



## *Demand Analysis Report- Mongolia*



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# MONGOLIA


## 1. An overview of the country

### 1.1 Country Profile

It is a landlocked sovereign state in East Asia. It is bordered by China to the south and Russia to the north. While it does not share a border with Kazakhstan, Mongolia is separated from Kazakhstan by only 36.76 kilometres (22.84 mi). Ulaanbaatar, the capital and largest city, is home to about 45% of the country's population. It is slightly larger than Alaska.



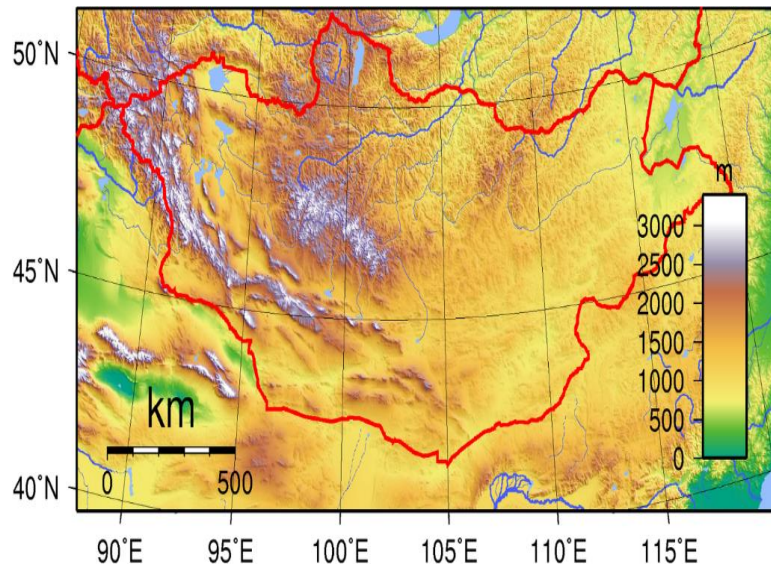
Mongolia joined the World Trade Organization in 1997 and seeks to expand its participation in regional economic and trade groups.

|                          |  |
|--------------------------|--|
| Flag                     |  |
| Capital and Largest City | Ulaanbaatar<br>47°55'N 106°53'E  |
| Official Languages       | Mongolian  |
| National currency        | Tugrik (MNT)   |
| Government               | Unitary semi- presidential republic  |
| Legislature              | State Great Khural   |
| Area                     | Total 1,566,000 km <sup>2</sup> (19th)<br>603,909 sq mi<br>Water % 0.43              |
| Population               | 3,081,677 (138th)  |

|               |  |
|---------------|--|
|               | Density 1.97/km <sup>2</sup> (238th)<br>5.10/sq mi |
| GDP (PPP)     | Total \$36.6 billion<br>Per capita \$11,024        |
| GDP (nominal) | Total \$12.5 billion<br>Per capita \$12.5 billion  |

## 1.2 Geography

The geography of Mongolia is varied, with the **Gobi Desert** to the south and with cold and mountainous regions to the north and west. The basin of the Uvs Lake, shared with Tuva Republic in Russia, is a natural World Heritage Site. **Most of the country is hot in the summer** and extremely cold in the winter, with January averages dropping as low as  $-30^{\circ}\text{C}$  ( $-22^{\circ}\text{F}$ ). A vast front of cold, heavy, shallow air comes in from Siberia in winter and collects in river valleys and low basins causing very cold temperatures while slopes of mountains are much warmer due to the effects of temperature inversion (temperature increases with altitude).



The productive regions of Mongolia—a table land ranging from 3,000 to 5,000 ft (914 to 1,524 m) in elevation—are in the north, which is well drained by numerous rivers, including the Hovd, Onon, Selenga, and Tula. Much of the Gobi Desert falls within Mongolia.

|                   |   |
|-------------------|---|
| Latitude          | 41° and 52°N  |
| Logitude          | 87° and 120°E.  |
| Total land area   | 1,564,116 km <sup>2</sup> (603,909 sq mi)                 |
| Forest Area       | 11.2% of the total land area                              |
| Temperatures      | In winter -15 C and -40 C, in the summer +10 C and +35 C, |
| Land boundaries   | 8,158 km, with Russia 3,485 km with China 4,673 k m       |
| World's Rank      | 19th-largest country                                      |
| Highest point     | Khüiten Peak(4,374 metres )-west                          |
| Lowest point      | 518 metres-East   |
| Average elevation | 1,580 metres  |

The landscape includes one of Asia's largest freshwater lakes (Lake Khövsgöl), many salt lakes, marshes, sand dunes, rolling grasslands, alpine forests, and permanent mountain glaciers. Northern and western Mongolia are seismically active zones, with frequent earthquakes and many hot springs and extinct volcanoes.

### 1.3 Climate

Mongolia is known as the "Land of the Eternal Blue Sky" or "Country of Blue Sky" (Mongolian: "Mönkh khökh tengeriin oron") because it has over **250 sunny days a year**.

Mongolia has two major **mountain ranges**. The highest is the Altai Mountains, which stretch across the western and the southwestern regions of the country on a northwest-to-southeast axis. The Khangai Mountains, mountains also trending northwest to southeast, occupy much of central and north-central Mongolia. These are older, lower, and more eroded mountains, with many forests and alpine pastures. Much of **eastern Mongolia is occupied by a plain**, and the lowest area is a southwest-to-northeast trending depression that reaches from the Gobi Desert region in the south to the eastern frontier. The rivers drain in three directions: north to the Arctic Ocean, east to the Pacific, or into the deserts and the depressions of Inner Asia. **Rivers are most extensively developed in the north**, and the country's major river system is that of the Selenge, which drains into Lake Baikal. Some minor tributaries of Siberia's Yenisei River also rise in the mountains of northwestern Mongolia. Rivers in northeastern Mongolia drain into the Pacific through the Argun and Amur (Heilong Jiang) rivers, while the few streams of southern and western Mongolia do not reach the sea but run into lakes or deserts.

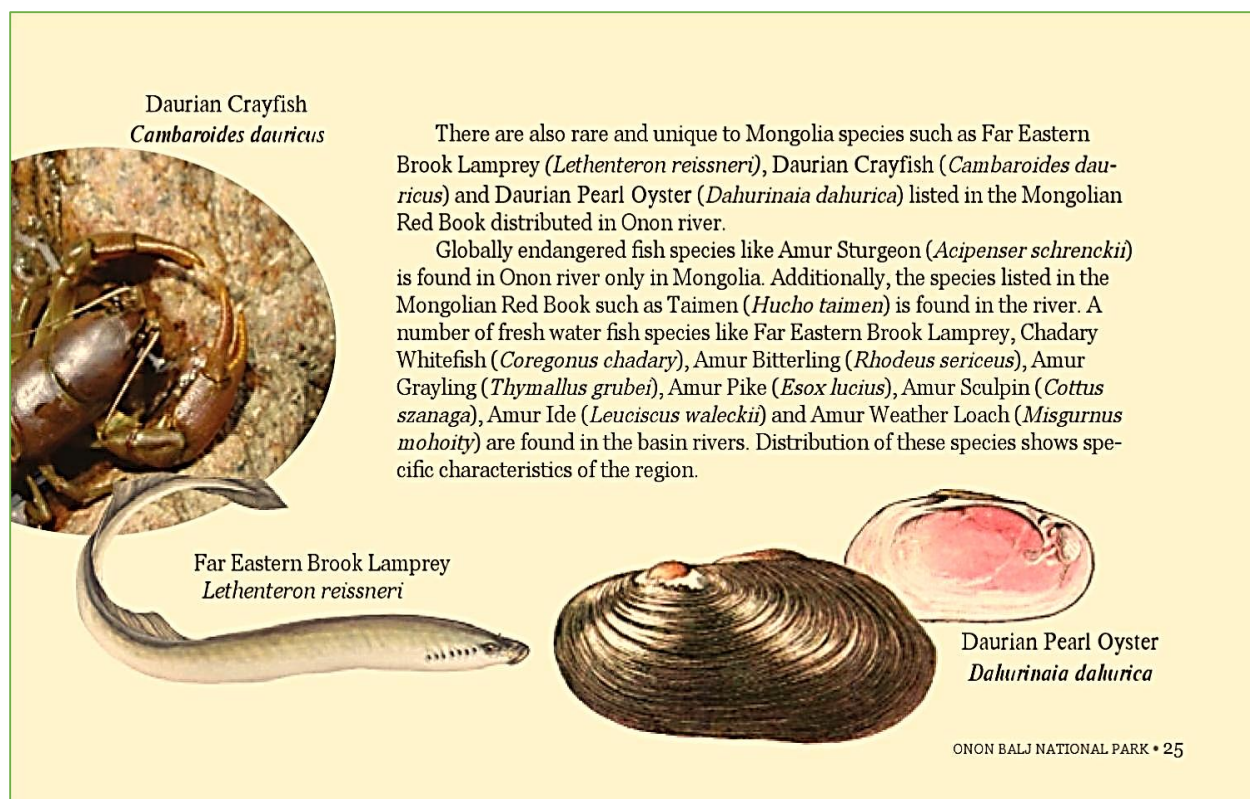
Most of the country is hot in the summer and extremely cold in the winter, with January averages dropping as low as -30 °C (-22 °F). A vast front of cold, heavy, shallow air comes in from Siberia in winter and collects in river valleys and low basins causing very cold temperatures

