



GOVERNMENT
OF MONGOLIA



RIO+20
United Nations Conference
on Sustainable Development



Mongolia

MONGOLIA'S SUSTAINABLE DEVELOPMENT AGENDA:

PROGRESSES, BOTTLENECKS AND VISION FOR THE FUTURE

ULAANBAATAR
2012

This report has been prepared and published with the financial support of the United Nations Development Programme (UNDP).

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CE	Coefficient of efficiency
CES	Central energy system
ED	Energy Department
EE	Electrical energy
ERA	Energy Regulatory Authority
ES	Energy system
ESWR	Energy system in western region
FAO	Food and Agriculture Organization
GAP	Government Action Programme
GDP	Gross Domestic Product
HPS	Hydropower station
MAP 21	Mongolian Action Programme for the 21st century
MDB CNDS	MDG based Comprehensive National Development Strategy
MECC	Mongolian Environment Civil Council
MNCC	Mongolian National Chamber of Commerce and Industry
MNSC	Mongolian National Security Concept
MoFALI	Ministry of Food, Agriculture and Light Industry
MoMRE	Ministry of Mineral Resources and Energy
MRCUD	Ministry of Roads, Transport, Construction and Urban Development
NCRE	National Center for Renewable Energy
NCSD	National Council for Sustainable Development
NPRE	National Programme for Renewable Energy
PA	Protected Areas
RE	Renewable energy
RF	Russian Federation
SGK	State Great Khural
SOSC	State owned share holding company
SPS	Solar power station
TPS	Thermo-power station
UN	United Nations
UNDP	United Nations Development Programme
UNDESA	United Nations Development of Economic and Social Affairs
UPIRC	Urban Planning, Information and Research Center
USA	United States of America
WDS	Water Distribution Site
WPS	Wind Power Station
Aimag	Districts
Soum	Sub-districts
Khural	Local Citizen's representative Council

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The Mongolian Action Programme for the 21st Century (MAP 21) was developed between 1994 and 1998 and approved by the Government of Mongolia in May 1998. The current analysis has been made with a view of assessing the progress, achievements and challenges in implementation of this agenda from today's viewpoint after two decades of efforts to attain universally agreed sustainable development goals. The current assessment report has been prepared on the basis of the 2002, 2006 and 2010 assessment reports on the implementation of MAP 21, annual reports of the implementation of Government action programmes and local level reports on achievements of the plans which were integrated into National Programme for Sustainable Development developed in 2011. The assessment report also made use of data on the implementation of the aimag and capital city Agenda 21. While drafting the assessment report, the team followed the structure and outline of the zero draft developed by the UN Commission for Sustainable Development and Preparatory Committee for Rio+20, distributed to member countries. It is important to assess MAP 21 regularly, because moving towards a green economy must become a strategic economic policy agenda for achieving sustainable development.

Mining sector predominance in today's development of Mongolia has created unique circumstances. The Government of Mongolia has started to pay attention to search sustainable policies for multiple issues such as the exploration, processing and usage of natural resources with a minimum impact on environment, use of natural resource revenues for promotion of domestic production, distribution of the revenues for social purposes and planning and implementation of rehabilitation actions. In accordance with the TOR provided by UNDP and Government of Mongolia, the report has been prepared with four themes: (a) biodiversity, ecosystems and sustainable tourism, (b) sustainable energy, (c) infrastructure and urban development, and (d) sustainable agriculture.

The assessment report has integrated official comments from the Ministry of Nature, Environment and Tourism (MNET), the Ministry of Defence, the Ministry of Education, Culture and Science (MECS), the Ministry of Health (MoH), the Ministry of Roads, Transportation Construction and Urban Development (MRTCUD), the Ministry of Social Welfare and Labour (MoSWL), the Ministry of Finance (MoF), the Ministry of Justice and Internal Affairs and the National Development and Innovation Committee (NDIC). A summary has been provided in each chapter of the report.

