food processing.

There is a world-class oilfield zone in the Caspian Sea around the capital city Baku, from which petroleum and natural gas are produced. Since facilities have been modernized and pipelines installed with capital investment from European countries and the U.S., oil production has dramatically increased, making a huge contribution to the economic development of the country. As for crude oil, the BTC pipeline, which was opened in 2006, is an important transportation mode. This pipeline has a total length of 1,768 km from Baku through Georgia to Ceyhan in the Republic of Turkey, with a throughput of 1.2 million barrels per day. The SCP (South Caucasus Pipeline) [also known as BTE (Baku, Tbilisi, and Erzurum) pipeline] (total length: 692 km, transport capacity: 25 billion $m^3$/year), which runs in parallel with the BTC pipeline, supplies natural gas to Turkey. Furthermore, in 2015, construction started on the Trans-Anatolia Natural Gas Pipeline (TANAP) connected with the SCP for transporting natural gas produced in Azerbaijan to Europe.

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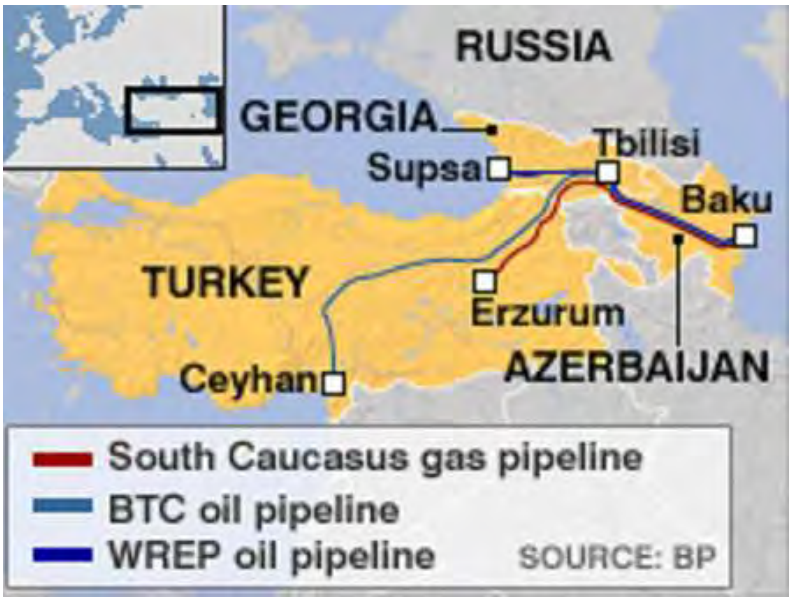
[62] World Bank, 2016

[63] CIA World FACTBOOK




[Quoted from British Petroleum]

Figure 7-(6)-5 BTC pipeline and SCP (BTE pipeline)


WWW.TANAP.com

Figure 7-(6)-6 Passage of TANAP (Trans-Anatolia Natural Gas Pipeline) between Baku and Europe

The government of this country established the State Oil Company of the Azerbaijan Republic (SOCAR) for smooth business operations in the petroleum industry, which is the main industry there. This organization implements planned oil drilling considering petroleum reserves, promotes complicated petroleum energy development, and manages or operates petroleum and natural gas, refineries, pipelines, and so on as a foundation of national policy. However, due to the recent collapse in crude oil prices and subsequent impact on the overall economy, outgrowing dependence on the petroleum industry has become a more serious issue than ever.

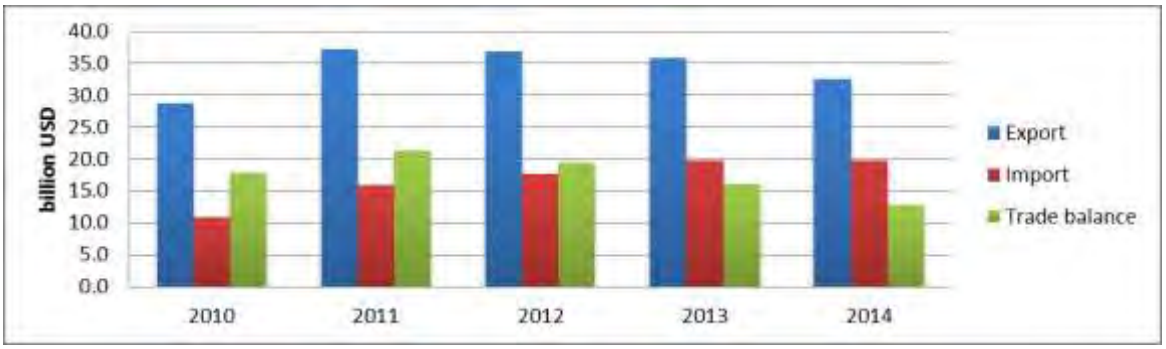
On December 21st, 2015, the Azerbaijan Manat was devalued by 47.6%, and by the end of January 2016, the foreign currency exchange reserves of the central bank had fallen by US$618 million from the previous month to $4.3 billion —a US$8.3 billion decline compared with the corresponding term of the previous year. As a result, credit ratings for state companies involved in oil development, energy generation and railways as well as the organization that evaluates public companies, were also discredited. With the incurred decrease in tax revenue, the government was forced to revise the 2016 budget based on the premise of a US$50 per barrel crude oil price, and a budget bill amendment premised on US$25 per barrel was presented to the President.

Under such circumstances, the Azerbaijan government proposes to promote the agricultural sector in order to diversify its industrial base. Though agricultural workers account for 40% of the labor force, the percentage of agriculture in GDP is only 5-8%. On the other hand, canal irrigation is well-developed, with wheat, cotton, fruit trees, and tea being cultivated. Also, mountainous regions boast livestock farming. Though its area is almost the same as Hokkaido, Azerbaijan's nine climate zones, ranging from higher to lower-temperature areas, allow for the cultivation of a variety of crops. Currently, the country is actively adopting agricultural techniques from advanced countries to streamline production. In addition, the whole area of the Caucasus is known as the original source of numerous herbs and Northern fruits.

As a future strategy, the Azerbaijan government aims for economic development focused on non-petroleum industries such as agriculture, tourism and service industries, as proclaimed by President Aliyev in his New Year's Greeting of December 31st, 2015.

3) Trade

The recent trade balance shows a steady export surplus. Main exports are petroleum, petroleum-related products, natural gas, ferroalloys, chemicals, machinery, wheat, knitting wool, and coal; main export trade partners are China, Russia, Germany, France, Italy, Greece, and Romania. The main imports are machinery equipment, metal products, and foods, while the main importing countries are Russia, China, and Germany.




Source: World Bank

Figure 7-(6)-7 Changes in Trade Amount in Recent Years

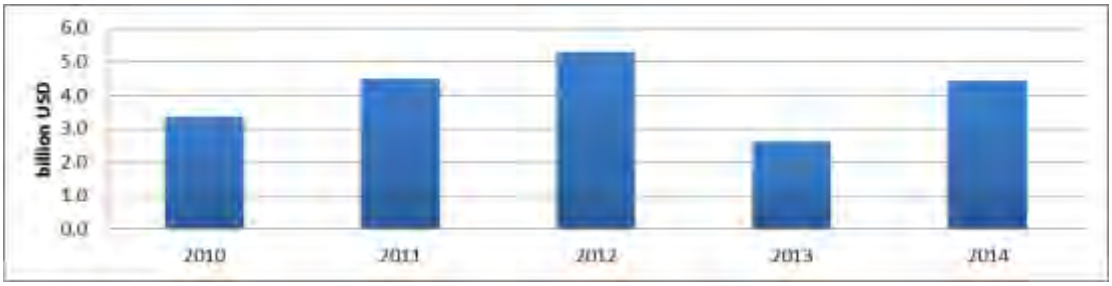
4) Foreign Direct Investment (FDI)

Since the middle of the 1990s, investment in petroleum development of the Caspian Sea around Baku has been mainly from European countries and the U.S. In 2007 official production of a wealth of natural gas also started. In addition a lot of overseas private capital has been invested in in industrial projects other than petroleum, including government-sponsored projects as well as construction-related projects in logistics and media industries. The country making the most capital investments in these areas is Turkey, followed by the U.K. and the U.S.

Azerbaijan's foreign direct investment dropped to less than the half of the previous year in 2013. About 80% of FDI in Azerbaijan is related to oil and natural gas resources, while FDI is considered to have peaked out in 2013 along with the prices in the crude oil market that had risen until 2013 but subsequently dropped, eventually leading to the abrupt downturn of the whole market in 2014. The year 2013 saw a similar plunge of FDI in other resource-dependent countries such as Kazakhstan[64].

[64] ADB: Asian Development Outlook 2014(Azerbaijan)

http://www.adb.org/sites/default/files/publication/31241/ado2014-azerbaijan.pdf




Source: World Bank

Figure 7-(6)-8 Changes in Direct Investment in Recent Years

5) Main Foreign Investment Policies

As a part of the Azerbaijan government's attempt to promote investment in the non-petroleum sector, the Ministry of Economic Development established Azpromo (Azerbaijan Export and Investment Promotion Foundation) in 2003. The role of the organ is to encourage foreign investment and exports in the non-petroleum sector, in addition to drawing attention to the country itself, and as a destination for international and business conferences.

In regard to laws concerning foreign investment, there is "Law on the Protection of Foreign Investments," which bestows on foreign investors equal rights and preferential treatment, including

exemptions for businesses established in industrial and technological parks from income tax, value-added tax, property tax and similar incentives, for seven years.

6) Status of Economic Partnership between Japan and Azerbaijan

The value of exports from Japan to Azerbaijan is 12.33 billion yen; export items are mainly machinery, transport equipment, and iron and steel. On the other hand, the export value of Azerbaijan's exports to Japan is approximately 130 million yen. Export items are mainly petroleum and petroleum products.[65]

ITOCHU (4.3% share) and INPEX (10.96%) have participated in the ACG (Azeri-Chirag-Gunashli) oil development, and exploited crude oil is exported to other countries by tankers from the Mediterranean via the BTC (Baku-Tbilisi-Ceyhan) pipeline[66], for which ITOCHU and INPEX also have a share (3.4% and 2.5%, respectively).

In 2015,a sovereign wealth fund in Azerbaijan, the State Oil Fund of Azerbaijan (SOFAZ), acquired a large scale commercial facility, "KIRARITO GINZA," from a Tokyo-based Japanese company.

[65] According to the Ministry of Finance. As of 2014.

[66] Daily transport capacity is 1 million barrels.

7) Status of economic partnership with countries other than Japan

To Turkey, bereft of petroleum resources and being the first country to recognize Azerbaijan's independence, Azerbaijan is not only an important partner in energy strategies but also as closely tied country, as the former President of Azerbaijan has referred to Turkey as "a counterpart of one divided nation". Azerbaijan belonged to the former Soviet Union, and the share of Russian products were dominant, but recently Turkish products have since been increasing their market share.

Table 7-(6)-1 Azerbaijan Overall Condition

| | | | | | | |
|---|---|---|---|---|---|---|
| General | Area | Population *1 | | Capital city | | Official language |
| | 86,600 square meters | 9.5 million (2014) | | Baku | | Azerbaijani |
| | Ethnic group | Language | | Religion | | — |
| | Azerbaijani (90.6%) | Azerbaijani | | Shiite Muslim | | |
| | Geographical characteristics: The country is located on the west side of the Caspian Sea and between Russia on the north and Iran on the south. | | | | | |
| Economic indicators | GDP/person *1 | Economic growth rate *2 | | Import amount *1 | | Export amount *2 |
| | 6,794 dollars | -13.7% | | 7.4 billion dollars | | 26.9 billion dollars |
| | Currency unit | Exchange rate to the dollar | | — | | — |
| | Manat (AZN) | 1 USD =1.56 AZN (as of January 2016) | | | | |
| | Nominal GDP (billion USD) *1 | 2010 | 2011 | 2012 | 2013 | 2014 |
| | | 52.9 | 66 | 68.7 | 73.6 | 75.2 |
| | Main exports *3 | Crude oil, petroleum products | | | | |
| | Main export counterparts *3 | Italy, Indonesia, Thailand, Germany, Israel | | | | |
| | Main imports *3 | Equipment and machinery, foods, vehicles and spare parts | | | | |
| | Main import counterparts *3 | Russia, Turkey, U.K., Germany, Ukraine | | | | |
| To Japan | Export value to Japan *3 | Main exports to Japan | | Import value from Japan *3 | | Main imports |
| | 130 million yen | Petroleum and petroleum products | | 12.33 billion yen | | Machinery and transport equipment, iron and steel |

| | | |
|---|---|---|
| | Major treaty/agreement | On March 10th, 2006, the Azerbaijan Technology Cooperation Agreement was signed. |
| | Domestic company *4 | 9 local Japanese corporations |
| Investment policy | Preferential investment field | Petroleum, chemicals, mineral resources, agriculture, livestock farming (sheep) |
| | Main authority | Ministry of Economy |
| | Outline of investment methods | There are restrictions such as prohibition of real property holding by foreigners. |
| | Preferential treatment for foreign investments (tax) | Preferential tax treatment for businesses residing in industrial or technology parks |
| Other | Main transport route | Japan -> ( by sea…the Mediterranean, Aegean Sea, Black Sea) -> Georgia -> (railway) ->Azerbaijan |

Source: Prepared by the Investigation Group based on the World Bank data, JETRO, website of the Ministry of Foreign Affairs of Japan, website of Japanese Embassy, statistics from the Ministry of Finance, and on-site hearing results.
*1: World Economic Outlook (IMF), 2013
*2: IMF World Economic Outlook (Oct. 2015)
*3: Foreign trade statistics by Ministry of Finance
*4: MOFA, Kaigai-zairyu-houjin-suu chousa-toukei ("Statistics on the number of Japanese living overseas"), summary ed., 2016

⑤ Aid policies of Japan

The table below shows the support plans and high-priority measures the Japanese government and JICA provide to Azerbaijan. Support used to be significant in the energy sector before; Japanese companies took part in oil and natural gas projects, and the Japan Oil, Gas and Metals National Corporation (JOGMEC) guaranteed debts for development projects. Since the recent drop in oil prices caused an economic slowdown, however, the Azerbaijani government has shown interest in receiving support for non-energy sectors such as agriculture, tourism, and development of small- and medium-sized businesses.