while slopes of mountains are much warmer due to the effects of temperature inversion (temperature increases with altitude).

In winter the whole of Mongolia comes under the influence of the Siberian Anticyclone. The localities most severely affected by this cold weather areUvs province (Ulaangom), western Khovsgol (Rinchinlhumbe), eastern Zavkhan (Tosontsengel), northern Bulgan (Hutag) and eastern Dornod province (Khalkhiin Gol). Ulaanbaatar is also strongly affected but not as severely. The cold gets less severe as one goes south, reaching the warmest January temperatures in Omnogovi Province (Dalanzadgad, Khanbogd) and the region of the Altai Mountains bordering China. A unique microclimate is the fertile grassland-forest region of central and eastern Arkhangai Province (Tsetserleg) and northern Ovorkhangai Province (Arvaikheer) where January temperatures are on average the same and often higher than the warmest desert regions to the south in addition to being more stable. The Khangai Mountains play a certain role in forming this microclimate. In Tsetserleg, the warmest town in this microclimate, nighttime January temperatures rarely go under  $-30^{\circ}\text{C}$  ( $-22^{\circ}\text{F}$ ) while daytime January temperatures often reach  $0^{\circ}\text{C}$  ( $32^{\circ}\text{F}$ ) to  $5^{\circ}\text{C}$  ( $41^{\circ}\text{F}$ ).

The country is subjected to occasional harsh climatic conditions known as *zud*. The annual average temperature in Ulaanbaatar is  $-1.3^{\circ}\text{C}/29.7^{\circ}\text{F}$ , making it the world's coldest capital city. Mongolia is high cold, and windy. It has an extreme continental climate with long, cold winters and short summers, during which most of its annual precipitation falls. The country averages 257 cloudless days a year, and it is usually at the center of a region of high atmospheric pressure. Precipitation is highest in the north (average of 200 to 350 millimeters (7.9 to 13.8 in) per year) and lowest in the south, which receives 100 to 200 millimeters (3.9 to 7.9 in) annually.

The eastern part of Mongolia including the Onon, Kherlen rivers and Lake Buir form part of the Amur river basin draining to the Pacific Ocean. It hosts some unique species like the Eastern brook lamprey, Daurian crayfish (*cambaroides dauricus*) and Daurian pearl oyster (*dahurinaia dahurica*) in the Onon/Kherlen rivers as well as Siberian prawn (*exopalaemon modestus*) in Lake Buir.



#### 1.4 Economy

Economic activity in Mongolia has **traditionally been based on herding and agriculture**, although development of **extensive mineral deposits** of copper, coal, molybdenum, tin, tungsten, and gold have emerged as a driver of industrial production. Besides mining (21.8% of GDP) and **agriculture (16% of GDP)**, dominant industries in the composition of GDP are wholesale and retail trade and service, transportation and storage, and real estate activities. As of 2006, 68.4% of Mongolia's exports went to the PRC, and the PRC supplied 29.8% of Mongolia's imports.

Mongolia is **ranked as lower middle income economy** by the World Bank. Some 22.4% of the population lives on less than US\$1.25 a day. In 2011, GDP per capita was \$3,100. Despite growth, the proportion of the population below the poverty line was estimated to be 35.6% in 1998, 36.1% in 2002–2003, and 32.2% in 2006.

Mongolia was never listed among the emerging market countries until February 2011 when Citigroup analysts determined Mongolia to be one of the "global growth generating" countries, which are countries with the most promising growth prospects for 2010–2050. The Mongolian Stock Exchange, established in 1991 in Ulaanbaatar, is among the world's smallest stock exchanges by market capitalisation. In 2011, it had 336 companies listed with a total market capitalization of US\$2 billion after quadrupling from US\$406 million in 2008. Mongolia

made a significant improvement on the ease of doing business in 2012, moving up to rank 76 compared with 88 last year in the "Doing Business" report by the International Finance Corporation (IFC).

Exporting commodities: copper, apparel, livestock, animal products, cashmere, wool, hides, fluorspar, other nonferrous metals

Highest Export: Minerals -80% (Expected Eventual rise to 95%)

Major Industry: Mining

Exporting partners: China 71.9%, Canada 10.7%, US 4.8% (2007)

## **2. An Overview of Allied sectors, Policies, Programmes and Priorities**

### **2.1 Agriculture Sector**

**Only one per cent of Mongolia is cultivable**, and arable farmers are generally located in the northern river valleys where irrigation is possible. **Yields tend to be low with a short growing season of about 100 days**. The main crops are wheat, barley, potato, cabbage and carrots, mainly grown in the central provinces. Some fruits, such as watermelons and berry varieties are also grown, generally on a small scale in urban areas.

Mongolia's **impacts all forms harsh climate severely of agriculture**. Temperatures can fluctuate from as low as minus 50°C in the steppe in winter, to 40°C in the Gobi desert in the summer. *Dzud*, a Mongolian term, refers to a range of severe weather conditions, including severe summer droughts and exceptionally cold winters, that can prevent access to, or destroy, pasture causing significant loss of animal life and devastating the livelihoods of herding families. Consecutive *dzuds* from 1999 to 2002 killed about one-quarter of the livestock, forcing many people to migrate to urban areas. Since then, herd numbers have recovered, but **the increase in numbers of goats for cashmere** has resulted in widespread overgrazing.

The **Mongolian agriculture sector** has four important discrete subsectors:

- (i) Extensive livestock, which is the traditional semi-nomadic pastoral system, where camels, horses, cattle, sheep and goats are grazed together;
- (ii) Mechanized large-area crop production of cereals and fodder crops;
- (iii) Intensive farming, producing potatoes and other vegetables, with both mechanized and simple production methods; and
- (iv) Intensive livestock, with housed dairy cattle, pigs and poultry. The **livestock sector dominates, contributing 84.9% of total agricultural production**.



Agriculture in Mongolia constitutes 20.6% of Mongolia's annual Gross domestic product and employs 42% of the labor force. However, the high altitude, extreme fluctuation in temperature, long winters, and low precipitation **provides limited potential for agricultural development**. The growing season is only 95 – 110 days. Because of Mongolia's harsh climate, it is unsuited to most cultivation. Only 1% of the arable land in Mongolia is cultivated with crops, amounting to 1,322,000 hectares (3,266,000 acres) in 1998. The agriculture sector therefore remains heavily focused on nomadic animal husbandry with 75% of the land allocated to pasture, and **cropping only employing 3% of the population**.