To the initial version of the assessment report, inputs were taken from consultations with MNET officers and aimag officers in charge of sustainable development and the environment, aimag reports on the implementation of MAP 21 and findings of interviews conducted by the team members¹. The consultations with the officers focused on their sustainable development perspective and the existing

¹ Consultation of "Local Implementation Status of Mongolia's Agenda 21 for Sustainable Development", MNET, January 16, 2012

approach and progress of the programme implementation in rural areas and problems encountered during its implementation. At the same time, the assessment report has incorporated the proposals which were made by local advisors participated in drafting of Mongolia's Agenda 21 and private and public academicians and politicians at the session "Mongolia's Inputs to Rio 20", held on February 16, 2012.²

I am most privileged to express my deep appreciation to UNDP and UNDESA for its financial support in preparing the report. My sincere acknowledgement goes to Ts.Banzragch, Director of Department, MNET and S.Tumenjargal, MNET officer, and B.Bunchingiv, UNDP Officer for their immense support in methodological guidance and making the local reports on results of the programme implementation available for the team. My special thanks are due to the aimag officers in charge of sustainable development and environment who shared their valuable comments at the consultative session "Mongolia's Inputs to Rio 20" held on January 16, 2012. Finally, I would like to express my deep gratitude to our team members who prepared background papers and devoted their exclusive efforts in drafting the report, namely M. Bum Ayush (Sustainable energy), Sh.Dagva (Biological diversity, ecosystems and tourism), D.Myagmar (Infrastructure and urban development) and D.Shombodon (Sustainable agriculture).

Professor Dr. B. Khuldorj, Principal author

² "Launch of Global Human Development Report 2011 and Consultation of Mongolia's input to Rio+20" Meeting, MOFAT, February 16, 2012



The Mongolian Action Programme for the 21st Century (MAP 21) was approved by the Government while I was the Prime Minister of Mongolia, in May 1998. It was the first comprehensive blueprint enabling Mongolia to align itself with international development. When we, Mongols, were developing this agenda, we paid the utmost importance to ensuring economic independence through linking regional and local environmental and social issues with the country's macro-economic development. MAP 21 managed to draw attentions of the state and general public to many latent issues worldwide and in our country, such as climate change, environmental degradation, desertification, biodiversity depletion, poverty and air pollution.

The forthcoming UN Conference on Sustainable Development will engage in an earnest discussion about progresses in the implementation of the agenda and determining a more inclusive and encompassing global development path. The present report was developed to share Mongolia's experience, efforts, and lessons learnt with our partners.

A glance at the development progress over the last two decades highlights the need to further move ahead and upgrade the institutional structure of the public sector, non-governmental and business organisations to achieve sustainable development, introduce and promote green economy and alleviate poverty. As a starting point, priority will be given to plan and implement actions towards formulating a more appropriate and effective institutional framework with a clear plan of action.

Green development is humanity's choice evolving from vital global interests and real demands. I am confident that humanity can build up a green, peaceful mother Earth without poverty, if we move from conflicts to a friendship, from confrontations to a dialogue, from crisis to opportunity, and from competition to a partnership and cooperation.

President of Mongolia

A handwritten signature in black ink, which appears to read 'Ts. Elbegdorj'.

Tsakhiagiin Elbegdorj

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The traditional Mongolian lifestyle is in close symbiosis with the nature and Mongolian mentality is deeply rooted in and conditioned by the environment. That's why Mongolia warmly welcomed the Rio Declaration proclaimed at World Summit in 1992 and took immediate actions to draft and implement Mongolia's Agenda 21. Within the 20th century, Mongolia developed its own Agenda 21 at the national and local levels, extensively involving various stakeholders and the general public and using a bottom up approach in planning. Local *Khurals* have started implementing the agenda which was formally approved by the Government of Mongolia. "Mongolia's Agenda 21 does not only represent the nation's will for freedom and a wealthy life in the coming century, it also commits to the goal for the Government and people to work together for a better life"³.