Japan set up "GUAM+Japan" meeting as a framework for dialogue and cooperation with the Organization for Democracy and Economic Development (GUAM) in 2007, of which Azerbaijan is a member. Main themes include energy, tourism promotion, investment promotion, and at the sixth meeting held in July 2015, water management, energy security, tourism, and international cooperation were discussed.

Table 7-(6)-2 Assistance policies of Japan to Azerbaijan

| | | |
|---|---|---|
| Ministry of Foreign Affairs | Country-specific support plan Major goals (cited) | ・ Promotion of agriculture, tourism, and transportation businesses<br>・ Improvement of power and road infrastructure |
| | Country-specific support plan Minor goals (cited) | ・ Infrastructure improvement (energy, transportation, and water system fields)<br>・ Social services (health care, medical care, education, and environmental measures)<br>・ Human resource development support (private sector) |
| JICA | Goals and high-priority measures | ・ Upgrading of economic and social infrastructure, which plays a critical role in maintaining economic growth, and development of human resources that help industrial development (power plant construction near Baku, water system development support in suburban cities, and human resource training to improve public services) |

⑥ Field study

1) Selecting study themes in accordance with local needs

Considering home construction and energy business techniques used by Hokkaido companies in an overview of Azerbaijan, such companies are unlikely to expand their business overseas to Azerbaijan.

Hokkaido has little experience in the field of petroleum and natural gas on the scale seen in Azerbaijan, and it might be difficult to show a housing advantage given the distinct climate conditions in Azerbaijan. On the other hand, some involvement by Hokkaido companies is possible in the fields of agriculture and tourism, for which the government has made efforts in a bid to promote the non-energy sector, while realizing a supply of agro-products of higher productivity and quality. Moreover, in the related food-processing industry, not only the improvement of added value through branding of Hokkaido foodstuffs, but also the development of secure, healthy and highly functional foods in response to the international boom of interest in well-being. In the area of tourism, Hokkaido attracted an increasing number of visitors from a variety of countries mainly in Asia, and accommodates a wide range of tourism needs.

Hearings with various ministries, stakeholders and companies in the first on-site survey recognized the necessity of developing agriculture and food processing in rural areas in particular and evening the economic disparity with cities. As in Hokkaido, some companies succeeded in those fields not only within the large city of Sapporo but also in outlying cities, we conducted a second on-site survey on the theme of agriculture, food processing, and tourism on the grounds that their experience and technology are applicable in Azerbaijan.

2) Organizing as development and needs in Azerbaijan

a) Agriculture and food processing industry

The Presidential decree of an Azerbaijani national development strategy published in 2012, AZERBAIJAN 2020: LOOK INTO THE FUTURE, designated agriculture as the key sector for promoting industrial diversification. It listed building of modern warehouses in suburban cities, control of agricultural price fluctuations, reduction of losses in agricultural production and storage processes, improvement of self-sufficiency rate, and enhancement of export capability as the issues to be addressed by the government. The government selected 2015 as the year of agriculture and worked for development of agriculture to achieve regional economic growth and improved self-sufficiency rates for major crops. According to the report made at the ministerial meeting of January 2016, the 2015 GDP in agriculture increased by 6.6% from the previous year. Note that the Azerbaijan government's official website[67] has reported that the self-sufficiency of potatoes was 90% while the country had aimed for 100% and that agricultural promotion must continue for food security purposes.

The government also wants to expand export of agricultural products. While Russia is having difficulty purchasing agricultural products from Western countries and Ukraine due to political problems, Azerbaijan is seeing a growing opportunity for exporting its fruits and vegetables to major Russian cities such as Moscow. Kazakhstan is also having difficulty procuring agricultural products via Russia, and Azerbaijan here too sees a future possibility. If Azerbaijan targets these countries as mid- to long-term agricultural product export markets, it needs to be price competitive, improve product quality, and establish product brands. In addition to the former Soviet Union, the Azerbaijani government has selected Turkey, Middle Eastern countries, and China as important markets and is now developing the logistics environment.

It is, however, necessary to ensure the quality of agro-products, branding strategy, stable supply, and competitive pricing capacity to assure a mid- to long term export niche when other Central Asian and Caucasian countries are also taking aim at the same markets.

b) Tourism industry

Table below shows the recent rapid growth of the Azerbaijani tourism industry. The number of hotels has increased mainly in Baku, and the sightseeing service business has also increased its profits.

Table 7-(6)-3 Growth of Azerbaijani tourism sector

| Year | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|
| Number of hotels | 499 | 508 | 514 | 530 | 535 |
| Tourism sector profit (in million USDs) | 766.6 | 1203.9 | 1479.0 | 1600.2 | 1633.4 |

* Doing Business in Azerbaijan 2015 (Azpromo)

[67] The offical website of the government of Azerbaijan（http://azerbaijan.az/portal/index_e.html?lang=en2016.0116）

According to *Doing Business in Azerbaijan 2015* (Azpromo), the number of inbound tourists roughly quadrupled, from 597,000 to 2,159,000, within six years from 2009 to 2014. The number of tourists is expected to further increase. This Azerbaijani government actively participated in tourism events in major European cities, simplified the visa process, and invited international conferences and various events to the country. The growth of the industry is the result of such government efforts. Furthermore, in February 2016, visitors from 12 countries including Japan, Korea, and Singapore became able to obtain entry visas at the airport on arrival. Through this initiative the government aims to further increase inbound tourism. During our field study, a person in the tourism industry commented in the interview that it was the perfect opportunity to attract tourists to Azerbaijan because nearby sightseeing areas such as Turkey and Egypt have become dangerous and the value of the Azerbaijan currency, the manat, has dropped..

One of the tourism promotion strategies is eco / green tourism. It provides travelers opportunities to remove themselves from busy cities, stay with local families, and appreciate the nature, culture, and lifestyle of local areas. To promote eco / green tourism, the Ministry of Culture and Tourism has been building a website that allows travelers to make accommodation reservations while current individual inbound eco / green travelers must make reservations via local coordinators. Eco / green tourism will not only promote the country's tourism industry but also generate employment and profit in areas outside Baku.

Issues concerning Azerbaijani tourism include: difficulty accessing local tourist attractions due to poor road infrastructure and not enough accommodation; the undeveloped hospitality and business mindset of tourism workers in terms of accommodation, meal, and transportation services compared to surrounding countries such as Armenia and Georgia; and limited road access from other countries.

Under these circumstances, Azerbaijani tourism and educational organizations are looking forward to investments and business expansion from Japan, including hospitality education and export of modern customer management systems, as well as collaboration of tourism companies between the two countries.

⑦ Future plans

Considering the strengths and interest of Hokkaido-based companies, private collaboration with Azerbaijan will focus on agriculture and food processing. Hokkaido's practical skills may be useful for the issues of agricultural productivity, quality consistency, and branding in Azerbaijan. Besides, the food processing industry is linked with the issue of regional development, by accelerating regional economic growth and creating steady employment. On the other hand, although Azerbaijan has been looking for investment from Japan in the resource development and petrochemical fields, Hokkaido-based companies cannot meet their expectations due to alack of investment experience in these fields.

Since the Azerbaijani government showed an interest mainly in exchanging tourism business information with Hokkaido in the first on-site survey, the possibility of private collaboration in the agriculture and food processing industries is low. Still, this document introduces some of the future collaboration plans created to promote exchanges with Azerbaijani counterparts.

1) Case of farming equipment

The Azerbaijani government has selected the agricultural sector as one of the non-oil industry sectors to be promoted and has decided to modernize agriculture and develop agricultural product supply systems targeting both domestic and international markets. The government in particular aims to raise the self-sufficiency rates of dry-field crops such as wheat, corn, and potatoes. Dairy farming is popular in Azerbaijan. The nomadic tradition of sheep herding continues as well. Farmers also raise milk cows, beef cattle, and chickens.

Azerbaijani agriculture needs stable supplies of agrichemicals, fertilizers, and equipment, and also supplies of high quality seeds and breeding cattle to improve productivity in the production phase. In the distribution phase, prevention of product quality deterioration during storage and distribution, and establishment of product brands in the international market are required.

On the other hand, in Hokkaido, farmland area per farming household is 23.4ha, or 14.6 times larger than that in other prefectures, and mechanization continues to progress. One notable technology is a compact cropping machine, characterized by its more affordable price than larger equipment, readiness for handling and maintenance, durability evolved through operations in varying land conditions in Hokkaido, and after-purchase services. Azerbaijan has some target crops in common with Hokkaido such as hay, potatoes and wheat. Especially for family-run small to mid-scale farmers with 5-25ha fields, mobile Hokkaido agromachinery may be more suitable on hilly landscapes than the larger machinery of Belarus or Europe.

As issues or solutions for Japanese companies to make inroads, it is essential to collect information identifying actual desirable machine types and specifications, and acceptable range of prices. Supply of spare components in case of malfunction or repair and follow-up service for maintenance are also necessary, along with a holistic approach for improved agro-productivity, incorporating relevant technologies in fertilizer and agrochemical input and agribusiness management. In Azerbaijan, the open joint-stock companies Agroleasing and Agrocredit

support the government's agricultural promotion program, and working with these companies may be another option.

Introduction of compact Hokkaido farming equipment will free Azerbaijani farmers from heavy labor and allow them to work more efficiently for a shorter period during the harvest season. Farmers should be able to reduce financial losses resulting from wasted produce and increase farmyard output and number of crop types cultivated through mechanization.

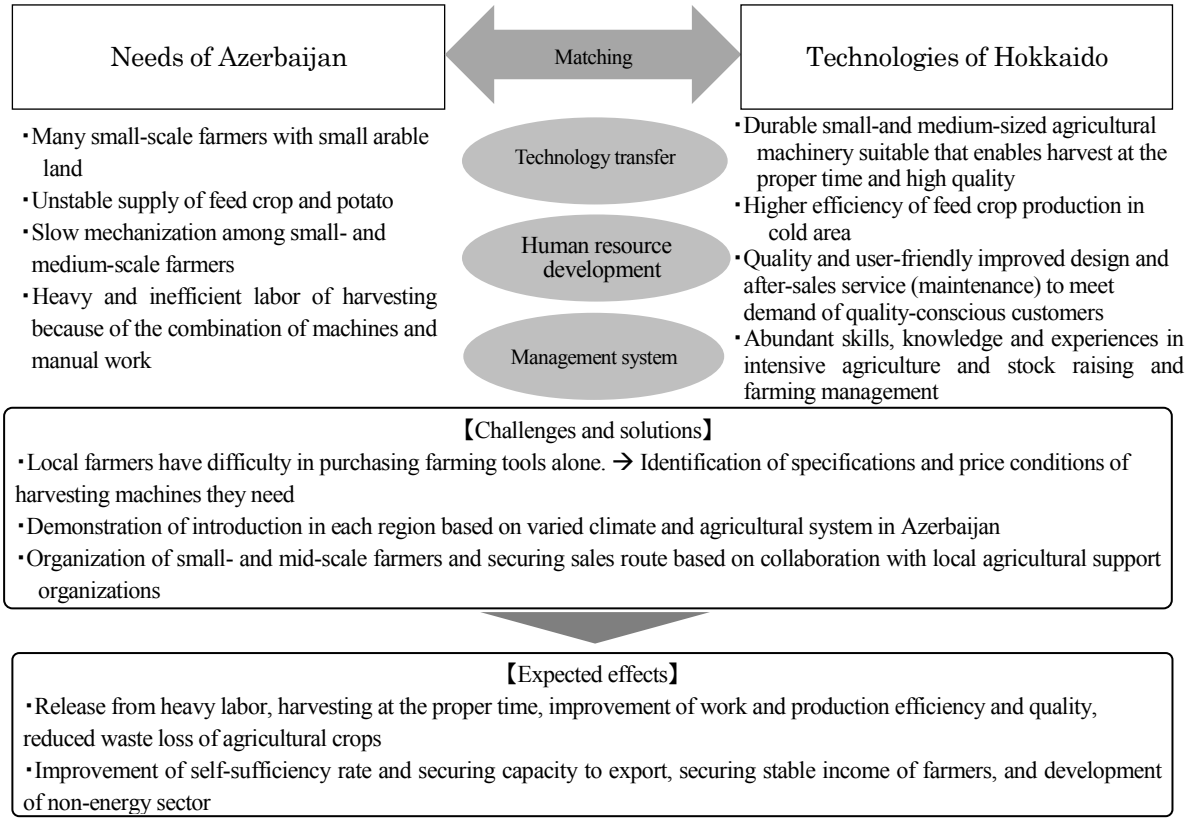



Figure 7-(6)-9 Future development plan for farming equipment

For grass packing
Medium-sized baler with cutter
IHI STAR Machinery Corporation

Pesticide spraying equipment
Toyo Agricultural Machinery Manufacturing

Compact potato harvester
SANEI INDUSTRY

Photo 7-(6)-1 Examples of Hokkaido farming equipment that may be introduced to Azerbaijan

2) Case of food processing

As part of a national strategy, the Presidential decree of "Azerbaijan 2020: Look into the Future," has specified the acceleration of food processing as a goal while also targeting the agriculture industry. The national strategy aims for Azerbaijan to produce domestic foods competitive with import items, expand exports, and enhance added value.

Presently, Azerbaijan exports processed foods such as dairy products, tea, vegetables and canned fruits among others. However, as its processing technology is behind Turkey and other CIS countries, the market needs for Azerbaijan products are limited to Russia and the surrounding countries. So, the issue going forward is to improve competitiveness through quality management including HACCP[68] and brand development.

On the other hand, since Azerbaijan is blessed with diverse climates it has an abundance of indigenous fruit trees and herbs, which have not been fully commercialized., Because there is a great need for functional foods utilizing these materials in Japan, and some attempts at raw material production and commodity production have been undertaken in Hokkaido, it is assumed that Japan will be interested in procuring primary processed products from Azerbaijan.

A company that runs a licorice cultivation business in Central Asia has started preparing for business in Azerbaijan.

By introducing the technology and knowledge that Hokkaido possesses to Azerbaijan based on the issues and needs of both Japan and Azerbaijan, it is possible to plan and implement projects that contribute to developing the food industries in both countries.