Agricultural sector produces 20.6 % of total GDP. 80% livestock and 20% crop sector.

Major Crops: corn, potatoes, wheat, barley, vegetables, forage crops.

Land use: arable land: 0.76%; permanent crops: 0%; other: 99.24% (2005)

Main agricultural exporting products: Leather, cashmere, meat, sheep and camel wool which generates 7.0% of export revenue.

Provides employment: 41 % of entire population or 1.1 ml employees

## **2.2 Agriculture Policies, Programmes and Priorities**

Over the past decade, in particular, the government has worked to take on a more active role in many agricultural segments, including livestock, farming, processing and distribution. Initially this involvement took the form of a handful of one-off projects aimed at boosting production in various key areas, including the cashmere and wool segments. Since 2009, successive governments have developed a variety of medium- and long-term development plans for the sector.

Both the State Policy on Food and Agriculture (SPFA) and the State Policy on Herders (SPH) were launched in 2009, and the Mongolian National Livestock Programme (MNLPP) was put forward in 2010. When the current government took power in 2012 it kept these policies in place, which was considered to be a broadly positive sign in a country where successive governments regularly cancel initiatives that had been launched by their predecessors.

### **2.2.1 SPFA**

The SPFA, which has the broad aim of boosting the country's food supply by expanding and improving upon sustainable agriculture practices, builds on a similar project that was initially launched in 2003. Under the initiative the Ministry of Food and Agriculture is working to

encourage the use of technology in animal breeding and care, and also in other parts of the agriculture sector.

### **2.2.2 SPH**

The SPFA is complemented by the SPH, which is focused on boosting incomes and quality of life among Mongolia's herders, who numbered in excess of 700,000 as of late 2012, according to World Bank estimates. The programme is composed of various components, including those aimed at improving herder organisation and collectivisation in an effort to enable risk-sharing; facilitating steady improvements in the quality of meat and other animal products produced in Mongolia; and boosting access to markets, both within the country and further afield.

### **2.2.3 MNLP**

Set to run until 2021, the MNLP is similarly composed of various livestock-related initiatives, including programmes aimed at ensuring the adaptability and long-term viability of the segment in light of climate change, which has the potential to seriously impact Mongolia's agriculture sector.

The programme is organised into five priority areas, which include the “formulation of a favourable legal, economic and institutional environment for sustainable development, and the development of good governance in the livestock sector”; the improvement of “animal breeding services” as part of the effort to boost productivity and competition; expanding and improving veterinary services in order to better protect the health and quality of livestock; developing new risk management capacity in an effort to prepare for the effects of climate change; and establishing “targeted markets for livestock and livestock products” and “proper processing and marketing structures” in an effort to “increase economic turnover”, according to the policy document.

The objectives that are laid out in the MNLP and other programmes are reiterated and reinforced in Mongolia's comprehensive National Food Security Programme, currently in its second iteration, under which the state is working to boost the country's self-sufficiency in terms of food.

In April 2013 the Agricultural Commodities Exchange of Mongolia (ACEM) was launched, after years of work by the state and provincial authorities. Part of the government's longstanding effort to improve market access in the agriculture sector, cashmere was the primary raw product traded on the exchange initially, though new lines are expected to be added as the entity develops. “The launch of ACEM is of historic importance in [the] creation of the supply

network of ... raw materials,” said B. Tsogtgerel, the then vice-minister of industry and agriculture, at the launch of the exchange.

#### **2.2.4 Mongolia Proposal for Global Agriculture and Food Security Programme**

The *National Plan of Action for Food Security, Food Safety and Nutrition* or ‘First Programme’ was developed for the period 2001 to 2010. The ‘Lessons Learned’ from a rapid assessment of the First Programme concluded for the livestock sector that “while numbers have recovered spectacularly of late, the need now is to focus on raising productivity and off-take, and, in so-doing, to reduce overall numbers for more sustainable steppe and pasture management.”

Current priorities, policies and actions of the Government to address agricultural development and improve national food security are reflected in the following three key programmes:

- (i) Mongolian National Programme for Food Security (NPFS) 2009-2016;
- (ii) Mongolian National Livestock Programme (NLP); 2010 and
- (iii) National Millennium Development Goals targets.

The overall goal of the current National Programme for Food Security (NPFS) is - To provide the entire nation with secure supplies of accessible nutritious and safe food to enable healthy livelihoods and high labour productivity founded on the participation of the people, government, the public and private sectors.

Under this over-arching goal, four pillars with the following strategic objectives were defined:

1. *Enabling Environment - to promote institutions and policies critical to enhancing productivity and competitiveness;*
2. *Food Security - to achieve self-reliance in those food staples that can be produced competitively and efficiently;*
3. *Food Safety - to rationalise the food management and safety system, and*
4. *Nutrition - with special focus on children and vulnerable groups, to achieve the national MDG nutrition target to “Halve, between 1990 and 2015, the proportion of people who suffer from malnutrition”.*

Monitorable indicators for 37 outcomes relating to the NFSP are specified in Government Resolution 32/2009.

**2.2.5 The MDG-based Comprehensive National Development Strategy of Mongolia defines the goals and strategic objectives of food, agriculture, regional and rural development and**

environmental policies that would be implemented through various targeted activities in two phases (Phase I: 2008-2015 and Phase II: 2016-2021). The overall policy priorities are identified in this document as:

- i. Agriculture and food industry shall be developed into a **modern agricultural and industrial complex** through raising their capacity to compete at the market, strengthening their ability to meet risks; the basic needs of the population in terms of flour, meat, milk, potato and other vegetables will be met fully by domestic production, and measures will be taken to ensure their sufficient supply, improved quality and health security;
- ii. A regional development policy shall be implemented continuously and the **development gap between urban and rural areas will be significantly reduced**;
- iii. A policy, which envisages a set of integrated economic, social and ecological measures aimed at **protecting the environment**, including the measures to protect the atmosphere, land, mineral wealth, water, forests, species of fauna and flora; proper utilization of mineral resources, their rehabilitation; measures on adaptation to climate change, reducing the adverse impacts of desertification and drought; halting the emission of hazardous chemicals and radioactive waste; and improving waste management shall be implemented.

## **2.2.6 Mongolia: Agriculture Sector Development Program and Project**

The Agriculture Sector Development Program, comprising a program and a project loan, was meant to address these two main problem areas—low productivity and limited marketing channels—by way of a policy loan for deepening and refining the policy and legal framework for agriculture, and an investment loan providing support services for production and marketing, as well as credit. Thus, the program sought to provide integrated support through a policy loan, an investment loan, and technical assistance (TA).

The program had two goals. The first goal was to develop a more market-oriented, efficient, and sustainable agriculture sector. Agricultural production in four western provinces would be increased and sustained. The second goal was to reduce poverty by increasing income opportunities. Poverty would be reduced among participating households with herds and households involved in horticulture production in the four western provinces.

From the program framework, the expected outcome of the program was increased productivity and profitability of agricultural producers, specifying the following targets:

- (i) Average productivity of herder households participating in cooperative marketing to increase (for wool and cashmere by 15%, and animals sold by 10%);
- (ii) average income of herder households participating in cooperative marketing to increase by more than half from productivity and marketing gains;
- (iii) Nutrition and income of households participating in horticulture production (Green Revolution Program) to improve; and
- (iv) Wheat yields to increase by 20% in the case of farmers borrowing for improved seed.

The executing agency for the program loan was the then Ministry of Finance and Economy (MOFE), now Ministry of Finance, while the executing agency for the project loan was the then Ministry of Food and Agriculture (MOFA), now Ministry of Food, Agriculture and Light Industry. Implementation was based on the approved annual plans both at aimag (province, the largest administrative unit) and national levels. A project steering committee was set up with the deputy minister of the then MOFE as chair, and the deputy minister of the then MOFA as deputy chair. The project steering committee was expected to meet at least once every 3 months. A national project director from MOFA headed the project management unit, which implemented a computerized system to monitor activities for each aimag component. The project management unit provided direction and supervised the daily operations of the aimags' project implementation units.