1. In the last two decades tremendous achievements have been reached in developing a legal environment for sustainable development. As a follow-up of Mongolia's Agenda 21 (1998), the "MDG based Comprehensive National Development Policy" (2008) has been adopted. The comprehensive national development policy has synergized the perspective, goals and targets which have been stated and formulated in 304 policy documents, developed and approved in the last fifteen years. These documents were based on the Constitution of Mongolia (1992), Mongolia's Development Strategy (1996), Mongolia's Agenda 21 (1998), Mongolian National Development Programme (2005), "Mongolia's National Security Concept", "Mongolia's Foreign Policy Concept", "Strategic Document for Economic Growth and Poverty Reduction", "Mongolia's Regional Development Strategy", "Mongolia's Millennium Development Goals" (2005), "Mongolia's National Reports on Millennium Development Goals" and Mongolia's Regional Development Programme: and others. *Despite these achievements, there is room for improvement to integrate the implementation of these policies in a more holistic way and ensure the continuity of subsequent step wise documents and in particular qualified and experienced human resources.*

2. Substantial progress has also been made in updating a national and sectoral legal environment integrating sustainable development concept and principles. Mongolia has 27 valid laws and 27 endorsed national policies on environment and tourism. Between 2008 and 2012, a gap analysis was carried out to identify gaps, conflicts and overlaps in the environmental legislation, leading to revisions in 18 laws, while 2 new laws were added.

³ Ts.Elbegdorj, Foreword,, The Mongolian Action Programme for the 21st Century (MAP 21): Executive Summary and Strategic Analysis, Ulaanbaatar, 1998

The Law on renewable energy regulates the procedures regarding the Clean Development Mechanism (CDM) starting from 2007. The Government approved “National Programme for Renewable Energy (NPRE)” in 2005 and the updated programme for standard energy systems in 2007. As stated in the NPRE, 3.0-5.0 percent of the total energy to be produced from the renewable sources by 2010. These figures are expected to grow to 20.0 – 25.0 percent in 2020. As a result of formulating and implementing sustainable development programmes by all aimags, many soum centers are now linked to central electricity system. Over 90% of all the soums have access to the central electricity grid. In addition, 70.0 – 90.0 percent of the total herder households has access to solar and wind power. The National “One Hundred Thousand Solar Lights” Programme has helped make a drastic increase in access to solar energy for herder households. *Thus, the implementation of the aforementioned programmes has been successful thanks to satisfactory state regulations and public and private partnerships.*

3. A legal environment was created in Mongolia to regulate population settlement, improve urban planning and prevent urban overpopulation within the sustainable social development framework. The last two decades of the implementation of agenda 21 resulted in increasing investments in roads, transport, construction, urban development and urban services in line with the Government Action Programmes and the MDG based Comprehensive National Development Strategy (CNDS). Mongolia’s regional development concept was approved in 2001, along with the Millennium Road and Vertical Axis of Infrastructure in 2001 and regional centres in 2003 to 2010 and the medium-term regional development strategy in 2003. State Great Khural (SGK) endorsed the Law on urban construction in 1998 and 2008, and the Law on directives of regional development in Mongolia in 2003 and the Law on legal status of towns and villages in 1993. In addition, measures are being taken to update a number of laws to keep up with the pace of socio-economic growth and comply with environmental protection requirements. These include laws on “Urban development”, “Green Urban Environment”, “Building co-ownership”, “Housing Finance”, “Autovehicle Parking”, “Construction“, “Housing “, ”Land”, “Pricing of Land”, “Land Use Fees”, “Cadastral Mapping and Land Cadastre”, “Geodesy and cartography”, “Auto road”, “Railway Transportation”, “Civic Air”, “Inspection and Control of Air Traffic accidents and violations”.