Table 7-(6)-4 Major indigenous fruit trees in Azerbaijan and their health value

| Item/production area | Efficacy, etc. |
|---|---|
| 1． Pomegranates<br>Goychay, Absheron | Dried skin of pomegranate is called pomegranate peels. Contains alkaloid, isopelletierine, tannin, vitamin C, etc. Drinking of infused pomegranate is effective for stopping diarrhea or getting rid of *Taenia solium* (pork tapeworm). Pomegranate juice is also effective for anemia. |
| 2． Persimmons<br>Zagatala, Gedebey, Aghstafa, Tovuz, Khanlar, Gazakh | Rich in vitamins C, K and B and other minerals and flavonoids, persimmons are said to have the effect of strengthening blood vessels and hemostasis and have long been used as a folk medicine drink. Recently they are thought to be effective for preventing pollinosis. In addition to leaves for making tea, supplements containing the contents are commercially available on the market. |

[68] HACCP (Hazard Analysis Critical Control Point): An international standard for food hygiene management by the Codex Alimentarius, a food issue committee organized by FAO (Food and Agriculture Organization) and WHO (World Health Organization); it is a management system in which food safety is addressed through the analysis and control of biological, chemical, and physical hazards from raw material production, procurement and handling, to manufacturing, distribution and consumption of the finished product.

| | |
|---|---|
| 3． Quince<br>Goychay, Ordubad, Babek, Nakhchivan, Aghdam, Jabrayil | Contains potassium, calcium, magnesium, phosphorus, iron, vitamin A, etc. and is considered effective for stomach and cardiovascular diseases. |
| 4．Feijoa<br>Entire areas | Rich in iodine, feijoa is thought to be effective to treat thyroid disease and arteriosclerosis, in addition to Vitamin C deficiency, gastrointestinal diseases and gastritis. Feijoa volatile oil is used by dermatologists as medicine for inflammation |
| 5．Sea buckthorn<br>Sheki, Zagatala | Contains Vitamins B1, B2, B3, B6, C, E and K, iron, potassium, calcium, magnesium, zinc, boron, and other essential nutrients for the human body. Sea buckthorn berries endemic to Russia are much larger than the Chinese variant *shaji*, containing a considerable amount of unsaturated fatty acids such as oleic acid, linoleic acid and linolenic acid. Its oil contains a lot of Vitamin E (20 times more than soy bean oil), Vitamin C (3 to 6 times more than kiwi), saponin (4 times more than ginseng). |
| 6．Cornus officinalis<br>Khachmaz, Guba, Sheki, Zagatala, Ismayilli | Fruits (actually accessory fruits) of cornus officinalis are used for an effective herbal analeptic, hemostatic or antipyretic medicine. Also used for Chinese medicines, and likely effective for treatment of diabetes, backache, arteriosclerosis, prostatic hypertrophy, etc. |

* Prepared by the survey team based on material from Professor Takashi Suzuki, Faculty of Agriculture, Hokkaido University and local interviews.

Reference：Development in funcitonal food sector in Hokkaido

- Hokkaidi with cool climate and vast idle land is most suitable for cultivation and production of medicinal plants in Japan and private companies are engaged in such activities at various locations there. Hokkaido Association for Bio-Business that promotes functional food business there organizes research sessions for entry in the global market.
- There are various native herbs in Armenia, including sea buchthorn native to mountains, and using them as raw amterials of functional food will contribute to business promotion of both countries.

Examples of Projects Using Northern Fruits and Medicinal Plants (Hokkaido)

| Comapny | Region | Overview | |
|---|---|---|---|
| Yubari tsumura Co., Ltd. | Yubari | Established in 1999. Regarded Hokkaido as production base of medicinal plants in Japan and has launched expansion of processing facility. The production area is increased by over 200% to 10 million square meters by 2020. It began planting 4,200 medicinal trees to be used as raw materials of natural medicine in 2015. | |
| Oji Holdings Corp. | Shimokawacho | Raising seedlings and cultivation of medicinal plants under a collaborative agreement on medicinal medicine research in 2013. It conducts R&D for high value addition and product developent in Hokkaido that is suitable for mechanization as it has vast farmland to realize cost reduction based on mass cultivation. | |
| Endougumi Co., Ltd. | Mukawacho | Cultivation and processing of domestically grown sea buchthorn. It particularly focuses on jam and cosmetic product and local specialty product development. |  <br>Bread paste Fruit sauce<br>http://www.endou-gumi.co.jp/berry/top.html |

*Produced by HIT based on press release, etc.

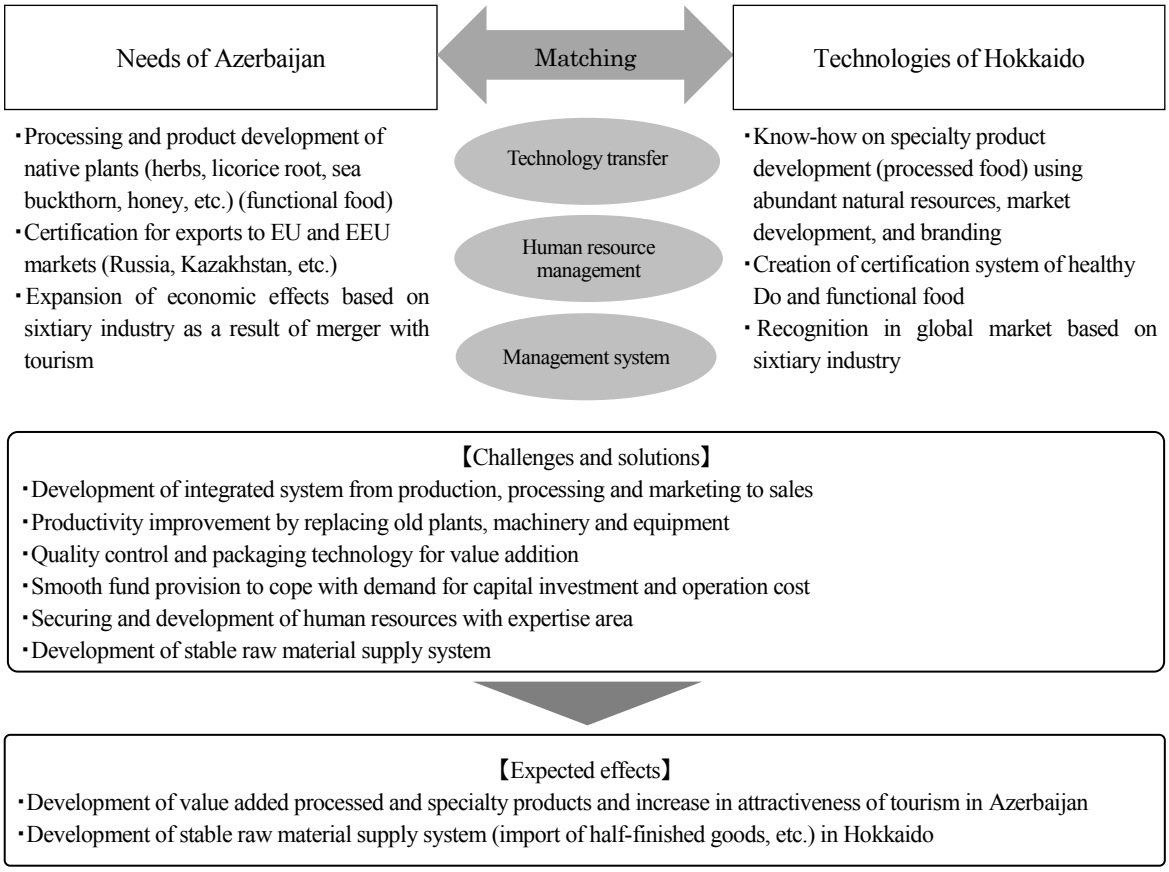



Figure 7-(6)-10　Future development plan (the case study of food processing)

Reference: Potential of agricultural cooperation through tourism promotion by developing the sixth economy sector

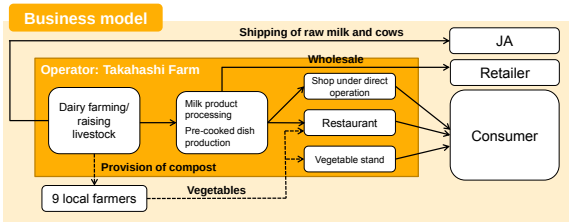
## Success examples of promotion of the sixth economy sector in Hokkaido

(1) Takahashi Farm Co., Ltd.
(Production x Processing x Direct sales/Restaurant)

**Overview**

- Raises 260 milk cows to produce approximately 1,200 tons of raw milk.
- Sells confectionery (cream puffs, puddings, etc.) and milk products (ice creams and yogurt drinks) made of fresh raw milk of its ranch in the shop under direct operation.
- A restaurant is open where vegetables sold at farmers' market and other locally produced food are used in collaboration with nine local farmers. A buffet lunch centered on vegetables is served.

**Business model**

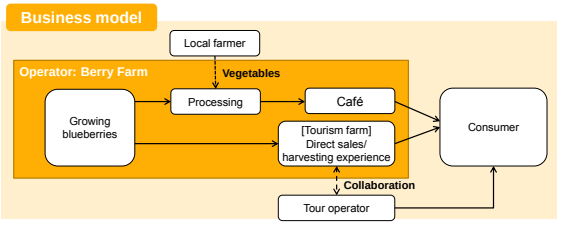



(2) Berry Farm Company
(Tourism farm)

**Overview**

- 16 types of blueberries are cultivated.
- The tourism farm is open to sell blueberries directly and/or provide hands-on harvesting experience to visitors. A travel product has been developed in collaboration with tour operators.
- Obtained the certification of comprehensive business planning for the sixth industrialization in 2012. A café is open on the site of the tourism farm to sell more than 50 types of *gelato* (Italian ice cream) made from blueberries grown in their own farm as well as local farms.

**Business model**




Example ① Facility and processed goods of Takahashi noen Co.

Example ② Blueberries and processed goods produced by Berry farm Co.

＊Materials prepared by HIT

(7) Tajikistan

① Geographical characteristics

The total area of the republic of Tajikistan is 143,100 ㎢ which is almost same as the area of Hokkaido (83,450 ㎢) and Tohoku (66,890 ㎢) combined. The country shares a border with Uzbekistan in the west, Kyrgyzstan in the north, Afghanistan in the south and China in the east. About 93% of the land is in mountainous areas such as the Pamir, Gissar-Alai and Tian Shan. The areas surrounded by these mountain ranges are the Fergana Valley in the north, Zeravshan Basin in the north-west, Vakhsh Basin and Gissar Valley in the south-west. The land in these areas is rich and fertile.

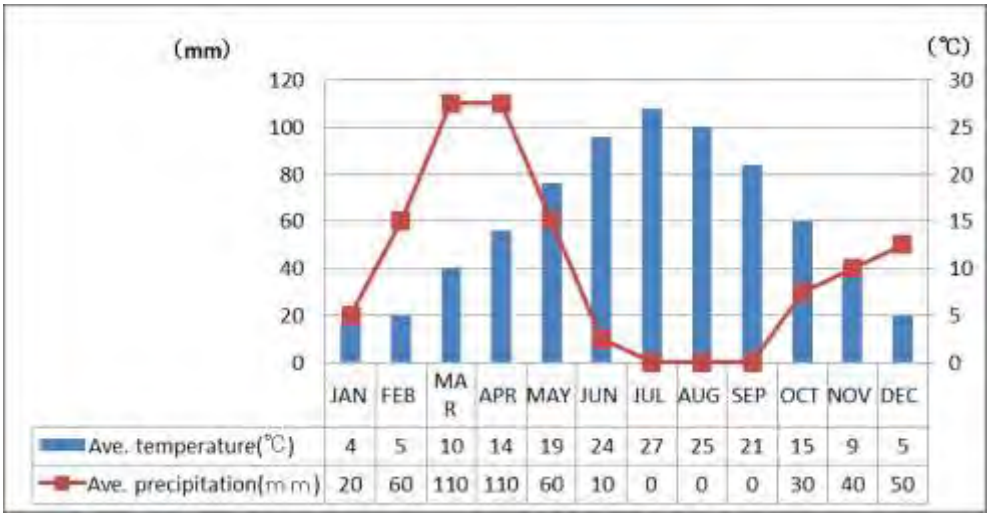
There are 947 rivers of over 10km such as the Panji River, Syr Darya River, Vakhsh River, Zeravshan River and also large lakes such as Sarez Lake and Karakul Lake.


Source: Ministry of Foreign Affairs

Figure 7-(7)-1 Location of Tajikistan

② Climatic features

The climate of Tajikistan is continental, and belongs to subtropical, semi-arid, or arid. Typical weather is characterized by wide day-night temperature differences with harsh sunlight and high temperatures during the day while chilly at night. Mean temperature and precipitation in the capital Dushanbe are as follows: the highest monthly average temperature occurs in July —27℃, and the lowest in January —4℃.




Source：weatherbase（http://www.weatherbase.com/）

Figure 7-(7)-2　Average precipitation and average temperature (left: mm, right: ℃) [69]

③ Administrative districts

Tajikistan consists of two oblasts and a directly-controlled municipality including the capital with one autonomous region.　The capital city, Dushanbe, hence administratively assumes the same position as a province (an ordinance-designated city of Japan). Each province has sub-regional districts as listed below, numbering 58 in total.

Table 7-(7)-1　Administrative regions of Tajikistan

| Administrative divisions | Central city | Number of districts |
|---|---|---|
| Sughd region | Khujand | 14 |
| Region of Republican Subordination | Dushanbe | 13 |
| Khatlon region | Kurgan-Tyube | 24 |
| Gorno-Badakhshan Autonomous Region | Khorugh | 7 |

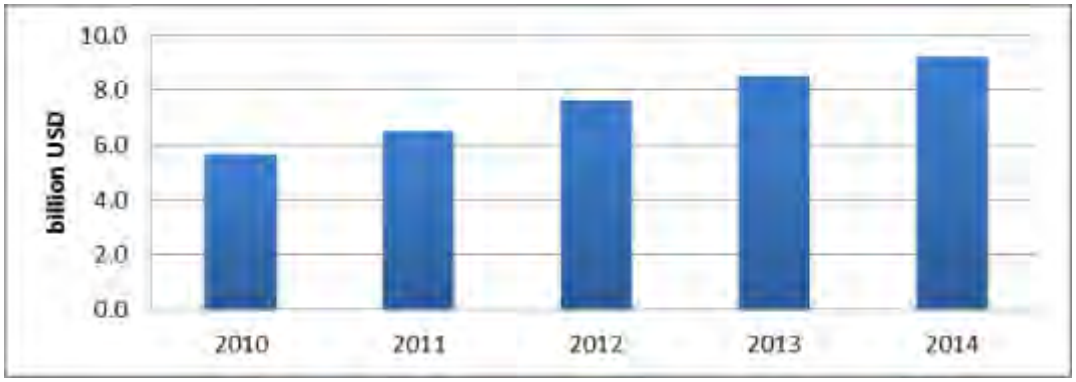
[69] Temperature : The average of 72 cities and 104 years　Precipitation : The average of 72 cities and 101 years


Figure 7-(7)-3 Administrative division map of the republic of Tajikistan

④ General condition of Tajikistan

1) GDP

The nominal GDP in 2010 was (US)$5.6 billion, and $9.2 billion in 2014, showing a steady increase. The average annual growth rate between 2010 and 2014 reached a relatively high standard at 7.1%. The estimated economic growth rate for 2015[70], however, declined to -13.0%, or $8 billion in GDP, which is attributable to the economic downturn in its major export markets, Turkey and Russia.