### **2.2.7 FAO Representation in Mongolia**

FAO has been providing technical support and implementing projects in areas such as food security and safety, agricultural statistics, water management and irrigation, actions against soaring food prices, regional control of transboundary animal diseases, livestock products processing, and forestry. Since Mongolia joined FAO in 1974, it has received assistance to the tune of \$3.7 million under the Technical Cooperation Programme (TCP), and roughly \$3.4 million under four Trust Fund projects for a total of US\$7.167 million.

### **2.2.8 The National Association of Mongolian Agricultural Cooperatives (NAMAC)**

The National Association of Mongolian Agricultural Cooperatives (NAMAC) is a non-governmental organization. NAMAC has developed its long-term strategy (2014-2022) using the ICA Blueprint for a Co-operative Decade as its base. In addition to the five pillars (participation, sustainability, identity, legal frameworks and capital) in the Blueprint, NAMAC has added a sixth element, *partnerships with government and other entities*. The

strategy was approved by NAMAC's General Assembly in October 2014 and now the provinces are in the process of putting in place plans to adopt the strategy. NAMAC has an agriculture and training centre and now has a Coop LLC to focus on the business side of members.

**NAMAC's Mission is to be** a national body to support the cooperation and mutual trust among the rural producers and to promote the favourable environment for cooperative development

The member cooperatives of NAMAC comprise of more than 100 thousand individual members of 38 thousand households throughout Mongolia and about 200 thousand people benefit from the activities of cooperatives.

NAMAC has been engaging professionals, members and stakeholders to come up with amendments to existing laws. Agricultural cooperatives market products (cashmere) of members, the tax authorities consider this as a value-add. What they don't understand is that it is not the cooperative business but members' business. The government is offering subsidy on wool to herders provided they are or become a member of a cooperative.

### **2.3 Strategic Programmes**

MOFALI and MONET are currently developing draft policy proposals that set strategic direction in the food, agriculture and natural resource sectors for 2012-2016. Pending approval, these proposals suggest the continuation of existing policies, and also set measures to improve the overall legal environment by, for example, formulating **laws on livestock development and pasture management, ensuring food security, and guaranteeing social protection of rural population**. They will also create favourable conditions **to increase market access and enhance the value-chain agricultural products, improving natural resources management, and ensure environmental protection**.

Strategic objectives for *crop production* are defined in the development policy for agriculture and food industry set in the MDG-based Comprehensive National Development Strategy which states that (a) crop-farming production shall be increased **by improving land use, developing irrigated cultivation and introducing biotechnology**, and (b) advanced technology aimed at protecting **soil from erosion, preserving its fertility, reducing the moisture** loss shall be introduced in crop-farming in the first phase while volume of crop yield will increase during second phase. The government has also decided to continue "Third Reclamation Campaign" of

crop development by setting tasks to maintain achievements in the sector by supporting crop production in the Eastern and Western regions and developing programs on increasing vegetable and fruit production that were incorporated into revised National Program for Food Security.

The main strategy document for *food and agricultural* sector is outlined in the National Program for Food Security (2009-2016) which was formulated by the Government of Mongolia with FAO's assistance. The Program shall be implemented from 2009-2016 in two phases: 2009-2012 and 2013-2016. The overall goal of the program is to ensure sustainable supply of nutritious, secure and accessible food, which enables improved health and high labour productivity of the population, involving participation of the citizens, government, public and private sectors. The Program is to be implemented through Four Priority Pillars:

- i. Create enhanced enabling legal, economic, infrastructure and organizational environment for ensuring adequate, safe and nutritious food supply,
- ii. Stable supply for the population with safe, nutritious, secure and accessible foods and increase the proportion of the industrially processed food in overall consumption;
- iii. Improve monitoring and information network to ensure hygiene and safety of food products and drinking waters;
- iv. Improve safe and nutritious quality of food, supporting adequate, healthy diets through food safety and nutrition education, thereby reducing food-borne illness and nutrition deficiency and preventing from risk factors of non-communicable chronic diseases.

To address facing challenges deteriorating *environmental situation*, the Government of Mongolia has enacted a series of environmental laws, expanded its system of nature reserves, and started to invest in **energy-efficient technologies and pollution abatement schemes**. In addition, the Government of Mongolia is trying to mainstream environmental concerns into development, and is working with international organizations and civil society to promote environmental awareness. In addition, the Millennium Development Goals-based Comprehensive National Development Strategy of Mongolia aims to create conditions for sustainable use and **protection of forest reserves**, reforestation and maintenance of ecological balance. It puts forward objectives to explore forest reserves by using satellite data and remote sensing, determine the sprawl, structure, and composition of forests, develop forest mapping, implement sustainable **forest management programmes, undertake measures** to make climate milder, restock woodlands and create green zones in Gobi and steppe regions to facilitate fight against desertification, soil erosion,

and sand movement and strengthen forest protection through introduction of modern management methods and create a liability system to ensure proper use and protection of forests by allowing local residents and communities to own up to 20% of forests on a contractual basis.

### **ADB-Mongolia Partnership Strategy**

The interim country partnership strategy (CPS), 2014-2016 for Mongolia has two strategic pillars: competitive, sustainable, and regionally integrated growth; and inclusive social development. It identifies five priority sectors: transport, energy, water and other urban infrastructure and services, education, and health.

The interim CPS provides two strategic adjustments to the CPS for 2012-2016, reflecting changed government priorities. These are the inclusion of two additional sectors (agriculture, natural resources, and rural development; and finance) and scaling up ordinary capital resources (OCR) lending to meet pressing development needs.

Major changes to the CPS 2012-2016 are to emphasize:

- Employment creation through economic diversification and regional integration;
- Environmental rehabilitation and protection, with adaptation to climate change; and
- Renewed focus on basic education, social welfare reform, and support for people with disabilities.

### **3. An overview of Horticulture, Animal Husbandry and Fisheries**

#### **3.1 Horticulture**

The growing season throughout most of Mongolia is very short - and that is especially true here in the northern province of Khovsgol, nestled among the fingerlike extensions of Siberia's Sayan Mountains, which lie just to the north.

The combination of a high latitude (50 degrees north) and high elevation (about 1,200 meters above sea level) pushes the last frost of spring into June and brings fall's first frost as early as the first week of September - sometimes even mid-August.

But the climate is not really the biggest impediment to agriculture here or elsewhere in Mongolia. Tradition is perhaps the main reason that crops are grown on less than one percent of the nation's land area.

Historically a **nomadic people**, **Mongolians continue to rely on animal herds for most of their food**, exploiting the vast grasslands that compose the famous Central Asian steppes. The result is a diet for the average Mongolian that consists chiefly of meat and dairy products.



More recently, the legacy of dependence on a centralized economy, acquired during the Soviet era, has reinforced the limited diet. Governmental and non-governmental organizations are keenly aware of the problems posed by the limited diet. The national Government proclaimed 1993 as "food year" and has been promoting more large-scale production of crops like wheat, said Maitar Tsend, the director of the Mongolian Horticultural Society, an **independent NGO** which has also launched its own campaign to encourage **small-scale vegetable gardening**. The city government of Ulaanbaatar has given financial support to the Society in the campaign.

The Millennium Development Goals-based Comprehensive National Development Strategy of Mongolia states to contain depletion of animal and plant life, and create conditions for their natural recreation and sustainable use and foresees to revise procedures related to ensuring sustainability and natural growth of populations of rare and extremely rare species, lay legal and economic grounds for their protection, explore ways of creating reliable biological resources by using biotechnological achievements to perform assisted reproduction, and create and protect gene pools of rare and extremely rare species as well as to secure support from international organizations, donor countries and individuals for efficient implementation of long and short-term projects designed to establish and protect reserves and habitat of wildlife, and increase domestic and foreign funding sources.