4. Significant achievements were made in the development of the food and agriculture sector to improve food supply for the population. The government has taken measures to promote intensive livestock and crop farming to meet the

food demand for urban population. The measures for safeguarding the livestock gene fund and improving animal breed have resulted in increasing number of intensified and semi-intensified animal farms by two to nine times and the high productive animal population by 4-5 to 5.6 times per livestock type. The relations of food and agriculture sector development, food supply and safety in Mongolia are being regulated by the laws on “Food”, “Land”, “Water”, “Protection of Animal Health and Gene Fund”, “Embargo on transboundary transportation of animal and plant derived products”, “Crop farming” and “Hygiene”. The Government of Mongolia implemented the National Crop Campaign III in 2008-2010 achieving domestic self-sufficiency in production of wheat, potato and other main vegetable types. The implementation of the Crop Campaign III has brought environmentally friendly or zero tillage technology to conserve soil fertility and highly productive planting and harvesting equipment and machineries. Non-governmental organizations (NGOs) such as Mongolian Farmers Association for Rural Reform and National Association of Seabuckthorn Producers, work towards promotion of rural development, crop farming and horticulture and contributing to greening of agriculture sector in Mongolia. The National Association of Seabuckthorn Producers organized trainings for over 2,000 people in seabuckthorn planting. The seabuckthorn was planted in 3,310 ha of lands between 2010 and 2011.

5. The rights and duties of community partnerships, professional and NGOs to engage in environment protection and conservation have been legalized by the Environmental Protection Law which was updated in 2012.

There were 300 community partnerships with over 9,000 members and over 4,000 households engaged in environmental protection and conservation in 2008. By 2011 more than 500 NGOs and 13 thousand people worked in nature conservation. They managed 1,342.6 thousand ha of forest land in 2010, and the figure rose to 1,843.7 thousand managed by 631 forest partnerships in 2011. In the same year 59 enterprises and organizations managed 311.6 thousand ha of forest land across 40 percent of all Aimags.

6. While making policy revisions, estimations were made to balance environmental degradation and resource depletion and to account the net GDP. This is driven by the purpose of mainstreaming the principle of “balanced and equally beneficial economic growth and ecological wellbeing in national development policy planning”, “updating the institutional set up in order to enhanced duties and commitment of cross sectoral environmental management” and “enhancing the participation and commitment of enterprises, organizations and citizens”. Better quality

of living conditions for people supports human development by all means, therefore, local community-based environmental management should be effectively introduced. With the improvement of education and training and information systems for sustainable education, the goal of poverty alleviation and human development can be achieved. A mechanism to address the most pressing issues is environmental governance which supports capable staff, consistent legal environment and sound management system. For the purpose of ensuring the country's sustainable development and promoting economically efficient, responsible and environmentally friendly development in today's economic and social relations, concepts are being followed in updating the legal framework by introducing environmental auditing in compliance with international standard, the polluter pays principle, local community engagement in environmental protection, increasing natural resource valuations, establishment of stable funding source for environmental protection measures and practicing sustainable natural resource management.

7. Despite the progresses in the sectors covered by the current assessment, no single Ministry was mandated to oversee and guide sustainable development issues in a concerted way in Mongolia. To date, the Ministry of Nature, Environment and Tourism is in charge of sustainable development issues. However, it lacks a legal framework allowing the adequate functioning with specialized staffing and budget. In addition to their main duties, ministries, agencies and local administrations are also responsible for achieving sustainable development targets and actions within the respective sectoral and local territorial mandates. Under this arrangement, they separately plan the investments for sustainable development targets and actions to submit to the Ministry of Finance for integration in the state budget. Hence, the implementation of sustainable development agenda by the ministries, agencies and local administrations are fragmented and lack coordination. Such a fragmented approach fails to lead to effective coordination by the government and employ public and private partnerships, thereby adversely affecting the implementation of the agenda for sustainable development. This implies that there is discontinuity of the sustainable development concept in subsequent policy documents or sufficient commitment of human resources. These shortcomings should be addressed in pursuing the path for green development.

8. Policy makers need to pay attention to the fact that many issues such as adaptation to climate change, coping with desertification, abatement of urban air pollution, promotion of renewable energy, poverty reduction and livelihood improvements have intrinsic links with the

green economy concept. Mongolia has accumulated extensive experiences and made significant progresses in the development of sectoral policies to address the aforementioned issues. Much has been achieved in starting and nurturing inclusive decision making in formulating programmes and projects supported by international organizations and it is time to mainstream these achievements into the development policy making at the national level.