Source: World Bank

Figure 7-(7)-4 Recent transition of GDP in Tajikistan

[70] IMF World Economic Outlook (2015.10)

2) Industrial features

The GDP breakdown is as follows: 27.2% agriculture, 21.6% manufacturing, 51.2% services[71]. Major industries are agriculture (cotton), livestock farming, aluminum production and hydropower generation. In manufacturing, fiber industries based on cotton production and large-scale aluminum plants have been operated since the former Soviet era. Thanks to mountains on a scale over 7000m and rapidly flowing rivers along the extended valleys, the subtropical regions are blessed with water resources which have been put to use for agricultural irrigation facilities and hydroelectric power for refining aluminum.

With this background, Tajikistan has been able to provide 97.7% its annual electric power generation (14.4 billion kW/h in 2001) through hydropower. While bauxite —the aluminum ore, is imported from the Ukraine, the state-owned corporation TALCO takes charge of its worldwide-scale refiningt and production. Though an a smaller scale, other mineral resource includes gold, silver, copper, molybdenum, and antimony —which has been increasing in value.

3) Trade

The recent trade balance of Tajikistan shows an expanding deficit (import surplus in spite of rising exports), probably due to the influence of downturn in the economies of its major export partners such as Turkey, China, and Russia.

Major export items are textiles and textile products (mainly cotton and cotton products), electricity and fruits and vegetables. The major export markets are Turkey, China, Russia, Kazakhstan, Switzerland and Iran. Major import items are oil products, minerals (mainly alumina and bauxite for aluminum production), wheat and flour, animal and vegetable oils, sugar and confectionery products. The major suppliers of imports are Russia, Kazakhstan, China, USA, Turkmenistan, Iran, Ukraine and Kyrgyzstan.

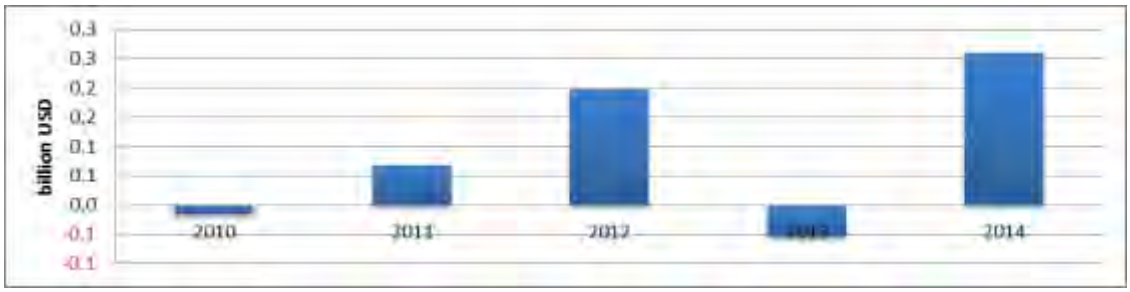

Source: World Bank

Figure 7-(7)-5 Recent transition of amount of trade

[71] CIA world FACTBOOK (2014)

4) Foreign Direct Investment (FDI)

FDI in Tajikistan recorded negative figures in 2010 and 2013, indicating that the value of preceding investments was exceeding that of new foreign investment made in each of those years. After 2013, however, FDI turned upward and positive by 2014.




Source: World Bank

Figure 7-(7)-6 Recent transition of direct investment

5) Principal overseas investment

In 2007, the Foreign Investment Deregulation Law was revised in order to offer equal national support and opportunities for investors in Tajikistan to promote foreign investment in the domestic financial market and introduction of international management skills important to the economy of the country.

6) State of economic partnership between Japan and Tajikistan

The value of exports from Japan to Tajikistan is 1.5 billion yen. The major export items are machinery for construction and mining, cars and electrical equipment. On the other hand, the value of imports from Tajikistan to Japan is 150 million yen. Major import items are non-ferrous metals. As for the bilateral treaty between Tajikistan and Japan, the continuity of the treaty concluded between Japan and the former Soviet Union has been confirmed.

7) State of economic partnership with the surrounding countries

China has a considerable influence on the economic development policy of Tajikistan. Tajikistan is pushing to join the WTO and now participates in it as an observer. Also the country is a member of CIS, Shanghai Cooperation Organization and Organization of the Islamic Conference.

⑤ Possible private partnership with Hokkaido

The Country Assistance Policies (CAP) of the Japanese government for Tajikistan designate improvement of basic social services, regional development through agricultural and industrial promotion, and economic infrastructures mainly for transportation and distribution (road maintenance and management) as primary sectors, for which the experience of Hokkaido may be applicable to the fields of agro-development and industrial promotion. According to this policy, the knowledge and special skills of Hokkaido as listed in 3-(4), and aforementioned features of Tajikistan (in ①-④), agriculture and livestock farming are considered to have potential for private partnership.

As a future theme of the agricultural sector in Tajikistan, where processing businesses are less advanced, it is desirable to work out issues in the agro-production area in terms of efficient upgrading of primary industry, quality enhancement and stabilized supply. Once a stable output of qualified agro-products becomes practicable, enlargement of processing facilities becomes possible. Because employment opportunities are limited within the country, money sent from expat workers overseas, chiefly Russia, is a critical source of income for families residing in Tajikistan.

It may also be possible to reduce the number of workers leaving with increased local recruitment, by encouraging agricultural processing for added value and relevant fields of distribution services after production conditions for primary products improve. In other words, processing of domestically produced agro-products and raw milk within the region and developing distribution frameworks will create local employment and an environment in which members of a family can live together, resulting in the stable development of each locality. Through its hundred-year history, Hokkaido has seen enforced competitiveness through processing industry promotion and food branding, raising itself from the position of a cheap raw materials supplier.

On the other hand, from the viewpoint of Hokkaido-based companies, partnerships with Tajikistan are needed in functional foods, for which research and development are currently in progress. Demand for foodstuffs is growing at home and abroad, and some companies and organizations show great interest in raw ingredients production for functional foods and have conducted joint studies and research with overseas bodies with international cooperation in mind. One example of a private partnership in this regard is a preparation survey for licorice production (through the "Base of Pyramid business promotion partnership") by Cokey Systems Co Ltd., whose personnel were also invited to a seminar held in Hokkaido as a part of this survey. With such examples, the progress of other private partnerships between Hokkaido and Tajikistan may be realized.

Tajikistan, however, has a low standard of GDP compared to other Central Asian countries, and it is difficult for private companies to cope with private partnership projects independently. Although it is potentially possible to obtain ingredients for functional foods and build processing facilities in the southern region rich in natural resources, it may not be practical to bring forward the partnership until the security situation in these areas becomes stable. Therefore, it is desirable to start with nurturing the trust relationship through regional exchange of training projects between Tajikistan and Hokkaido.

Table 7-(7)-2　Outline of Tajikistan

| | | | | | |
|---|---|---|---|---|---|
| General outline | Area | Population *1 | Capital | Official language | |
| | 143,100　㎢ | 8.3 million | Dushanbe | Tajik | |
| | Ethnic group | Language | Religion | — | |
| | Tajik (84.3%), Uzbek (12.2%) | Tajik, Russian | Sunni Muslim, Isma'ilism | | |
| | Geographical characteristics: Most of the land is in mountainous areas. It shares the borders with Uzbekistan and Kyrgyzstan. | | | | |
| Economic indicator | GDP / person *1 | Economic growth rate *2 | Import value *1 | Export value*1 | |
| | US$949.5 | -12.9% (expected value, 2015) | US$43.44 billion (2013) | US$15.25 billion (2013) | |
| | Currency unit | Exchange rate for dollars | — | — | |
| | Somoni (TJS) | 1 USD = 7.11 TJS ( As of December, 2015 ) | | | |
| | Nominal GDP (billion USD) | 2010 | 2011 | 2012 | 2013 | 2014 |
| | | 5.6 | 6.5 | 7.6 | 8.5 | 9.2 |
| | Major export item | Textile, textile products, electricity, fruits and vegetables | | | | |
| | Major export counterpart | Turkey, China, Russia, Kazakhstan, Switzerland, Iran | | | | |
| | Major import item | oil products, minerals, wheat and flour, animal and vegetable oils, sugar and confectioneries | | | | |
| | Major import counterpart | Russia, Kazakhstan, China, USA, Turkmenistan, Iran, Ukraine, Kyrgyzstan | | | | |
| Relations with Japan | Export to Japan *3 | Major export item to Japan*3 | Amount of import figure from Japan*3 | Major import item*3 | |
| | 1.5 million yen | non-ferrous metal | 15.0 million yen | machinery for construction and mining, cars and electrical equipment | |
| | Principal treaty・agreement | The succession of treaties concluded between Japan and Soviet has been confirmed ( 1994.4.7 ) | | | |
| | Number of Japanese | 2 local Japanese companies　1 (2014) | | | |

| | | |
|---|---|---|
| | companies *4 | |
| Investment policy | Prioritized investment sector | Agriculture, stock raising, rare metals |
| | Main agency | Ministry of Economic Development, State Committee on Investments and State Property Management |
| | Outline of Investment Law | State Committee on Investments and State Property Management, Ministry of Economic Development |
| | Preferential treatment for foreign investment (tax) | Development of free trade zone |
| Others | Main distribution route | Japan→（sea）→China→（train）→Kyrgyzstan→（land）→Tajikistan |

Source：World Bank data, JETRO, HP of Ministry of Foreign Affairs, HP of Japanese Embassy, statistics by Ministry of Finance, Agency on statistics under President of the Republic of Tajikistan, research group by CIS committee

*1: World Economic Outlook (IMF), 2013

*2: IMF World Economic Outlook (Oct. 2015)

*3: Foreign trade statistics by Ministry of Finance

*4: MOFA, Kaigai-zairyu-houjin-suu chousa-toukei (“Statistics on the number of Japanese living overseas”), summary ed., 2016

(8) Turkmenistan

① Geographical characteristics

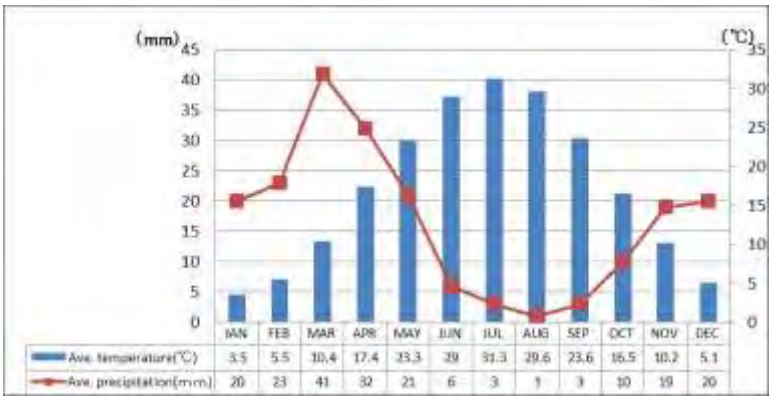
The total area of the republic of Turkmenistan is 488,100 ㎢ which is about 1.3 times greater than Japan (377,900 ㎢) . The country is located in the south-western part of the Central Asia and faces the Caspian Sea in the west. Most of the land is lowland or plateau except for Kopet Dag at the border with Iran and Barchan in the north-west. More than 70% of the land is occupied by the Karakum Desert.


Source: Ministry of Foreign Affairs

Figure 7-(8)-1 Location of Turkmenistan

② Climatic features

The most of the territory is classified as having a hot and dry desert climate. The average temperature in July reaches 30℃ and that in the winter falls to near 0℃. The capital, Ashkhabad, has rain from winter to spring, but the annual precipitation is less than 200mm; while mean monthly temperature in July is as high as 31.3℃, it drops to 3.5℃ in winter.




Source：weatherbase（http://www.weatherbase.com/）

Figure 7-(8)-2 Average precipitation and average temperature (left: mm, right: ℃) [72]

[72] Temperature : The average of 37 cities and 93 years Precipitation : The average of 37 cities and 84 years

③ Administrative districts

Turkmenistan consists of five oblasts (provinces) and the municipality of Ashgabat, the capital, which has the same status as a province and doesn't belong to any division.