### **3.2 Animal Husbandry**

Breeding Livestock: 30%

Major Livestock: sheep, goats, cattle, camels, horses

Animals raised commercially in Mongolia include sheep, goats, cattle, horses, camels, and pigs. They are raised primarily for their meat, although goats are valued for their hair which can be used to produce cashmere.

Mongolia has one of the largest concentrations of indigenous animal breeds in Asia. With a population of some 30 million head of cattle, horses, yaks, goats and camels, most herding households are self-sufficient in meat and milk products and earn an income from selling live animals, milk, meat, skins and hides, wool and cashmere.

The main strategic policy document for the development of livestock sector in forthcoming years is the "*Mongolian Livestock*" *National program* which will be implemented in 2 phases from 2010 to 2021. With a financial target of allocating no less than 3% of annual state budget, this program seeks to develop a livestock sector that is economically viable, competitive in a market economy,

and adaptable to impacts of climate change. The intention is to ensure a safe and healthy supply of food to the population, to deliver quality raw materials to processing industries, and to increase export revenues. In this context, the following priority areas have been outlined:

- i. Drawing special attention from the State to the livestock sector as the main traditional economic activity of the country, to assist in the formulation of a favourable legal, economic and institutional environment for sustainable development, and to develop a good governance in the livestock sector;
- ii. Improving animal breeding services based on social need/demand, increasing the productivity and production of high quality, bio-clean livestock products and raw materials and increasing market competitiveness;
- iii. Raising the veterinary service standard to international levels and protecting public health through securing Mongolian livestock health;
- iv. Developing livestock production that is adaptable to climatic, environmental, and ecological changes with strengthened risk management capacity; and
- v. Developing targeted markets for livestock and livestock products; establishing proper processing and marketing structures and accelerate economic turnover through an incentive system.

### 3.3 Fisheries Sector

Thirty-one species and subspecies of fish are of economic importance in Mongolia. In this country the present annual catch of about 600 t comes mostly from lakes, both freshwater and saline. The estimated commercial fishery potential is 3000 t yr<sup>-1</sup>, to which should be added an unknown, but probably a fairly substantial subsistence and sport fishery catch. The largest lake, Lake Hovsgol in the Arctic Ocean catchment, has a fishery potential of 200-400 t yr<sup>-1</sup>. In the past Lake Buyr in the Pacific Ocean catchment, shared by Mongolia and China, had the highest fish production of all Mongolian lakes. However, due to overfishing of the lake as a whole, catches in the Mongolian sector have declined from an average of 537 t yr<sup>-1</sup> in the late 1950s, to 40 t yr<sup>-1</sup> in the 1996-98 period. Lakes in the endorheic Central Asian Internal Basin have **no organised fishery**. The current national annual catch of 130 t needs to be substantially increased if the present fish consumption in Mongolia of about 1 kg per person per year is to rise. This could be achieved by improving inputs into the industry and better management. Since 1991 changes to market economy have lead to rapid over-exploitation of fish stocks through private initiatives. Scientific



backstopping which would guide fishermen in matters of sustainability and preservation of fish stocks, has been reduced to a minimum. At present **Mongolia has no aquaculture**, largely

due to the extremely harsh continental climate, with annual temperatures ranging from +30°C to -50°C, with long winters and thick ice cover on lakes and rivers. There is a proposal to test in a pilot study the possibility of raising local fish species in hatchery/farm conditions.

Mongolia has over 50,000 km of large rivers suitable for fisheries, and thousands of lakes, the total area of which is about 15,995 km<sup>2</sup>. More than 3000 lakes are larger than 10 ha, 27 are larger than 5000 ha and 4 are larger than 10,000 ha. The water surface area of lakes represents about 1% of the total area of Mongolia. The total volume of water stored in lakes exceeds 500 km<sup>3</sup>, of which 380.7 km<sup>3</sup> is stored in Lake Hovsgol Nuur (Tserensodnom, 1970). The highest number of fish species occurs in water bodies of eastern Mongolia, followed by the water bodies of the Selenga catchment (22 species), and by water bodies in the endorheic Central Asian Internal Basin (8 species). The fish fauna of Mongolia can be separated into three groups according to the above three major drainages.

Many fish species of Mongolia show great adaptability to a variety of environments. The same species may inhabit both warm and cold waters, fresh and saline, breed in rivers and lakes. In some species this has led to intraspecific differentiation. The highest number of fish species and sub-species inhabits water bodies of eastern Mongolia, followed by the catchment of the Selenga

Water bodies of the landlocked Central Asian Internal Basin of Mongolia harbour only 8 species. The total number of fish species and subspecies in water bodies of Mongolia is 64. They belong to eleven families: Petromyzonidae, Acipenseridae, Salmonidae, Coregonidae, Thymallidae, Esocidae, Cyprinidae, Siluridae, Gadidae, Percidae, Cottidae.



The fish fauna in the Shishhid River basin and in the River Hovd (Kobdo) is conspicuous for the absence of *Salvelinus*. The close similarity of the fish faunas of water bodies in the Darhat Basin, Selenga and Orhon rivers, and water bodies of eastern Siberia is the result of close hydrographic connections and similar climate. The presence of *Oreoleuciscus* and *Thymallus* both in the catchment of the River Hovd and in that of the upper Ob suggests that these today separated areas were connected in the past.

The Government of Mongolia also approved the National Program on Conservation and Propagation of Commercial Fish Species in 2008. The objective of the program is to protect commercial fish reserves and improve structure and management of fishery. The following priorities have been identified in fishery:

- i. Improve legal environment for growing commercial fish species;
- ii. Organize regular survey and monitoring of resources and habitats of commercial fish species;
- iii. Set standard of body size dimensions and fishing nets for each species of commercial fish.



#### **4. Present status and challenges in Agricultural Extension, Marketing, Insurance, Agriculture Mechanization, Food Processing, Infrastructure and any other relevant issues.**

##### **4.1 Present Status in Agricultural Extension**

Agricultural extension services in Mongolia are quite young and were introduced as a part of agricultural policy reforms. Until 1990, the Government of Mongolia followed a top-down planning system under which collective farms were operated and the decisions regarding the choice of agricultural technology were made at the central level.

Agricultural extension was embedded into the political system. As the central planning and collective farming approaches started collapsing and the privatization of state farms started, not to mention the losses of human life and livestock due to poverty, hunger and extreme weather, the need for a formal agricultural extension service was felt for the purposes of technology transfer and the education of farmers in sustainable agricultural development.

Under a loan agreement with the Asian Development Bank, the government established the National Agricultural Extension Center (NAEC) in the Ministry of Food, Agriculture and Light Industry in November 1996. The NAEC is the national level umbrella institution for directing and coordinating extension services provided by agricultural extension centers at the provincial (or *aimag*) level and by the agricultural extension teams at the district (or *soum*) level.

The agricultural Extension Service delivers useful services (knowledge and services) to all herders (f/m). Improved rangeland management, agricultural production and marketing are supported through demand-driven, participatory research and extension programs delivered in partnership with Pasture User Groups (PUG) s at the *soum* level.

Agricultural extension system is changing:

- ❖ Demand driven extension system
- ❖ Pluralistic services
- ❖ Wider services than before Traditional extension system need to be changed.

#### **4.1.1 Challenges**

Various challenges are faced by the young agricultural extension service.

- Financial constraints have not allowed the establishment of agricultural extension centers at all provinces and districts.
- There are no specific institutes and research programs focusing on extension issues.
- Physical facilities are quite limited and demonstration farms for animal and crop production have not yet been organized.
- The extension delivery responsibilities have been passed on to the provincial administrations upon the completion of certain donor-funded projects.
- Poor infrastructure- Road, bridge, irrigation systems
- Lack of safety and quality control
- Storage and transportation facilities
- Inappropriate loan portfolio
- Low level of education
- Lack of improved seeds, fertilizers and pesticides

#### **4.2 Agriculture Marketing**

The government ministries, industry boards, and state and collective farms insured the production and movement of agricultural products from farms to consumers. The socialist system

provided little incentive for producers, procurement agencies, or processors to expand the range of their market activities. Each was concerned with simply implementing the state plan in terms of quantity and quality.