2

MONGOLIA'S COMMITMENT TO UPDATING ITS SUSTAINABLE DEVELOPMENT POLICY



Two decades ago, in 1992, the World Summit on “Environment and Development” was summoned in Rio De Janeiro to define key principles of sustainable development for the first time ever and called for nations and countries to apply those principles as a leading principle in their development efforts. In 2002, Rio+10 was convened in Johannesburg to review and summarize the progresses, steps forward and lessons learned over the past period and to refine future development pathways and trend, and set forth the Millennium Development Goals. During that summit, the Johannesburg Declaration was approved to call member states for taking immediate actions to respond to the need of protecting clean water, health, food security, and biodiversity and preserving the ecosystem balances while meeting basic demands of humans.

Following its commitment to this universally recognized and accepted mission of the Declaration, Mongolia has endorsed its milestone policies which define the country’s development tendency: “Mongolian Action Programme for the 21st Century” (1998) and “MDG based Comprehensive National Development Strategy” (2008). The CNDS is a lead policy document which has synergised the concepts, key goals and contents of 304 state and government policy documents starting from the Constitution of Mongolia (1992), the Development Concept of Mongolia (1996), Mongolian Action Programme for the 21st Century (1998), Mongolian National Development Agenda (2005), “Mongolian National Security Concept”, “Mongolian Foreign Policy Concept”, “Strategic Document for Economic Growth and Poverty Reduction”, “Mongolia’s Millennium Development Goals”, “Mongolian National Report of Millennium Development Goals”, “Mongolia’s Regional Development Policies” (2005) and Mongolia’s Regional Development Programme. These policy documents have been enacted in the last fifteen years.

The Government of Mongolia has begun to pay attention and take measures to harmonize regulations for sustainable development. The Parliament endorsed the Mongolian National Security Concept in 2010 that spells out “Environmental balance, water resources conservation, mitigation of impacts of climate change and land degradation, prevention from biodiversity depletion and reduction of environmental pollution, natural disasters and calamities shall be the basis for people’s healthy living and environmental security”⁴. Furthermore, the Government Action Programme for 2008-2012 states that “Enabling environment for sustainable development will be created and comprehensive tourism policy will be put to action through integrated policies of protection, sound utilization and rehabilitation of natural resources without perturbing ecosystem balances.

Biological diversity, ecosystems and sustainable tourism. There are 33 valid laws and 27 national policies and programmes in the environment and tourism sectors in

⁴ The Mongolian National Security Concept, 3.5. Environmental Security, Ulaanbaatar, 2008

Mongolia. Environmental policies and intended updates and upcoming revisions in the policies shall aim towards introduction and promotion of sustainable production and consumption patterns, universally accepted principles and methods of environmental management, creation of independent environmental funding which will be capitalized from increased pricing of ecosystem services of biodiversity, water and forest resources and ecological taxing, and introduction of rehabilitation methods in the mining sector.

The targets in the CNDS serve as a fundamental principle for holistic policies of sustainable development in Mongolia. The targets state to “form an enabling environment for sustainable development through building capacity to cope with climate change, neutralize and halt the ecosystem imbalances and protect ecosystem services and functions”⁵ and implement integrated package of economic, social and ecological policies for preservation of air, land, and underground resources, forest, water, flora and fauna, sound use and rehabilitation of natural resources, adaptation to climate change, coping with desertification and drought, reducing chemical pollutants and radioactive wastes and improvement of waste management.”⁶, The Strategy also states “promotion of intensive development of tourism as one of the leading economic sectors”⁷.

2.1. Reaffirming Mongolia’s commitment to Rio principles and sustainable development agenda

Biological diversity, ecosystems and sustainable tourism. Good governance becomes a reality when the environmental legal framework is operational at full scale and the sectoral institutional setting is optimised and in place, and citizens and individuals fully participate in environmental protection. Since 1998, the Government of Mongolia has been producing “State of the Environment Reports” and submitted them to the Parliament.