Table 7-(8)-1 Administrative division of Turkmenistan

| | Name of region and city | Capital |
|---|---|---|
| 1 | Balkan region | Balkanabat |
| 2 | Daşoguz Region | Daşoguz |
| 3 | Ahal Region | Anau |
| 4 | Lebap Region | Türkmenabat |
| 5 | Mary Region | Mary |
| Capital | Ashgabat City | |

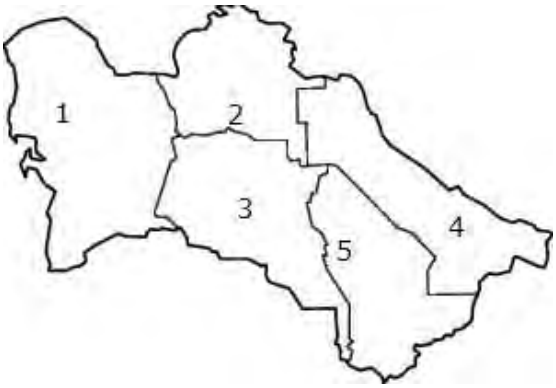
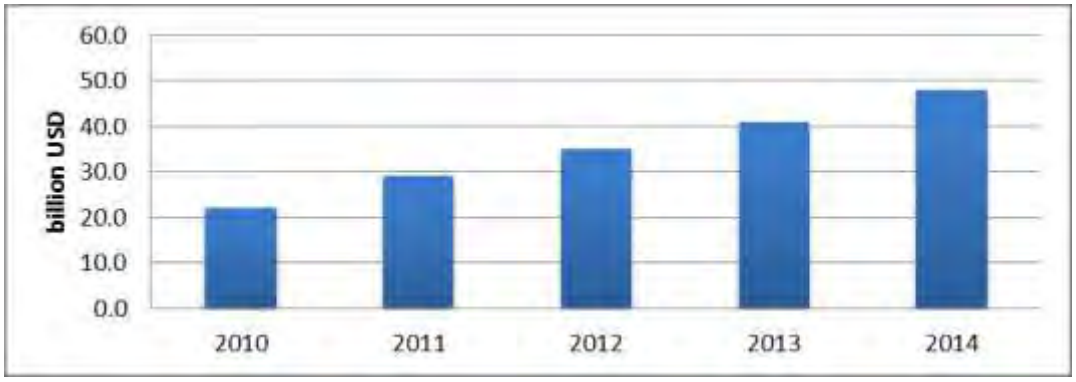



Figure 7-(8)-3 Administrative division of Turkmenistan

④ General condition of Turkmenistan

1) Gross Domestic Product (GDP)

The nominal GDP of Turkmenistan has been rising steadily from (US)$22.1 billion in 2010 to $47.9 billion in 2014 based on favorable resource prices, while the average growth rate during the five-year period was a strong 11.1%. However, the year 2015 saw a drop in the price of natural gas, one of its major exports, leading to a decline in the estimated value of GDP in 2015 to $44.4 billion.[73]




Source: World Bank

Figure 7-(8)-4 Recent transition of GDP

2) Industrial features

The GDP breakdown of Turkmenistan is 12.7% agriculture, 49.3% manufacturing and energy, and 37.5% services[74]. Main industries are natural gas, oil, cotton farming and textiles. Abundant natural gas sustains its economy, with estimated reserves ranked fourth in the world after Iran, Russia and Qatar. It exports to China, Russia and Iran through a pipeline put into full operation in 2010, while China has become the largest export market for Turkmenistan with a more than 60% share of the output.

In addition, sheep farming and cotton cultivation are common using irrigated land; fiber and carpet-related light industries as well as fertilizer and agrochemical industries are also operated..

3) Trade

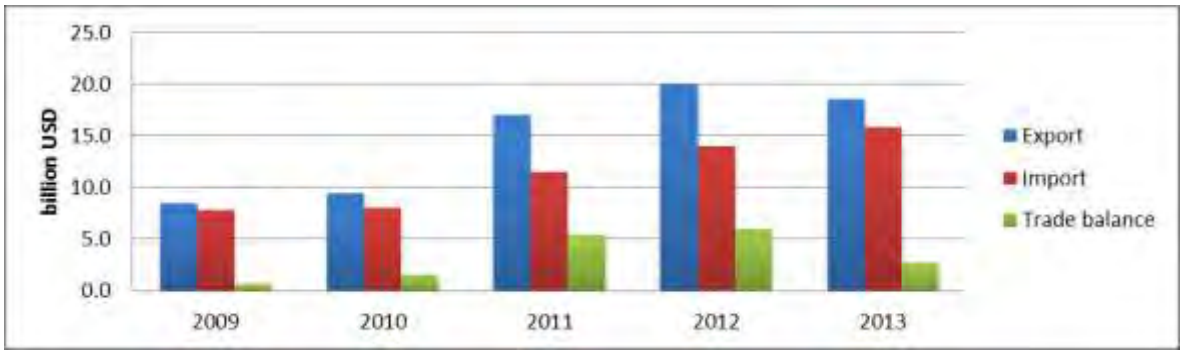
Major export destinations for Turkmenistan are China, Russia, Iran, Turkey, Italy, and the UK, while main export items are natural gas, petroleum, oil products, textile and cotton fiber. Major countries supplying imports are Turkey, Russia, China, Iran, the US, and Ukraine, while main import items are production technology plants, electrical devices, mechanical apparatus and shipping equipment.

While imports to Turkmenistan have been on the increase since 2009, its exports rose up to 2012, then dropped

[73] IMF World Economic Outlook Database in October 2015

[74] CIA world FACTBOOK

slightly in 2013. This is probably due to the decline in exports to Italy and Russia, affected by ongoing economic stagnation in Europe and Russia.

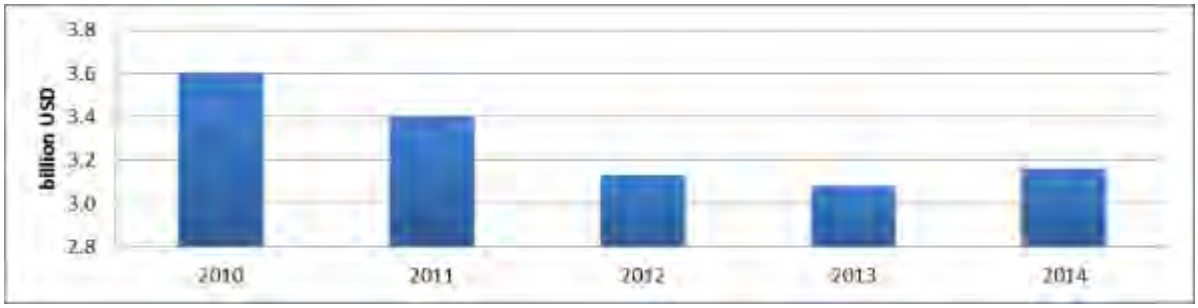



Source: State Committee of Statistics

Figure 7-(8)-5 Recent transition of trade balance in Turkmenistan

4) Foreign Direct Investment (FDI)

The proportion of FDI within Turkmenistan is limited, because internal domestic investment is strongly encouraged by the government; the figure for the public sector is 77.6% whereas that for the foreign capital sector is only 15.6% and to the public sector —6.8%. Besides, the 46.1% and 85.2% of the total investment in public and foreign capital sectors, respectively, are related to natural gas (or organic compounds). Therefore, the primary element of investment in the public sector is in natural gas, and investment by foreign capital and private companies remains more or less on a marginal scale.




Source：UNCTAD (United Nations Conference on Trade and Development)

Figure 7-(8)-6 Recent transition of direct investment

5) Principal foreign investment

In 2008, "The Law of Turkmenistan on Foreign Investments" came into effect to establish a legal basis for activities by foreign investors and companies participating in foreign investment in Turkmenistan and to attract foreign investment and its efficient use for the country. The law made it possible for foreign capital to acquire land and companies, and set up enterprises.

In addition, the "Japan-Turkmenistan Network for Investment Environment Improvement" was established for the purpose of promotion of trade and investment between Japan and Turkmenistan, and through which information exchange in the following areas is expected:

- Regulations stipulating conditions related to economic activities, investment and other relevant fields
- Exhibitions, trade fairs, or events to facilitate association between economic organs of the two countries including deployment of economic missions
- Other information on trade and economic issues

6) State of economic cooperation between Japan and Turkmenistan

As of 2014, the value of exports from Japan to Turkmenistan is ¥6.33 billion while the major export items are construction and mining machinery and electrical equipment. The value of imports from Turkmenistan to Japan is ¥6 million and the major item is raw material[75], 50% of which is accounted for by cotton litter —down-like short fiber on the surface of seeds left out of longer fiber. It is used for paper production in place of regenerated fiber or wood pulp.

As a part of visible economic partnership, the Japan Bank for International Cooperation (JBIC) and the government of Turkmenistan have agreed to provide financing of up to 45 billion yen for constructing an ammonia fertilizer production plant. Sojitz and Kawasaki Heavy Industries have acknowledged the order.

President Berdimuhamedow visited Japan in 2013. In the summit, six consensus documents were signed including a "Joint Statement between Japan and Turkmenistan on the New Partnership" and "technical cooperation agreement." At the private level, Sojitz and Mitsui Engineering & Shipbuilding won a construction contract for a sulfuric acid production plant for which financing of about 20 billion yen is supported by JBIC.

Moreover, Prime Minister Abe visited Turkmenistan for the first time, and came to an agreement to carry out economic cooperation on a scale of $2.2 trillion in gas plant projects and power plant construction. In concrete terms, Sumitomo Corporation accepted an order for thermal plant construction from Turkmenenergo, the state-owned electric generation company; and Mitsubishi, Chiyoda, Soujitsu, ITOCHU, and JGC Corporations jointly came to terms on the establishment of gaseous pretreatment facilities that remove environment pollutants such as hydrogen sulfide in natural gas fields in Turkmenistan. The enterprise body for the project is state-operated Türkmengaz. Of the total project expense of ¥1 trillion, the Japan side is responsible for ¥700 to ¥800 billion of the budget aid, provided through Japanese banks, JBIC, and Nippon Export and Investment

[75] Researched by Ministry of Finance as of 2014

Insurance (NEXI).

7) State of economic partnership with countries other than Japan

Turkmenistan regards the US, China, and Turkey as principal trade partners, but also maintains close connections with Russia and Iran in terms of trade. Also, the value of trade with Afghanistan neighboring to the south has been increasing every year. Turkmenistan does not form alliances with particular nations, and declared permanent neutrality in 1995. The country takes part in the CIS, but participates in an unofficial status by not ratifying the charter.

⑤ Possibility of private partnership with Hokkaido

Considering the technologies and knowledge available in Hokkaido and the features of Turkmenistan, the possibilities for private partnership with Hokkaido-based companies are limited. Considering the association with Japanese enterprises, characterized by large-scale infrastructure resource exploitation and chemical plants it is difficult to imagine what Hokkaido can offer. Agriculture and livestock farming is also a significant industry in Turkmenistan, but Hokkaido, which developed agriculture production suited to its cold climate along with energy saving skills, and Turkmenistan privileged with temperate climate and rich energy resource have little in common.

Table 7-(8)-2 Outline of Turkmenistan (as of February, 2016)

| | | | | | | |
|---|---|---|---|---|---|---|
| General outline | Area | Population *1 | | Capital | | Official language |
| | 488,000 ㎢ | 5.3 million | | Ashgabat | | Turkmen |
| | Ethnic group | Language | | Religion | | — |
| | Turkmen (81%) | Turkmen, Russian | | Sunni Islam | | |
| | Geographical characteristics: Most of the land is occupied by Karakum Desert. | | | | | |
| Economic indicator | GDP / person *1 | Economic growth rate *2 | | Import value *1 | | Export value*1 |
| | USD 9,032 | 7.4% (Estimated value, 2015) | | US$15.6 billion | | US$ 25.8 billion |
| | Currency unit | Exchange rate for dollars | | — | | — |
| | Manat | 3.5 (fixed rate) | | | | |
| | Nominal GDP *1 (billion USD) | 2010 | 2011 | 2012 | 2013 | 2014 |
| | | 22.1 | 29.2 | 35.2 | 41 | 47.9 |
| | Major export item | Natural gas, oil, oil products, textile, cotton textile | | | | |
| | Major export counterpart | China, Russia, Iran, Turkey, Italy, UK | | | | |
| | Major import items | Specialized production plants, electrical equipment, mechanical equipment, material and consumer goods (non-food), shipping equipment | | | | |
| | Major import counterparts | Turkey, Russia, China, Iran, USA, Ukraine | | | | |

| | | | | |
|---|---|---|---|---|
| Relations with Japan | Export value to Japan *3 | Major export items to Japan *3 | Import value from Japan *3 | Major import items *3 |
| | 6 million yen | Raw material | 6.33 billion yen | Construction and mining machinery, electrical equipment |
| | Principal treaty・agreements | The succession of the treaty concluded between Japan and Soviet has been confirmed.（1995.1.11） | | |
| | Number of Japanese companies *4 | 3 local Japanese corporations | | |
| Investment policy | Prioritized investment sector | Natural gas | | |
| | Main agency | Ministry of Economics and Development | | |
| | Outline of Investment Law | Foreign investment law, Japan-Turkmenistan Network for Investment Environment Improvement | | |
| | Preferential treatment for foreign investment (tax) | Free economic zone, preferential tariffs | | |
| Others | Main distribution route | Japan→（sea）→China→（train）→Kazakhstan→（train）→Uzbekistan→（train）→Turkmenistan | | |
| | Financial environment | Policy rate：5.0%（2014.12）、Rate of increase in consumer price index：6.0%(2014) | | |

Source：World Bank data, JETRO, HP of Ministry of Foreign Affairs, HP of Japanese Embassy, statistics by Ministry of Finance, Agency on statistics pf Turkmenistan, research group by CIS committee

*1: World Economic Outlook (IMF), 2013

*2: IMF World Economic Outlook (Oct. 2015)

*3: Foreign trade statistics by Ministry of Finance

*4: MOFA, Kaigai-zairyu-houjin-suu chousa-toukei (“Statistics on the number of Japanese living overseas”), summary ed., 2016

(9) Georgia

① Geographical features

The total area of the republic of Georgia is 69,700 ㎢ which is slightly more than 80% that of Hokkaido (83,450 ㎢). It is bordered by Russia, Turkey, Armenia and Azerbaijan.

Fifty percent of the land is mountainous, 30% piedmont and 10% lowland. The country is roughly divided into eastern and western halves by the Likhi Range at its center. The main rivers are the Kura River in eastern Georgia and Rioni River in western Georgia. The Kura is a large river of 1,515km total length with a basin area of 188,000 ㎢ and flows from the Armenian Plateau to the Caspian Sea through the Lesser Caucasus and Azerbaijan. The total length of the Rioni River is 288km. It has its source in the Caucasus Mountains and drains into the Black Sea.


Source: Ministry of Foreign Affairs

Figure 7-(9)-1 Location of Georgia

② Climatic features

The climate of most of Georgia is classified as humid subtropical. The western half facing the Black Sea has high precipitation and high humidity, while some coastal areas with particularly heavy rainfall are classified as subtropical. The same designation applies to the eastern half, but the capital Tbilisi lies inland and hence is dry, being relatively hot in summer and cold in winter.