The Mongolia milk market is localized around the large urban areas. Producers sell much of their milk directly to consumers and institutional users or to large milk processors in large urban areas who then sell at wholesale and retail to end users.

Cashmere has become Mongolia's most important agricultural export. Although meat has been a traditional Mongolian export, meat exports have declined since the transition to a market-based economy.

Both potatoes and vegetables are sold directly by producers to food markets and other retailers. There are no potato or vegetable processors or wholesalers except storage companies. Because local markets are small and the local population is generally self-sufficient in potatoes and vegetables, city food markets are the key buyers and provide both wholesale and retail functions in the market.

### **Current Problems in the Mongolian Agricultural Marketing System**

**Problems in the Mongolian agricultural marketing system related to producers include:** (1) insufficient productivity; (2) long distances between herder camps; (3) low livestock product output; (4) few joint marketing incentives; and (5) little knowledge of efficient marketing practices.

**Problems related to processors include:** (1) a lack of marketing strategies; (2) inactive operations; (3) poor financial conditions; (4) lack of competitiveness; and (5) long distances from producers.

**Problems related to market channels include:** (1) incompleteness and disorganization; (2) lack of coordination among buyers and sellers; (3) lack of contract-based marketing activities; (4) lack of organization in wholesaling and in the activities of intermediaries; (5) poor and undependable transport services and high transport service fees; and (6) strong competition from Chinese traders.

**Problems related to policy include:** (1) uncertainty regarding public investments in the development of market channels and distribution of agricultural products; (2) the lack of access to credit by producers and processors; (3) inconsistent and unclear policy and policy objectives with regard to the export of agricultural products; (4) the lack of public financing of infrastructure development; and (5) insufficient quality control systems.

## 4.3 Agriculture Insurance

### 4.3.1 Agricultural insurance market review

**Livestock insurance programs** were introduced in 2006. Crop insurance is not available.

In 2007/08 there were **four private insurance companies** offering livestock insurance through the Livestock Indemnity Insurance Pool, a public-private coinsurance pool.

Index-based livestock insurance is the only agricultural insurance product sold in Mongolia. It pays indemnities whenever the adult livestock rate exceeds a specific threshold for a localized region (e.g. the soum in Mongolia). Insured species are cattle, camels, horses, sheep, and goats.

Livestock insurance policies are delivered through companies' own insurance agent networks, which comprise from 140 to 170 insurance agents. Banks and MFIs are the other insurance delivery channel. Specifically, 20 credit officers deliver insurance in the three Mongolian provinces where livestock insurance is available. There are no special delivery channels or programs for small or marginal farmers.

### 4.3.2 Public Support for Agricultural Insurance

There is currently **no agricultural insurance legislation**, but a livestock insurance law is planned to be drafted in the future. Public support for start-up costs, training, and advertisement is provided by the government, with assistance of the donor community. The National Statistic Office, a public entity, performs the annual livestock census, which is used for the calculation of the livestock mortality index. The government provides stop-loss reinsurance to the Livestock Indemnity Insurance Pool at an actuarially fair price. Another form of public support to livestock insurance in Mongolia is the exception of sales taxes on livestock insurance premiums.

The public cost of insurance has been relative high during the first years of pilot implementation due to **start-up costs, mostly funded by the donor community**. However, the program is designed to be financially sustainable without heavy public subsidies.

### 4.3.3 Public Disaster Assistance Programs

Other forms of disaster assistance to agricultural producers are available in Mongolia. After major catastrophic events the government provides financial support to the herders and farmers. The National Emergency Management Agency is in charge of the program's implementation. Dzud (hard winter events) is the major cause of livestock mortality and is the peril covered by the disaster relief program. The **disaster relief program in Mongolia covers losses in excess of a 30% livestock mortality rate**

## 4.4 Agriculture Mechanization

### 4.4.1 Current Status

- At least 70 percent of Mongolian cereal farmers utilizes **outdated older machines** that made in Russia..
- Total of 62,000 **vegetable growers** own approximately 1-50 ha lands and the Mechanization is not developed much.
- No any draft animals used for farming at all.

### 4.4.2 Mechanization Development Today

- The government of Mongolia implemented Virgin Land-III program in crop sector between 2008 and 2011 and that supplied machines from Russia and China for midsize farmers.
- Farmers also **imported larger machines** from North America last few years and about 30 percent of the farmers use western high-tech machines such as Case New Holland, John Deere etc.

### 4.4.3 Machinery Distribution

- Starting from mid 2000s, new era dealerships has been established for western brands and many new brands from Russia and Eastern Europe.
- 5 main dealerships such as Case New Holland, John Deere, Challenger, Claas and Rosselmash works on machinery market of Mongolia and several other smaller dealerships founded for Chinese, Korean, and Eastern European brands.
- **Crop Farming Supporting Fund** is a state owned company also works on machinery market by mediating third party's equipment to the farmers.

### 4.4.4 Perspective on Mechanization

- The government policy focuses on **updating farm machines to soil conservation** types and better technologies for more productive way.+
- Mongolian crop farmers **has larger size** of lands therefore they needs higher capacity of equipment to do the farming in weather regulated short growing season.
- Many farmers are buying western made large tractors and machines via fewer dealerships, unfortunately the financing is the biggest obstacles at this stage.
- The government is working hard seeking for financial opportunities from the EXIM banks and manufacturers of the equipment.



## 4.5 Food Processing

The Government announced ‘Food Supply and Security’. In this scope, ‘Crop Rehabilitation Third National Mobilization’ program for crop development is developed in order to ensure full **self-sustainability of Mongolia for wheat, potatoes and other main vegetable items.**

### 4.5.1 Wheat

Mongolians are not the only ones who is facing a wheat supply trouble. It became a worldwide problem to solve. Wheat production plays a very big role in the Agricultural division as well as cereal grains are humankind's major food. **Wheat is the main crop in the country and wheat flour is the major food staple**, covering approximately 59 percent and 52 percent of the daily caloric intake in urban and rural areas respectively. In particular, wheat flour is essential in the diets of the extreme poor populations of the cities who could not afford to buy meat and milk products.

### 4.5.2 Potatoes and Vegetables

Mongolia also produces potato and vegetables, but the planting areas are very small related to wheat crop. Similar to wheat, potato and vegetable’s growing is concentrated in the Central provinces. The quality and safety of the **imported potatoes and vegetables** is widespread in the country and there is a clear market preference for locally grown products, despite their higher prices.

### 4.5.3 Animal husbandry

Animal husbandry is an old traditional custom of Mongolian life. **Our main livelihood source and the wealth is livestock.** The main foundation of Mongolia’s economy, pasturing livestock husbandry still plays an important role in our economy, employment and export revenues. Animal husbandry has a lot of benefits and two of them are:

- Meat
- Milk

Which are included in country’s strategic products. Mongolia is one of the leading countries of livestock per capita.

- **Meat:** The country is self-sufficient in meat and has an exportable surplus. Most of the meat consumed in the country is processed in rural households using traditional techniques.

- **Milk:** The bulk of the milk consumed in rural areas is in the form of customary milk products. Similar to meat, only a small proportion of the total milk produced in the country is processed by the formal dairy industry. Mongolia used to be self-sufficient in milk in the socialist period and even a small exporter.

#### 4.5.4 Government policy

Since providing the nation with natural, ecological and healthy products is one of the government's responsibilities, the Mongolian government is paying attention to undernourishment and planning to improve the food supply.

According to this project, government is planning many effective programs, such as increase **the usage of agricultural land, enhance irrigation, improve seed quality, fertilize soil, prepare more fallow land, develop agricultural machinery, train more professionals etc.**

#### 4.6 Agriculture Infrastructure

Mongolia's territory is very wide, with a total area of 1.566 million square kilometers, it is the 19th widest country in the world covering 0.31 percent of the world's surface. The Mongolian land area is characterized as 76.1 percent agriculture and pasture, 8.2 percent is covered by forests, 1.1 percent is covered by water and 0.2 percent is categorized as lands of cities, villages and other settlements.