SGK and Government have endorsed a wide range of intersectoral programmes within the framework of sustainable development policy, including the programmes on “New Development”, “Water”, “Climate Change”, “Combating Desertification”, “Conservation of Rare and Endangered Animal Species”. Mongolia defined the government policy on climate change in 2011 and strengthened the relevant institutional arrangement. The Government approved a national programme on climate change and its action plan, and issued a decision to implement climate change adaption actions in large territories of specific river basins.

In 2010, the Law on Air was amended and the Law on Air Pollution Fees was adopted to establish a “Clean Air Fund”. For the purpose of increased economic

⁵ Government Action Programme, 3.5. Priority Area 5.

⁶ Government Action Programme, Six.Environmental Policy

⁷ Government Action Programme, 5.2.1.5 Tourism Development Policy

values of environmental resources, guidelines for “amending the law on hunting” and “amending the law on fees for utilization of natural plant and vegetation” have been approved and “Ecological and economic assessment of wild animals”, “Ecological and economic assessment of water resources” and “Ecological and economic assessment of plant species” have been updated.

A gap analysis was carried out for 33 existing environmental laws that resulted in removing gaps, duplications and shortcomings in 18 laws merged into 8 laws and drafting of 2 new laws. These laws were adopted by the Mongolian Parliament in May 2012, marking a milestone in policy reform. Key aspects of this reform were the integration of concepts of “environmental auditing”, “polluter pays principle”, “involvement of local communities in environmental protection”, “increasing economic values of natural resources and capitals”, “creation of sustainable sources for environmental protection measures” and the “promotion of sustainable natural resource management”⁸.

Within the framework of environmental policy update, the strategic goal is set forth as below:

- Neutralization and halt of the environmental pollution and degradation, improvement of the life quality of population; prevention from water depletion, sustainable use of water resources and creation of water reserves;
- Introduction of sustainable land management principles;
- Promotion of sustainable forest management to ensure conservation, proper use and rehabilitation of forest and forest resources;
- Biodiversity conservation, its sustainable use and rehabilitation and prevention from biodiversity depletion;
- Reducing risks and impacts of climate change and desertification;
- Creating enabling environment for “green economy”⁹.

Efforts are being taken to use the results of ecological and economic assessment of water resources, setting of fees for water utilization and pollution and introduction of ecological tax which intend to curtail the consumption of goods and products that cause negative impacts on environment. Protection of rivers headwaters is cost-efficient and effective mean to prevent depletion of water resources. The efforts are also progressing to regulate water run offs, build increasing number of water reservoirs on large rivers, establish a large number of water dams and pools in semi-arid and arid regions, raise economic value and pricing of water resources and introduce water conservation techniques and technologies in all sectors.

The sectoral ministries are holistically addressing setting clear boundaries of natural, historical and ecological heritage sites wherein mining activities

⁸ L.Gansukh, Pressing issues in sustainable development and environment: challenges, opportunities and solutions. Presentation at national consultative session of environmental officers, Government House, 2012.01.15

⁹ Ts.Banzragch, Environment and sustainable development issues, Presentation at national consultative session of environmental officers, Government House, 2012.01.15

are prohibited by law and other legal acts. The mineral exploration and mining activities are also prohibited in river headwaters and forest reserves by a new Law enacted since 2009.

The potential solutions to address the pressing issues in the forest sector are establishment of effective system for prevention of forest fires, increased investment for necessary actions, building capacities to immediately extinguish fires and developing and implementing a plan for forest protection and reforestation.

A set of step wise actions guided by holistic policies is in place, such as establishment of water treatment facilities which meets technology requirements in aimag centres and industrialized zones, building capacities for sorting out and recycling of solid wastes, limiting the use of raw coal for household heating in the capital city, implementation of a programme for use of clean fuel and improved heating stoves, full extent of transition to gas and electrical fuel transportation means in towns, introduction of the polluter pays principle, heightening social responsibilities of production and service sectors and promotion of clean development principles.