The mean temperature of Georgia in July is 22.6℃, and 4.7℃ in January, national annual precipitation being 864mm. Mean monthly temperatures for each month and precipitation at Tbilisi are shown in the chart below; the highest month is July —24.5℃, while the lowest is January —1.2℃. The month with the least precipitation being January, April through June see more rainfall with the most, 80mm in May. Depending on the season and local conditions, torrential rain may pound the land and the mountainous regions in the north may be covered with enough snow for skiing in winter.


Source：weatherbase（http://www.weatherbase.com/）

Figure 7-(9)-2　Average precipitation and average temperature [years 2005-2014] (left: mm, right: ℃)

③ Administrative districts

Georgia consists of 12 administrative districts: 2 autonomous republics, 9 regions and Tbilisi municipality. The population of Tbilisi, the capital, is 1,118,000 (2014) which is about 25% of the total population of the country.

Table 7-(9)-1　Administrative division of Georgia

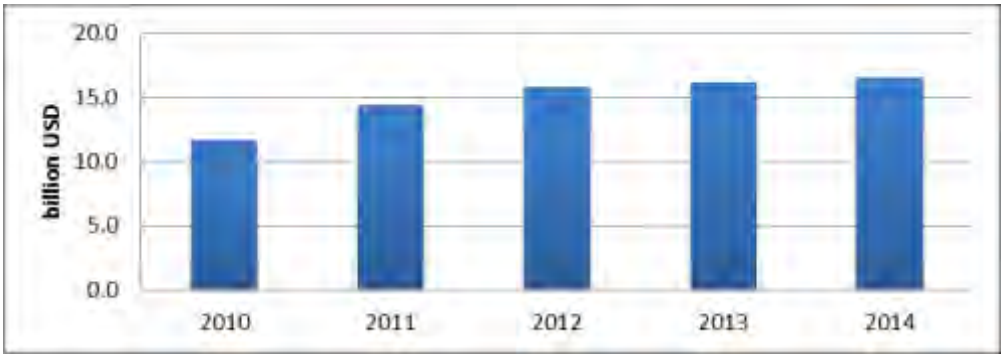
| | Region | Central city |
|---|---|---|
| 1 | Abkhazia Autonomous Republic | Sukhumi |
| 2 | Samegrelo-Zemo Svaneti Region | Zugdidi |
| 3 | Guria Region | Ozurgeti |
| 4 | Adjara Autonomous Republic | Batumi |
| 5 | Racha-Lechkhumi and Kvemo Svaneti Region | Ambrolauri |
| 6 | Imereti Region | Kulaisi |
| 7 | Samtskhe-Javakheti Region | Akhaltsikhe |
| 8 | Shida Kartli Region | Gori |
| 9 | Mtskheta-Mtianeti Region | Mtskheta |
| 10 | Kvemo Kartli Region | Rustavi |
| 11 | Kakheti Region | Telavi |
| 12 | Tbilisi Municipality | Tbilisi |


Figure 7-(9)-3 Administrative districts of Georgia

④ Outline

1) Gross Domestic Product (GDP)

Since 2010, nominal GDP has shown a moderate increase from (US)$11.6 billion to $16.5 billion in 2014. Average growth rate during the five years (2010-2014) is a steady 5.5%, thanks to its relative independence from the influence of international commodity markets for energy and cereals and the success of active bidding for foreign investment. The estimated value for 2015, however, shows a decline to $13.8 billion.




Source: World Bank

Figure 7-(9)-4 Recent transition of GDP

2) Industrial features

The GDP breakdown is as follows: agriculture 9.2%, industry 24.4% and service industries 46.7%. Major contributors are agriculture, food processing, mining, physical distribution and tourism.

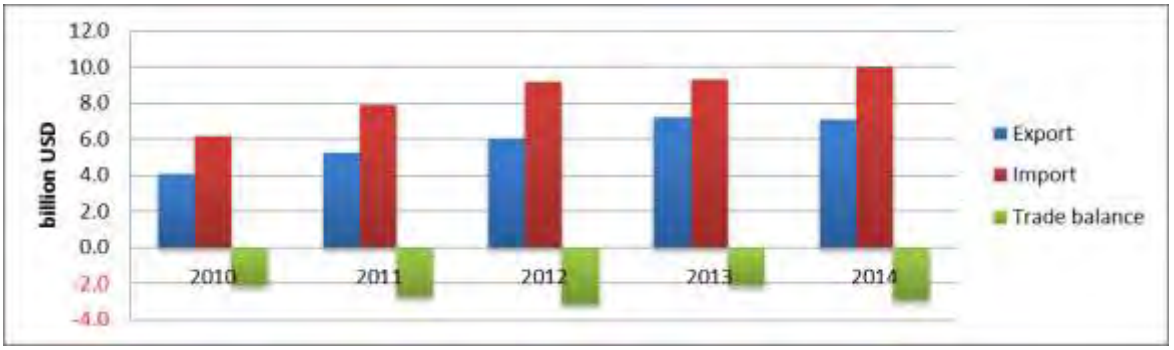
Grapes and tea leaves in the agricultural sector and alcoholic beverages in the food industry, particularly cognac and wine, are well known. Georgian wine was put on the World Heritage list 1n 2013 by virtue of its unique kevri wine-making technique said to have a 6000-year history, and has had a mounting reputation in recent years. The Georgian government took this opportunity to direct promotion of wine export and tourism. With respect to manufacturing, besides production and machinery, there is light industry for silk, wool, and spinning. As a part

of the energy sector, a pipeline connecting the Baku oil field in Azerbaijan and Ceyhan port in Turkey (BTC pipeline) passes through Georgia, providing revenue from usage fees.

3) Trade

The trade balance of Georgia in the past five years shows an ongoing deficit (import surplus), which is inclined to expand along with exceeding import value. Major export items are transportation equipment such as cars and food items such as wine, mineral water and nuts. The major export destinations are Azerbaijan, Armenia, Ukraine, Russian and Turkey. On the other hand, major import items are oil, cars, natural gas, medical goods and wheat.

The major countries supplying imports are Turkey, Azerbaijan, Ukraine, Russia and China. Georgian ports are used as distribution bases for Europe, Asia and NIS (New Independent States) countries. For example for cars, there is an assembly plant in Georgia. Semi-finished products and parts are imported to the country and there the final assembly is performed. Finally the finished cars are shipped to surrounding countries.




Source: World Bank

Figure 7-(9)-5 Recent transition of amount of trade

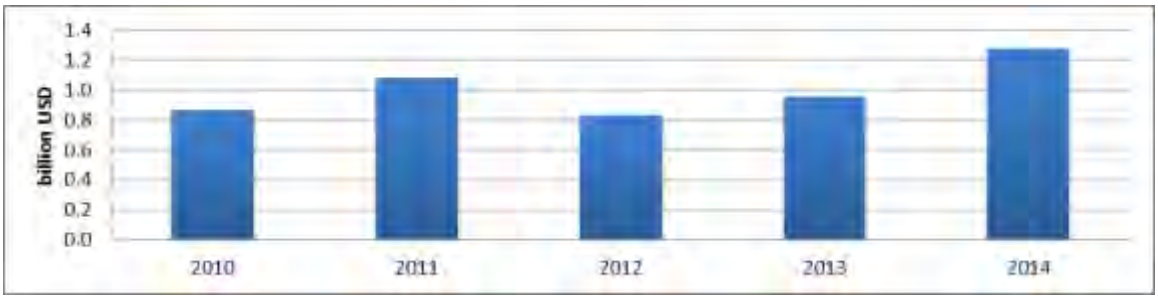
4) Foreign Investment (FDI)

Recent direct foreign investment increased from US$870 million in 2010 to US$1.27 billion in 2014, averaging around a billion dollars[76]. The major investing countries are Holland (20%), Luxembourg(16%), China (11%), Azerbaijan(10%), and Turkey (8%), while the share of China has been increasing since 2011.

By type of investment the shares of different sectors are 22% energy, 19% finance, 15% transportation and communication, 13% manufacturing, and 6% construction[77], with energy an important investment target. This is because Georgia is located between Asia and Europe in a geographically strategic position, and many petroleum pipelines from neighboring Azerbaijan pass through the territory of Georgia. There is also need for investment in hydroelectric power, as in Georgia water resource abound owing to some 26000 rivers within the country.

[76] WorldBank, 2015

[77] NATIONAL STATISITICS OF GEORGIA(GEOSTAT),2013




Source: World Bank

Figure 7-(9)-6　Recent transition of FDI in Georgia

5)Principal overseas investment

Georgia was ranked 15th in 2014 and 24th in 2015 in "Doing Business 2016" by the World Bank. Compared to Japan which ranked 29th in 2014 and 35th in 2015, Georgia is considered to have a good business environment. This is the result of government efforts to address democratization, market-oriented economic reform, elimination of corruption and human resource development including foreign language skill development (English and other languages).

The government actively promoted foreign investment through the National Investment Agency placed under the Ministry of Economy as a gateway, and based on the "Law of Georgia on Free Industrial Zones 2007, which established an industrial zone around the capital and major port regions, and provided incoming foreign investors with special privileges in regard to the tax system and authorization of site acquisitions. In addition, on behalf of companies cooperating with the administration in 2013, a (US)$6 billion-scale "Georgian Co-Investment Fund" was founded, through which the government commits jointly to inducing foreign investment while defining tourism, agriculture, manufacturing, and distribution as priority fields.

One example is that special economic zones are set up in the major harbor areas and there they provide foreign companies with assistance in regard to the special incentives in the tax system and approvals and licenses for land use.

6) State of economic partnership between Japan and Georgia

The Import value from Japan to Georgia is 40.29 billion yen and the major import items are cars, machinery and rubber products. The export value from Georgia to Japan is 1.05 billion yen and the major items are chemical products and alcohol drinks such as wine.

7) State of economic cooperation between Japan and Georgia

Georgia has a good relations with surrounding countries such as Turkey, Azerbaijan and Armenia and it is a stopping point for transport and distribution within the Caucasus. Also, Georgia played a central role when founding the "Georgia-Ukraine-Azerbaijan-Moldova Organization for Democracy and Economic Development"

(GUAM). The country has also announced a diplomatic stance of keeping a greater distance from Russia than with other former Soviet countries. Although the relationship between Russia and Georgia was complicated at the time of the Georgian-Ossetian conflict in 2008, Georgia has made an effort to redress the bond with Russia since the Ivanishvali administration was inaugurated in 2012, while maintaining unity with Europe as its fundamental foreign policy.

⑤ Possibility of private partnership with Hokkaido

1) Partnership in agriculture and tourism fields

In Georgia, it is considered indispensable under the governmental program dubbed "For a Strong, Democratic and unified Georgia"[78] to stabilize regional economies and promote small and mid-scale enterprises (SME) for development, while agriculture, tourism, and IT are specified as significant sectors.

On the other hand, the aid policy of the Japanese government to Georgia assists with agriculture, insurance, medical service, decentralization, and infrastructure installation for regional development, and is contributing to the acceleration of sustainable economic growth and social stability through social improvements effective in redressing disparities.

Considering the aforementioned governmental programs and characteristics of Georgia (referred to in previous sections: Assistance policies of Japan, and Hokkaido technologies), agriculture, livestock farming, food industry, and tourism are considered good prospects for private partnerships between Georgia and Hokkaido.

According to the government programs, productivity augmentation in the agricultural field, competitiveness of crops, quality management adjusted to EU standards, and SME promotion in the processing field are considered necessary. Also specified is that it is necessary to expand updating of farming village infrastructure including for irrigation, modernization of agriculture, and technology implementation systems, while taking into account the unique local culture and production environment.

In regard to the tourism field, taking advantage of World Heritage Sites and their natural landscapes, emphasis is put on tourism promotion in local cities through improvement of access for tourists to the country and infrastructure such as ski resorts, and issues such as improved service, SME encouragement, promulgation of small-scale accommodation including B&Bs and farm stays.

[78] In the government program dubbed "For a Strong, Democratic and Unified Georgia" (December 27, 2015), under the policy of unification with the EU, a political direction toward stable domestic economy and employment promotion is stated.
http://gov.ge/files/41_53457_826340_Strong.pdf

2) Experience and achievements of Hokkaido

Hokkaido has a record of efficient optimization of operations in the agricultural field and quality upgrading and branding of agro-products, along with various achievements in the field of tourism, ranging from local service refinement and tourism program development, to human resource cultivation; this experience can serve as a model for Georgia.

Additionally in Hokkaido, agricultural, forestry, and fisheries industries, together with processing, tourism, and distribution service companies have been actively engaged in "sextic industrialization" that aims for more secure local employment ,higher incomes, and the capability to deal with such agricultural and tourism challenges. Some specialty products, for instance, Georgia's World Heritage-registered organic wines with a 6000-year history and yogurts, whose fermenting bacteria is exported to Japan, vary by region, raw ingredients, production methods, and tastes, and are suitable for the sextic industrialization, where the originality and unique characteristics of local communities are highly valued.

3) Possibility of inter-regional exchanges

Currently, providers of country-specific training in 2015, "Regional Development through integration of rural tourism and value added agriculture" for Georgia, include Hokkaido prefecture, the town of Niseko and Takigawa city, while other local agencies and economic organizations, farmers, and wineries are proposing long-term partnerships for the production and distribution of wine -a specialty of Georgia. In order not make it a fleeting liaison, it is necessary to set up a framework that makes the best use of know-how and the technologies of private corporations from different regions.

In concrete terms, Georgian participants may acquire techniques of agro-production and quality management in Hokkaido while they will have opportunities to promote Georgian wines in a market, where tourists not only from Asia but also Europe, Australia come together. Hokkaido people, on the other hand, may be able to introduce or help promote the distinct historical character of Georgian wines or those brewed locally but with traditional Georgian methodology. In the tourism realm, whether domestic or foreign, what is often required is the creation of some stories, and if the partnership between Hokkaido and Georgia is assimilated by the local community, that in itself can be an advantage for PR. In addition, it might spawn some opportunities for market expansion with better understanding of Hokkaido agro-machinery through actual involvement in production. Such a venture that pledges mutual economic benefits to private companies is necessary for long-term regional partnerships, as in for example Niseko town which already carries out the "spread of international exchange to regional business" as a part of local regeneration tactics.

4) Collaboration with non-Hokkaido enterprises

In Georgia, as Japanese dairy product makers and food processing companies have carried out cooperative development and patent licensing contracts, it is also possible to collaborate with these non-Hokkaido-based corporations. The is to say, cooperate with other large domestic enterprises to make it possible to apply human resources, technology, or marketing capacity not available to Hokkaido companies, and new product development with dual branding of Hokkaido and Georgia for the sake of the food-related companies outside Hokkaido.