The Mongolian agriculture sector has four discrete subsectors:

- (i) **Extensive livestock** which is the traditional semi-nomadic pastoral system, where camels, horses, cattle, sheep and goats are grazed together
- (ii) **Mechanized large-area crop production** of cereals and fodder crops
- (iii) **Intensive farming**, producing potatoes and other vegetables, with both mechanized and simple production methods
- (iv) **Intensive livestock**, with housed dairy cattle, pigs and poultry. The livestock sector dominates, contributing 84.9% of total agricultural production.

Most important crops were very rapidly replaced by the new varieties from the Soviet Union. Many local varieties of cereals, vegetables were ignored for many years, because of their low yields, but it has only recently been discovered that local varieties carried genes for resistance to drought and diseases, with high protein contents and early maturity. Now, more efforts are being given to the collection and preservation of plant genetic resources, including local varieties.

## 5. Status of Agricultural Extension and Research system

### 5.1 Status of Agricultural Extension System.

Under a loan agreement with the Asian Development Bank, the government established the National Agricultural Extension Center (NAEC) in the Ministry of Food, Agriculture and Light Industry in November 1996. The **NAEC** is the national level umbrella institution for directing and coordinating extension services provided by agricultural extension centers at the provincial (or *aimag*) level and by the agricultural extension teams at the district (or *soum*) level.

The total number of staff working at NAEC branch offices in all 130 districts of all provinces is over 1,100, about 57.5 percent of which are female. In 2003, about 50 researchers were voluntarily working as part-time extension agents in different aspects of the agricultural sector. Each provincial extension office has one full-time formal extension worker and six to seven part-time advisors. Over 120 non-official extension agents are spread across the country.

In terms of technical specialization, the total number of 410 official extension advisors, includes 123 veterinary doctors, 111 agronomists, 115 zoo technicians and 61 staff in other technical subjects. In addition, there are 690 professional advisors working for extension. Sources of these technical advisors are research institutes (Mongolia has about 50 research institutions), universities, cooperatives, government institutions, NGOs and private scientific organizations. About 64 extension groups consisting of 250 farmers and technical advisors had been established by 2005.

The capacity of the extension system is weak and public investment for rural advisory services is low with high dependence on international projects. Farmers are seen as recipients of extension. Producers' participation and involvement in the planning and development of research and extension activities is weak and often ignored. Public, private, non-governmental organizations and international organizations provide extension and advisory services.

### 5.2 Research System

There is a **lack of cooperation among research institutions** as well as between research and extension in view of the fact that all research and academic institutions belong to the **Ministry of Education** while the agricultural extension service is under the Ministry of Food, Agriculture and Light Industry. Many **multi-lateral and bi-lateral donor agencies** have been assisting Mongolia in the field of rural and agricultural development, and some projects have focused on strengthening just extension. The agencies include the Asian Development Bank (ADB), United

Nations Development Program (UNDP), Food and Agriculture Organization of the United Nations (FAO), International Fund for Agricultural Development (IFAD), United States Agency for International Development (USAID), European Union (EU), German Technical Cooperation (GTZ), Danish International Development Agency (DANIDA), the Swiss Agency for Development and Cooperation (SDC), Technical Assistance to the Commonwealth of Independent States (TACIS), Canadian International Development Agency (CIDA), Japan International Cooperation Agency (JICA), World Bank, and possibly some other donor agencies.

Some of the Research institutes are in Mongolia:

- The Mongolian State University of Agriculture
- The University of Agriculture
- The Plant Science Agricultural Research and Training Institute
- Independent Research Institute of Mongolia (IRIM)
- National University of Mongolia (NUM)
- Mongolia International University (MIU)

## **6. Public and Private Institutions and their Relevance in Agricultural Development.**

### **6.1 Public Sector Organizations**

Under Ministry of Food, Agriculture and Light Industry **the National Agricultural Extension Center (NAEC)** is responsible for operating and managing the public extension services for farmers in Mongolia. The NAEC headquarter is in Ulaanbaatar and its offices are located at the provincial and district levels.

**Human resources:** The NAEC headquarters has a relatively small number of permanent staff (only 10 staff in 2003). However, it is technically assisted by an advisory group of about 60 experts/scientists. The total number of staff working at NAEC branch offices in **all 130 districts** of all provinces is over 1,100, about 57.5 percent of which are female. In 2003, about 50 researchers were voluntarily working as part-time extension agents in difference aspects of the agricultural sector. **Each provincial extension office has one full-time formal extension worker and six to seven part-time advisors.** Over 120 non-official extension agents are spread across the country.

**The Mongolian State University of Agriculture** offers degrees and diplomas in several agricultural disciplines, but it is not responsible for providing direct extension services to the farmers. It has, however, several programs that strengthen agricultural extension in Mongolia. For

example, the university conducts research and technology advancement studies on key issues of rural development, ecology and agricultural production. It **offers specialized training in technical and professional aspects for rural producers and business people**. The institution also conducts **extension-based activities for technology transfer and introduction of modern scientific achievements**. The university has an extension training center, established in 2006 under a CIDA-funded Training for Rural Development Project. The center's main activities are training of farmers, provision of advisory services to the farmers and investors, organization of events, and the preparation and distribution of extension publications. The center also collaborates with relevant institutions in the implementation of donor-funded projects in agricultural and rural development.

The state policy on **agricultural extension is to motivate and educate citizens** and employers in the rural areas to engage in profitable production under market conditions, develop methods to introduce scientific and technical achievements in the industry, and to advertise and deliver information reflecting state policy. The government has prepared the **National Program for Food Security** (2009-2016) and the Agricultural Bank of Mongolia handles credit requests of these farmers.

## **6.2 Farmers associations and cooperatives**

There are several farmers' associations and cooperative societies in Mongolia. Three examples are:

- National Association of Mongolian Agricultural Cooperatives (NAMAC)
- Mongolian Women Farmers Association (MWFA)
- Mongolia Farmers Association (MFA)

National Association of Mongolian Agricultural Cooperatives (NAMAC): NAMAC role is increasing agricultural production efficiency, improving living standard of rural population and developing educational and cultural welfare.

Mongolian Women Farmers Association (MWFA): The association's main activities are to train single-parent women-headed households to grow and sell organic vegetables and poultry, and thereby increase their income.

Mongolian Farmers Association (MFA): MFA is a voluntary farm organization dedicated to creating a policy environment that improves the profitability and sustainability of farming and agricultural industry as a whole

### **6.3 Private Sector Organizations**

Apparently, **there are no “home-grown”** national NGOs in Mongolia. The closest institution to a national NGO is the Mongolian Development Gateway <http://www.mongolia-gateway.mn> that was established in 2002 under the World Bank InfoDev Program. Its members are Mongolians, and its extension type projects cover distance education, distance diagnosis for rural people’s health, and small and medium enterprise technology transfer.

Quite **a significant number of international NGOs** have been working in Mongolia since 1990. According to the 2004 data, almost 32 percent of international NGOs in Mongolia have their headquarters in USA and about 14 percent in the Republic of Korea. These NGOs are involved mainly in the provision of basic human needs, relief to the needy social groups, and promotion of peace, human rights, and democracy. Names of a few international NGOs are Soros Foundation, World Vision, Asia Foundation, Save the Children, Hanns Seidel Foundation, and Adventist Development and Relief Agency.

### **7. Present Capacity building Programmes and Potential Areas**

The review of capacity building programme organized for the Public Private and NGO sectors have been reviewed. It was observed that the capacity building programme exclusive for agricultural development was very meagre in view of less number of permanent staff in National Agriculture Extension Centre, Mongolia upto 2003. The Mongolia government slowly expanded the manpower in the public sector for agriculture development and given more emphasis to recruit part-time extension agents.