Sustainable energy. Mongolia's Agenda 21 sets forth 13 targets with 65 actions in the fuel and energy sector growth, whereas MDG based CNDS proclaims 8 strategies and 24 targets from 2008 to 2016.

The reliable provision of electricity is a fundamental condition for today's people to enjoy comfortable and sustainable living. Therefore, it is a priority to promote the energy sector development. On the other hand, efficiency in combustion of coal should be ensured to make the production effective and environmentally sound and to minimize adverse impacts on environment. In the meantime, for the purpose of promoting renewable energy sources, a mechanism for facilitation of investment is regulated by Law on renewable energy. The Law was put into force in 2007. SGK approved a national programme for renewable energy (NPRE) in 2005 and updated programme for integrated energy system in 2007. As stated in the NPRE, 3.0-5.0 percent of the total energy production will account to renewable energy sources in 2010 and the figures will rise up to 20.0 – 25.0 percent in 2020. In addition, hydro power station is vital for the integrated energy system. However, Egiin River, Shuren and Selenge hydropower station projects were postponed through several Governments due to lack of financial resources. New wind farms are under development in the central and southern regions.

Infrastructure and urban development. The “General Plan for Mongolia's Population Settlement” was drafted in 1996, however, the plan was not fully approved. The subplans for the major goals of a master plan have been approved, such as Mongolia's regional development concept (2001), Millennium Road and Vertical Axis of Infrastructure (2001), Western Regional Centres (2003) and Mongolia's Medium-Term Regional Development Strategy up to 2010 (2003).

The approvals of Law on legal status of towns and villages in 1993, the Law on urban development in 1998 and the Law on Management of Mongolia's Regional Development in 2003, have been important measures to facilitate the planned development of rural settlements that are pillars of Mongolia's development and to legalize local self-governing principles. Between 1992 and 2012, a major steps were made in reforming the legal environment, a number of milestone legal acts in the infrastructure were endorsed during the period such as "Urban Development", "Construction", "Housing", "Land", "Land Use Fees", "Cadastral Cartography and Land Cadastre", "Geodesy and Cartography", "Auto Road", "Auto Transportation", "Railroad Transportation" and "Civic Aviation". To date, rules and standards are being updated to comply with international standards. At the same time, measures are being taken to remove duplications and gaps in legal acts and enhance legal enforcement and eradicate negative impacts on environment which might be caused by rapid social and economic growth.

The Mongolian Parliament approved the strategies to expand economically-driven road and transportation networks and services, improve efficiencies in policy implementation for urban development, land relations and urban services and create conditions for safe and comfortable lives for population. The strategies are listed as below:

- Mongolia's regional development strategy (2001);
- Regional centres (2003);
- Medium term regional development strategy of Mongolia (2010);
- Master plan for development of construction materials production" (2007);
- "Master plan for construction sector development between 2001-2010" (2001);
- "The state policy on railroad" (2010)
- Millennium road and vertical axis of infrastructure (2001);
- National basic axis of infrastructure " (2001);
- "Master plan for national land management" (2003).

Sustainable agriculture. While Mongolia has been experiencing an economic revival and intensive mining sector development, the agricultural sector tends to lag behind. As shown in Graph 2.1.1, the decline in the agriculture sector production has been influenced by natural disasters and price inflation evolving from financial crisis.

Mongolia's GDP grew 3.8 times between 2001 and 2010, during which the agricultural production grew 2.4 times. The GDP share of agriculture production is reduced from 29.1 percent in 2000 to 15.9 percent in 2010. By 2010 the livestock sector produced 80.2 percent of the total agriculture outputs. Out of the total animal population census by the end of 2011, the horse population reached 2112.9 thousand, cattle 2339.7 thousand, camels 280.1 thousand, sheeps 15668.5 thousand and goats 15934.6 thousand.