Table 7-(9)-2 Outline of Georgia

| | | | | | |
|---|---|---|---|---|---|
| General outline | Area | Population | Capital | Official language | |
| | 69,700 ㎢ | 4.3 million *1 | Tbilisi | Georgia | |
| | Ethnic group | Language | Religion | — | |
| | Georgian（83.8%） | Russian, Armenian | Georgian Orthodox, Islam | | |
| | Geographical characteristics: More than half of the land is mountainous. Dry continental climate in the east, warm in the west. | | | | |
| Economic indicator | GDP / person | Economic growth rate | Import value | Export value | |
| | 3,719US dollar *2 | 2.0% *2 | 8.596 billion US dollar | 2.861 billion US dollar | |
| | Currency unit | Exchange rate for dollars | — | — | |
| | Lari | 2.39 | | | |
| | Nominal GDP | 2010 | 2011 | 2012 | 2013 | 2014 |
| | | 11.6 billion US dollar | 14.4 billion US dollar | 15.8 billion US dollar | 16.1 billion US dollar | 16.5 billion US dollar |
| | Major export item | Cars, drinks, alcohol, iron and steel, minerals, slag, edible fruits | | | | |
| | Major export counterpart | Azerbaijan, Armenia, Russia | | | | |
| | Major import item | Mineral fuel, cars, nuclear reactors, boiler, machinery, electrical equipment | | | | |
| | Major import counterpart | Turkey, China, Azerbaijan | | | | |
| Relations with Japan | Exports to Japan | Major export items to Japan | Imporst from Japan | Major import items | | |
| | 1.05 billion yen | Chemical products | 40.29 billion yen | Cars, rubber tires and tubes | | |
| | Principal treaty・agreement | Agreement on technical cooperation between the government of Japan and the government of Georgia was signed in March 2007. | | | | |
| | Number of Japanese company | Japanese company 1 (Branch office 1, Satellite office 0), Overseas affiliated companies 3 | | | | |
| Investment policy | Prioritized investment sector | Tourism, agriculture and stock raising, food (tea, wine) | | | | |
| | Main agency | Ministry of Economy and sustainable development | | | | |
| | Outline of Investment Law | − | | | | |
| | Preferential treatment for foreign investment (tax) | Free industrial zone, preferential trade system | | | | |
| Others | Main distribution route | Japan→（shipping by sea …Mediterranean・Aegean・Black Sea）→Georgia | | | | |

| | | |
|---|---|---|
| | Financial environment | Policy rate：7.5%（2015.11）、Rate of increase in consumer price index：3.1%(2014) |

Source: Made by the research group by World Bank, JETRO, HP of Embassy of Japan, Ministry of Finance and local hearing

*1: World Economic Outlook (IMF), 2013

*2: IMF World Economic Outlook (Oct. 2015)

*3: Foreign trade statistics by Ministry of Finance

*4: MOFA, Kaigai-zairyu-houjin-suu chousa-toukei (“Statistics on the number of Japanese living overseas”), summary ed., 2016

# 8 Possibility of Business Expansion of Hokkaido-Based Companies to Target Countries

(1) Current Situation of Overseas Expansion of Hokkaido-Based Companies

China and Southeast Asia account for roughly 61% of the destinations of Hokkaido corporations that expanded to foreign countries (JETRO 2014). The main objectives of this expansion are to access affordable workforces for production, to disperse production bases as required for raw materials and other factors, and to outsource production. Given the rising popularity of Japanese food worldwide and that food is one of Hokkaido's strengths, establishing franchises and exporting agricultural and marine products are also objectives. The market of China and Southeast Asia is a target for many other companies from both in and out of Japan, therefore the competition is becoming fiercer.

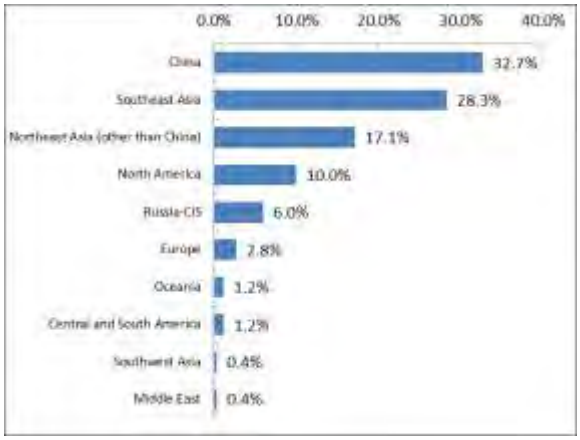



Figure 8-1 Distribution of Hokkaido Companies' Foreign Expansion

Source: Created by HIT from the summarized version of "2014 Investigation of Foreign Business Development" from JETRO Hokkaido (published July 2015)

Under such circumstances, Hokkaido-based companies are required to develop markets where Hokkaido's characteristics can be utilized.

In line with Hokkaido's regional strategy, "establish neighborly relations", Hokkaido has built rich experience in business exchange mainly through technical cooperation or with the private sector in agriculture/livestock infrastructure or technology specialized for cold regions, together with Far East Russia or northeast Asian countries for their similarity in climate. With such experience, it seems that Mongolia, Central Asian and Caucasus nations have similarities with Hokkaido, therefore may be promising for expanding their business.

Table 8-1 Characteristics of Hokkaido by industry

| Sector | Characteristics |
|---|---|
| Agriculture/food | Agricultural sector accounts for a high percentage of industry (four times the national average), and there is much processing of products |
| Construction/infrastructure | Construction/infrastructure sector accounts for a high percentage of industry (10.4% in Hokkaido, 5.9% throughout Japan) |
| Living environment/energy | ・Lowest annual average temperature, highest energy consumption per capita (24,500 GJ/person) in Japan<br>* Gigajoules (unit of calorie/energy) |
| IT | ・Lowest population density in Japan (roughly 70 people/km$^2$), remote management (disaster risk reduction, health care, etc.) particularly important during winters |

| | |
|---|---|
| | ・IT used to the fullest in agricultural sector and others due to abundance of arable land (23.4 ha/household, 14.6 times higher than other areas), etc. |
| Functional foods | Healthy-DO (Hokkaido Food Product Functional Display System), Japan's first effort for functional foods, began in April 2013 |
| Sightseeing/tourism | Second to Tokyo with a total of 24.18 million nights stayed, developed tourism for a diverse array of tourists |

(2) Future Business Development of Hokkaido-Based Companies

Further steps for Hokkaido-based companies to review business development in target countries are described here, taking the study results into consideration.

The first step is to narrow down specific target areas and products or technologies, and collect sufficient information on that field, while taking the study results into consideration. Possibilities may be confirmed from the information only from the companies of the target countries, however, the challenges often cannot be grasped, therefore requires careful review of the feasibility through gathering information also from Japan or third countries.

The next step is to draw a specific image of the business, build up a hypothesis of the business development, and review the appropriateness. Not only whether or not the company's technologies or products comply with the environment or the system in the target area, but also to grasp the logistics cost or custom tax and clarify the challenges involved in distribution. A reliable cooperator will be required upon doing so, who may become the future business partner, therefore the cooperator's financial power, expertise in the target business, as well as reputation in and outside the country must be confirmed.

If business is promising based on above studies and reviews, a business development plan assuming concrete buyer or products shall be established. Risks arising from payment, labor and financing must be reduced, while grasping information on business promotion scheme of Japan or the target country.

Table 8-2 Examples of Overseas Business Development Activities of Hokkaido-Based Companies

| Stage | Concrete examples of business activities |
|---|---|
| Study | ● Review unclear additional information based on the information of this study<br>● Review possibility of business expansion of the company's products and technologies in the target country<br>● Consult with JICA or JETRO who have local offices, as well as organizations in Japan such as Japanese trading firms |
| FS, Validation | ● Secure cooperator in the target country (administrative bodies, local companies, communities, etc.)<br>● Consider carrying out demonstrations and participating in exhibitions etc. at the site<br>● Confirm means of transporting material/equipment, transportation period or cost<br>● Confirm laws and regulations, approval, business practices, examples of troubles etc. in the area |
| Preparation of commercialization | ● Confirm method handling taxation, labor, financing<br>● Confirm application of investment incentives or other benefits<br>● Confirm environment and method of funding (operating fund, facility funds)<br>● Preparation for contract signing (sales contract, agency contract, joint research contract etc.) |

(3)Advantages and Points of Attention of Hokkaido-Based Companies on Promoting Collaboration with the Target Country

While section (2) above reviewed the stages of the process for overseas business development in generalities, the advantages and points of attention of Hokkaido-based companies in considering the business in Mongolia, Central Asia, and the Caucasus are summarized as shown in the Table 8-3. These are general description of the target regions as a whole, and it must be noted that different countries have different economic conditions, institutions, and business environment.

An advantage of Hokkaido is the fact that the industrial structure and climate of Hokkaido are the closest to those of the target areas among the areas in Japan. Taking cold-climate technologies as an example, technical confirmation is needed as to whether or not the technologies in Hokkaido assuming the operation at temperatures down to minus 20°C can be applied to Mongolia and the northern part of Kazakhstan, where temperature goes down to minus 30-40°C. While agriculture and stock farming in Hokkaido are operated on a large scale as comparison with other areas in Japan, it also needs to be confirmed whether or not the technologies can respond to the needs in Mongolia and Central Asia, where agriculture and stock farming are operated in even larger areas.

As described in above section (1), although the experience of business development in Russia and Northeast Asia is useful in the business expansion to Central Asia and the Caucasus countries where geographical nature or climate are similar, these regions are still in the process of reconstructing the legal system and the systems for physical distribution and customs clearance. It is necessary to gather new information continually.

On the other hand, problems are related to the present situation of Hokkaido-based companies, such as a lack of experience in international business and the mostly small and medium sizes of companies with small volumes of transactions, which are not specific to the target countries of this survey. The problems concerning physical distribution, overseas travel, and language are not specific to Hokkaido-based companies but are common to all companies in Japan.

Table 8-3 Advantages and Points of Attention of Hokkaido-Based Companies in Business Development in Target Regions

| | |
|---|---|
| Advantages | ・There are many regions with industrial structure and climate similar to those of Hokkaido, where the experience and technologies may be utilized. The development of the 6th industry and the industry-government-academia collaboration are attracting growing interest in the regions.<br>・Companies with experience in business development in Russia and China can utilize their business experience in obtaining permissions and approvals, settlement of accounts, physical distribution, etc. (especially in the case of Eurasian Economic Union member countries and Mongolia).<br>・Utilization of technologies in Hokkaido have been discussed in the intergovernmental talks with Mongolia and Central Asian countries. Embassies and other authorities have expressed their expectations at seminars in various countries. |
| Points of attention | ・Companies in Hokkaido generally lack experience in international business, and need sufficient advance preparation. It is essential to obtain collaboration of organizations and groups that can offering expertise in language and commercial transactions needed for business.<br>・There are no local contact points for information gathering, consultation, and preparatory work for business activities. Because the scale of business is small, cooperation of large trading companies may be difficult to obtain.<br>・As a problem common to all Japanese companies, there are few routes for physical distribution and international travel to the target countries.<br>・In the case of trading, physical distribution cost tends to be high due to the high cost of customs clearance, the long time needed for customs clearance, and the imbalance of trade with an excess of imports over exports, which causes the problems of one-way transportation and small shipping lots. |

Another point of attention is to understand the business environment of each country. The "Doing Business 2016" announced by the World Bank indicates the "ease of doing business" in the target countries as shown in Table 8-4. For comparison, we have added the ranks of Japan and Russia.

Mongolia has lower rating than Japan because of the issues in getting electric power, resolving insolvency or enforcing contract etc., and was ranked 56$^{th}$ out of 189 countries. The cost for getting electric power is a large burden, and is the main factor for lowering its rank. On the other hand, starting new businesses or construction approval were rated higher than Japan, due to the short wait from application to approval.

From the Central Asian countries, Kazakhstan, for its rich resources such as natural gas, uranium and mineral was ranked the highest in the region at 41$^{st}$, followed by Kyrgyzstan at 67$^{th}$, Uzbekistan at 87$^{th}$, Tajikistan at 132$^{nd}$, and Turkmenistan not included in the rating. Contract performance or tax payment were highly rated for Kazakhstan, however, trading was low, which within EEU, has a similar tendency with Russia. If in the future within EEU, standardization of technical regulations, custom clearance, and capital management progress, then this tendency will be even more obvious. This may in the future influence the rating of Kyrgyzstan, which joined EEU in 2015. Paperwork is time consuming at public agencies of Uzbekistan and Tajikistan, and the rating for construction permit and trading were also low, which lowered their overall rating.

In the Caucasus nations, the overall rating for Georgia was at 24$^{th}$ which is higher than that of Japan (34$^{th}$), followed by Armenia at 35$^{th}$. Including Azerbaijan, ranked 56$^{th}$, the three Caucasus nations had high rating in "starting new business", specifically Armenia at 5$^{th}$, Georgia at 6$^{th}$, and Azerbaijan at 7$^{th}$. This is due to eased company register system and ample policies for supporting founding companies as well as attracting

foreign investment. Compared to Georgia or Armenia, Azerbaijan was rated lower in construction permit, getting electric power, and funding.

However, it was found at the interview in Mongolia that these conditions may change immediately depending on the socioeconomic situation or law amendment, regardless of how high the rating is today. It must also be kept in mind that the rating may change tremendously in energy producing countries such as Kazakhstan or Azerbaijan, due to the weakening oil price and the currency devaluation accompanying it.