A good number of donor organizations initiated capacity building programme activities as per the need of the country for its sustainable development. The following are the few programmes organized by the donor agencies and potential areas covered.

| S.No.    | Organizations  | Capacity building programmes / potential areas   |
|----------|--|--|
| <b>1</b> | <b>UNDP- Country Programme Action Plan 2012-2016</b>                   | <ol style="list-style-type: none"> <li>1. Improved capacity for pro-poor policies including support to the development of a national poverty reduction programme (NPRP)</li> <li>2. Pro-poor and trade policies supported, through promoting global and South-South Cooperation</li> <li>3. “Capacity Strengthening of Local Self-Governing Bodies”</li> <li>4. Youth Empowerment through a NGO (Centre for Citizenship education and MONFEMNET)</li> <li>5. <b>Improved sustainability of natural resources management and resilience of ecosystems and vulnerable populations to the changing climate</b></li> <li>6. Management of pasture/ land, water resources and biodiversity improved through landscape - based planning approach</li> <li>7. National climate and disaster risk management</li> <li>8. Capacities of vulnerable sectors and communities in climate change adaptation and mitigation</li> </ol> |
| <b>2</b> | European Union   | Appropriate export development strategies  |
| <b>3</b> | World Bank   | Gender equality and environmental protection   |
| <b>4</b> | Mongolia Livestock and Agricultural Marketing Project under World Bank | Training and awareness activities for the Technical Services Providers (TSP) as well as the Veterinary, Animal Husbandry and Breeding Units (VABU’s)   |
| <b>5</b> | UNEP   | <ol style="list-style-type: none"> <li>1. Bio-diversity conservation and to have more trained professionals in biotechnology, plant breeding, genetic engineering (with focus on rice crop), non-wood forest products, biometric/ research, and socio-mitophology.</li> <li>2. Training in agricultural soil conservation and land management techniques soil fertility management, sloping agriculture land technology, agro-forestry and irrigation management, and livestock and grazing management</li> </ol>  |
| <b>6</b> | UNESCAP  | Capacity building programme on Trade and Investment  |
| <b>7</b> | AusAID - Australia– Mongolia Program Strategy 2012-2016                | <ul style="list-style-type: none"> <li>• Human resource development</li> <li>• Mining for development</li> <li>• Supporting vulnerable communities</li> </ul>  |

## **8. Training priorities of the country in Agriculture and Allied sectors**

The Mongolia is landlocked with Gobi desert, mountain ranges and eastern part with plain land and the northern part with rivers. More emphasis were given on traditional herding and agriculture. Country has extensive mineral deposits which gives more GDP (21.80%) than agriculture (16.00%).

Mongolia confronts a unique set of development challenges. While Mongolia has made important progress in strengthening its democratic and free market systems, and economic growth has taken it to lower-middle income country status, Mongolia's poverty rate remains high (39 per cent) of the population have an income below the national minimum living standard, rising to 54 per cent of the population in rural areas. Inequality has widened in recent years, with the initial benefits of Mongolia's mining boom disproportionately accumulating among a narrow, elite section of the population.

The agriculture scenario indicates only one percent of the Mongolia is cultivable and its yield tend to be low with the short growing season of about 100 days in view of long hot summer days for about 250 days. The extreme hot climate severely affects agriculture and limits potential for agriculture development. This results, contribution from crop production in agriculture sector is less. However, due to extensive livestock particularly more number of goats, camels, horses etc. provide cashmere to the farmers which contributes about 85% of total agricultural production. Cropping only employing 3 per cent of the population.

Since 2009, the government of Mongolia has taken various initiatives in development of state policies for agriculture, herders, food and nutrition security etc. The MDG – based comprehensive national development strategy for Mongolia framed goals and objectives for development of modern agricultural and industrial complex to enhance marketing of agricultural products and to protect environment. The government support to a NGO for establishing National Association of Mongolian Agricultural Cooperatives has strengthened agricultural training centres covering importance of participation, sustainability, identity, legal frameworks capital and partnerships.

The strategic plan of the Mongolian government widely covered laws on livestock and pasture management, ensuring food security, guaranteeing social protection of rural population, increasing market access and enhancing the value-chain agricultural products, improving natural resources management and ensuring environmental protection. The potential areas covered under



National Development Strategy are **improving land use, developing irrigated cultivation and introducing biotechnology and protecting soil from erosion, preserving its fertility, reducing the moisture loss.**

To address the environmental issues, the country has started to invest in **energy-efficient technologies, pollution abatement schemes, protection of forest reserves and forest management programmes.**

Horticulture sector was given less importance due to the climatic condition and the farmers were promoted to have small scale vegetable gardening. Mongolian Horticulture society (NGO) has taken initiative in this regard. In the animal husbandry sector Mongolians continue to rely on animal herds for most of their food.

Mongolia has no aquaculture and no organized fishery. Recently, the government has launched national programme on conservation and propagation of commercial fish species to protect fish fauna. National Agricultural Extension Centre was established under Ministry of Food, Agriculture and Light Industry for implementing the extension services. In general, the capacity of extension system was weak and the public investment for rural advisory services was low with the high dependence of international projects. R-E-F-Linkages was also weak and often ignored in view of the research system is under the control of Ministry of Education. In view of that the Public agriculture extension system have many challenges on technology transfer.

There are problems in the Mongolian agricultural marketing system related to producers and marketing channels. No Agricultural insurance scheme. However, livestock insurance programmes are going implemented by private insurance companies.

Agricultural mechanization is being implemented by importing larger machines from neighboring countries. As about 70% of Mongolian cereal farmers utilizes out dated older machines, the government established a state owned company called ‘crop farming supporting fund’ to facilitate the farmers to buy machineries. The major crops grown in Mongolia are wheat, potatoes and few other vegetables. Meat and Milk are the country’s strategic products which play major role in country economy and export revenues. The analysis of the country report indicates the capacity building programme for the extension functionaries are very meagre by the public sector. The country depends on donor agencies for providing capacity building programme on agriculture and other development sectors.

Therefore, human resource development has always been important to Mongolia, for quality and relevance. In a low-population, high-growth environment, Mongolia's public sector in particular is facing severe human resource constraints, especially as it works to implement reforms. Officials are also under pressure to manage a broad range of public sector accountabilities related to the agriculture and other developmental areas. In this context the following are the training priorities for the Mongolia.

### **8.1 Subject Matter Specific Training Priorities**

- Land use planning and management
- Soil conservation and fertility management
- Irrigation management
- Livestock management - mainly on goats
- Management of camels and horses
- Fodder development
- Pasture management
- Value chain management for meat and milk
- Improved cultivation technologies on wheat
- Improved cultivation technologies on potato
- Kitchen garden for promotion of vegetables
- Technologies for commercial fish production
- Custom hiring model for farm mechanization
- Farm machinery – operation and maintenance
- Crop insurance schemes
- Climate resilience in agriculture
- Climate change
- Climate mitigation and adaptation
  
- Forest Management

## **8.2 Extension Specific Training Priorities**

- Importance of farmers training centres
- Extension approaches
- Extension training management
- Participatory management
- Use of mass media in Technology Transfer (at Basic level)
- R-E-F-Linkage
- Marketing Infrastructure
- Linking farmers with market
- Training evaluation
- Impact assessment of training
- Public Private Partnership in extension and research
- Monitoring and Evaluation of extension programmes / schemes
- Human resource management
- Role of research system in sustainable development in agriculture
- Preparation of agriculture plan at district and state level
- Role of financial institutions in agriculture development
- Youth in Agriculture
- Entrepreneurship development

## **8.3 Number of Extension Functionaries to be Trained in Priority Areas.**

- It is suggested to train about 10-15 extension functionaries from each of the agriculture and allied sectors following Training of Trainers (ToT) approach. So that they in turn impart training back home at Mongolia to the extension functionaries. Few extension functionaries working in NAEC of Ministry of Food, Agriculture and light and Agricultural Researchers working in Ministry of Education may be provided training to address the challenges in the identified priorities areas.

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