Table 8-4 Comparison of "Ease of Doing Business" of the Target Countries

(numbers represent rank)

| | Overall | Starting a business | Dealing with construction permits | Getting electricity | Registering property | Getting credit | Protecting minority investors | Paying taxes | Trading across borders | Enforcing contracts | Resolving insolvency |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Georgia | **24** | 6 | 11 | 62 | 3 | 7 | 20 | 40 | 78 | 13 | 101 |
| Armenia | **35** | 5 | 62 | 99 | 14 | 42 | 49 | 41 | 29 | 28 | 71 |
| Kazakhstan | **41** | 21 | 92 | 71 | 19 | 70 | 25 | 18 | 122 | 9 | 47 |
| Mongolia | **56** | 36 | 25 | 134 | 44 | 59 | 8 | 91 | 74 | 80 | 89 |
| Azerbaijan | **63** | 7 | 114 | 110 | 22 | 109 | 36 | 34 | 94 | 40 | 84 |
| Kyrgyzstan | **67** | 35 | 20 | 160 | 6 | 28 | 36 | 138 | 83 | 137 | 126 |
| Uzbekistan | **87** | 42 | 151 | 112 | 87 | 42 | 88 | 115 | 159 | 32 | 75 |
| Tajikistan | **132** | 57 | 152 | 177 | 102 | 109 | 29 | 172 | 132 | 54 | 147 |
| Japan | **34** | 81 | 68 | 14 | 48 | 79 | 36 | 121 | 52 | 51 | 2 |
| Russian Federation | **51** | 41 | 119 | 29 | 8 | 42 | 66 | 47 | 170 | 5 | 51 |

(4) Consideration of the Use of JICA Schemes

Based on the points of attention reviewed in (3), it is possible that Hokkaido-based companies expand business in target countries using a combination with the JICA schemes listed on the next page. However, it must be noted that available schemes and themes differ from country to country.

① Use of Private Collaboration Project

Items ①, ②, ③, ⑤, ⑥, and ⑦ in the table of JICA projects can be used to reduce the burdens of provisional survey, feasibility study, field introduction experiment, etc. In the case of "The Project for the Promotion of Agricultural Machines in Wide-Area Dairy Districts" (fiscal year 2013) conducted by IHI STAR Machinery Corporation (Chitose City, Hokkaido), local market survey, participation in fairs, demonstration, basic FS survey concerning physical distribution and maintenance system, and other activities were conducted as part of "The Project to Promote Private Technology Penetration for Socioeconomic Development of Developing Countries," which was a private collaboration project, for the purpose of confirming the possibility of business development. The eligibility to this scheme must be confirmed with JICA in advance, as there are restrictions on target countries and the size of the company.

② Grass Roots Technical Cooperation

Grass roots technical cooperation is a scheme in which JICA supports the international cooperation activities conducted by NGOs, universities, local governments, public service corporations, and other organizations for the inhabitants of developing countries. It is possible to use this scheme for the purpose of building the foundation for long-term efforts, such as building a relationship of trust and technology transfer, under the lead of communities and related organizations. For example, Fujisaki Town in Aomori Prefecture and Hirosaki University conducted "Project for Improvement of Farmers' Living through Modernization of Apple Cultivation Technologies in the Republic of Uzbekistan" (2014 fiscal year), including field technical guidance and training in Japan. They included the presentation of cultivation materials and equipment in this project and contributed to the development of local economy.

③ Other Technology Cooperation Projects

While the technical cooperation projects, grant aid cooperation, etc. conducted by JICA are contributing to the development of recipients such as developing countries, it is possible to use the technologies and materials of Hokkaido-based companies in such projects, leading to the promotion of their business in the target countries. For example, while various disaster management measures and infrastructure construction projects are conducted in the target countries, it is possible to promote the strengths of Hokkaido-based companies in cold-climate technologies through the contractors of JICA projects.

Hokkaido is visited by various trainees from the target countries in the projects of JICA Hokkaido International Center. If a company looks into the details of these training projects and finds that its technologies and experience of companies are suitable to the purpose of training and can contribute to the development of the target countries, it can consult with the JICA Center for participation in training projects as a contractor or cooperator, and examine the needs and problems through discussion with trainees.

Table 8-5 List of JICA Projects That Can Be Used by Private Companies

| | Scheme | Period | Eligible parties | Purpose |
|---|---|---|---|---|
| ① | Preparatory Survey (PPP Infrastructure Project) | No limit | Corporations registered in Japan | Based on the proposal from the Japanese corporation planning for participation in a PPP infrastructure project, the basic project plan for the PPP infrastructure project is formulated assuming the project implementation using overseas investment or ODA loan, and the validity, efficiency, etc. of the proposed project are examined. |
| ② | Preparatory Survey (BOP Promotion of Business Collaboration) | Up to 3 years | Corporations registered in Japan | Based on the proposal from a Japanese corporation planning for BOP business in a developing country, examination and confirmation are conducted concerning the development of a business model, formulation of the project plan, and the possibility of collaboration with a JICA project. |
| ③ | Project to Promote Private Technology Penetration for Socioeconomic Development of Developing Countries | Up to 2 years | Corporations registered in Japan | Based on the proposal by an entity in Japan, promote understanding of the superior products, technologies, systems, etc. of Japanese companies and to examine the possibility of use in development through training in Japan and field seminars held mainly for government officials of developing countries as well as model project at the local site. |
| ④ | Overseas Investment | N/A | Projects conducted by Japanese companies, etc. | Project conducted by private companies and other parties for the development of developing countries are supported with loans and investment. JICA, which has abundant experience in developing countries, accepts the risk with "pump-priming effect", and supports the projects with risks in financing from private financial institutions and other sources. This scheme is meaningful as it supports the projects that otherwise cannot be realized. |
| ⑤ | Basic Survey for Project to Support Overseas Expansion of Small and Medium-Sized Companies | Several months to about 1 year | Small and medium-sized companies, etc. *1 | Based on the proposal from small and medium-sized companies, this scheme gathers basic information needed for the examination of the possibility of solving developmental problems through the use of superior technologies, products, and business ideas, as well as the possibility of collaboration with ODA projects, and conducts surveys for the formulation of project plans, aiming at promoting the development of developing countries. |
| ⑥ | Project Development Survey for Project to Support Overseas Expansion of Small and Medium-Sized Companies | Several months to about 1 year | | Based on the proposal from small and medium-sized companies, this scheme aims to examine the possibility of using technologies, products, etc. for the development of developing countries. |
| ⑦ | Project to Support Overseas Expansion of Small and Medium-Sized Companies: Dissemination and Demonstration Project | About 1-3 years | | Based on the proposal from small and medium-sized companies, this scheme aims to examine the ways to spread the use of technologies, products, etc. through demonstration activities to improve the applicability to local conditions for the development of developing countries. |
| ⑧ | Grass Roots Technical Cooperation Project (Local Government Type) | Within 3 years | Proposer: Local governments<br>Executing body: Local governments or the organizations and companies designated by local governments | International cooperation activities for the inhabitants of developing countries conducted by Japanese NGOs, universities, local governments, public service corporations, and other organizations intending to work for international cooperation are supported by JICA as part of ODA and implemented jointly with participation of the public. |
| ⑨ | Private Collaboration Volunteers | 1-2 years in principle (can be as short as 3 months) | Stock companies (including special limited liability companies) or membership companies (limited liability companies, limited partnership companies, | Employees of public companies are sent as members of Japan Overseas Cooperation Volunteers and Senior Volunteers to developing countries, also contributing to the companies' global human resource development and overseas business development. |

| | | | | |
|---|---|---|---|---|
| | | | general partnership companies) | |

*1: Small and medium-sized companies established under the laws of Japan and registered in Japan (the definition of small and medium-sized companies is according to Article 2 of the Small and Medium Enterprises Basic Law and Article 3, Item 2 of the Ordinance Enforcing the Japan Finance Corporation Law) or some of the organizations of small and medium-sized companies defined by the law concerning the organization of small and medium-sized companies (business cooperative associations, minor business cooperative associations, business associations, cooperative associations, and commercial and industrial associations) that has existed for one year or more since the establishment of the company or organization.

Source: List of JICA Projects That Can Be Used by Private Companies, JICA website
（http://www.jica.go.jp/activities/schemes/priv_partner/ku57pq00000ln4a3-att/priv_partner_JICA_business.pdf）

# 9 Recommendations of the Survey Team to Hokkaido and the Target Countries for the Promotion of Private Collaboration (Conclusion)

(1) Securing Sufficient Scale of Project by Targeting at Multiple Countries

Considering the population and per capita GDP of the countries in Mongolia, Central Asia and the Caucasus, each country is not particularly attractive as a target of business. It is therefore necessary to develop a strategy targeting at multiple countries.

When multiple markets are considered, it is necessary to pay attention to the market scale of respective countries.

Table 9-1 Market Sizes of Countries in Central Asia and the Caucasus

| Country | Mongolia | Kazakhstan | Kyrgyzstan | Uzbekistan | Turkmenistan | Tajikistan | Georgia | Azerbaijan | Armenia |
|---|---|---|---|---|---|---|---|---|---|
| Population (million persons) | 2.9 | 17.3 | 5.8 | 30.7 | 5.3 | 8.3 | 4.5 | 9.5 | 3.0 |
| Per capita GDP (US dollars) | 4,129 | 12,276 | 1,269 | 2,038 | 9,032 | 1,114 | 3,670 | 7,884 | 3,620 |

* Compiled by HIT, based on IMF World Economic Outlook Database, October 2015 (estimated value).

① Markets That Can Share Physical Distribution Routes

Securing physical distribution routes is an important issue in considering business in Central Asia and the Caucasus. In the case of exportation of materials and equipment, it is necessary to consider the supply system for not only the main units but also parts and expendables. Exportation to Central Asia can use the route via Russia or China, and the Caucasus can be reached via Georgia, Iran, and Turkey. Multiple target markets must be proposed based on the consideration of the available routes. On a long-term basis, it is also necessary to secure places for inventory storage of parts and expendables.

In this process, it is necessary to consider not only the target markets but also China and Russia on the route as markets and as the places for inventory storage.

② Markets Belonging to the Common Economic Zone (EEU[79]) and Markets as the Gateway to Other Countries

Considering the procedures for obtaining certificates, permissions, and approvals needed for exportation and technology transfer to the target countries, it is efficient to secure a market size by forming a market including multiple countries where the same systems can be used. For example, while Kyrgyzstan and Armenia are very small markets when they are considered individually, they both belong to EEU with a

[79] EEU: Eurasian Economic Union / As of March, 2016, its members are Russia, Belarus, Kazakhstan, Kyrgyz Republic and Armenia. See EEU official website (http://www.eaeunion.org/?lang=en) for detail.

population of 182.07 million[80], which can be considered as a market. In the case of Georgia, this country is a physical distribution hub in the Caucasus, it has well-developed systems for settlement and customs clearance, and English is spoken there as a business language. Because of these advantages, it is possible to consider Georgia as the gateway for development in other regions. On the other hand, since Armenia has been granted trade preferences under Generalized System of Preference (GSP), it is possible to obtain preferential treatment in customs duties by basing business in this country.

③ Markets with Common Language, Dietary Habits, etc.

When the business of supplying foods, machines, etc. to general consumers is considered, it is necessary to provide product explanation, quality certificates, etc. in the languages of the target countries. In B-to-B businesses, technical guidance manuals and detailed instruction documents must be provided by the Japanese side in the early stages of business. While documents in English can be used in the Caucasus to some extent, Central Asian countries need Russian versions. Considering the cost of required high-quality translation, it is desirable to combine markets where the same language can be used. When a market for foods or food materials is considered, the market needs to be defined considering dietary habits, religious restrictions, etc.

(2) Cross-Sectional Survey of the Target Regions

In relation to (1) above, a useful means for the promotion of private collaboration is to conduct a cross-sectional survey of the target regions for the purpose of securing market size, comprehensive consideration of physical distribution routes, consideration of the ways to avoid various risks by including multiple countries in the target, and the concrete comparison of advantages and disadvantages of target countries. Examples of possible cross-sectional surveys in the fields covered by this survey are summarized below.

Table 9-2 Examples of Cross-Sectional Surveys Supporting Promotion of Private Collaboration

| Target technology/service | Content of cross-sectional survey | Advantages of cross-sectional survey |
|---|---|---|
| Construction of agricultural machine supply networks | Physical distribution routes, maintenance, common human resource development, model farm fields, etc. | Consideration of efficient supply, after-sale service, and PR methods |
| International business exchange in the field of functional foods | Centralization of intermediate processing facilities, spread of quality control and resource conservation technologies, etc. | Development of efficient systems for processing, physical distribution, and spread of technologies |
| Collaboration between “one village one product” projects in target countries and | Construction of relationships benefiting the both parties through collaboration | Improvement through friendly rivalry with competition between target |

[80] EEU official website http://eec.eaeunion.org/ru/act/integr_i_makroec/dep_stat/econstat/Pages/population.aspx
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| | | |
|---|---|---|
| "vitalizing local economy" projects in Hokkaido | between target countries and the municipalities in Hokkaido<br>Construction of a comprehensive PR system for similar projects, consideration of common quality standards, etc. | countries and cooperating municipalities, comprehensive PR |

(3) Region-Wide Approaches Based on "Vitalizing Local Economy" Programs

Chapter 8-(4) "Consideration of the Use of JICA Schemes", section ② and ③ discussed the possibility of business promotion in collaboration with JICA projects, such as grass roots technical cooperation and training projects conducted by municipalities and educational institutions in the area. On the other hand, while the government of Japan is currently promoting "Vitalizing Local Economy" programs aiming at revitalization of local areas, international exchange and overseas business expansion are identified as the means to achieve this goal. Therefore, by collaborating with the "Vitalizing Local Economy" programs of the municipalities they belong to, companies can take advantage of not only JICA projects but also the budgets and assistance schemes of other ministries and agencies.

(4) Information Sharing in Hokkaido and Promotion of Collaboration among Target Countries

Although there are large-scale projects conducted under ODA loans and grant aid of the government of Japan in the target countries, only a limited number of companies in Japan have business experience of cooperation on a small or medium scale, which Hokkaido-based companies may be able to participate in the target countries. Taking this survey as an opportunity, companies planning to expand private business are therefore advised to have regular occasions for information sharing as long as they do not affect their individual businesses. In particular, sharing of information concerning physical distribution, customs clearance, and the credit of business partners is effective in cost reduction and avoidance of risk.

Furthermore, collaboration of companies in diversified fields enables them to promote their businesses as a package. For example, machines for dairy farming and biomass technologies may be packaged together, and this can contribute to the promotion of dairy farming in various countries as a whole.

On the other hand, success of a business in one country can be shared as a success model among neighboring countries with common problems, and this may provide effective PR for the expansion of markets for Hokkaido-based companies. To make this to happen, it is necessary that companies continually make sure the presence of a network among the target countries. When developing business in multiple countries, the presence of a good network among the target countries is considered to facilitate smooth sharing of solutions to problems, common human resource development, and the sharing of functions in business.