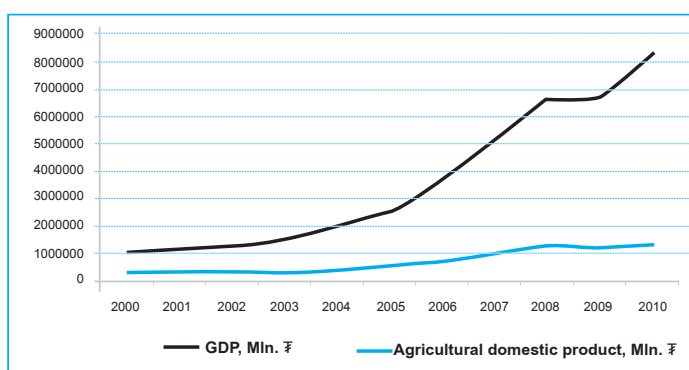


Figure 2.1.1. Growth in GDP and total agriculture production in Mongolia

The total heads of domestic livestock increased by 40.0 percent, including tripled population of goats. A number of sheep remained basically unchanged and heads of camel decreased by 48.0 percent, the horse by 7.0 percent and cattle by 18.0 percent. The change in herd structure was instigated by market opportunities.

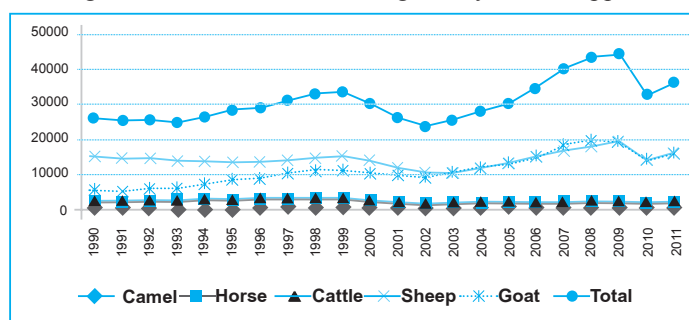


Figure 2.1.2. Increase in livestock, Mongolia (million heads)

The relations in food and agriculture sectors in Mongolia are being regulated by the laws on “Food”, “Land”, “Water”, “Safeguarding animal gene fund and health”, “Placing embargos on transboundary transportation of animal and plant products”, “Crop farming”, and “Hygiene”.

The state food and agriculture policies define the guidelines as follows¹⁰:

1. The Food and agriculture policy shall be based on the principles of promoting the production through proper use of environment, economic, financial and human resources. The provision of safe products and raw materials that meet food and production demands will be ensured through increased efficiency, quality and competitiveness of products and through ensured sustainable development of animal husbandry, crop farming and food production sector.

¹⁰ Reference book for agriculture workers (summary of legal documents and acts) Ulaanbaatar, 2004. Page 226

2. The main model of agriculture development in Mongolia is a combined intensified livestock husbandry and crop farming which rely on self sufficient legal entities and enterprises of various types of ownership and adjusted to natural conditions and climate change impacts. The farming must be adapted to climate change impacts, reliable and efficient and combined pastoral and intensified animal and crop farming practices.
3. Assistance will be provided to promotion of food and agriculture sector production through ecologically clean, low risk and environmentally friendly technologies.
4. Favourable business environment will be created and production capacity will be increasing.

With special attention, the government has been taking effective measures to promote intensive animal husbandry in order to meet urban population demands for safe food. As a result, the number of intensified farms has increased 1.8 – 9.0 times over the five years. The animal population of such farms increased as much as 4.5 – 5.6 times (Table 2.1.1).

Table 2.1.1. Intensified and semi-intensified farms and livestock

Types of intensified farms	Number of farms			Heads of animal		
	2005	2010	2010/2005%	2005	2010	2010/2005%
Diary	186	649	349	4,343	21,412	493
Pig	21	190	904	2,670	15,064	564
Poultry	38	148	389	88,068	397,468	451
Sheep and cattle feedlots	127	229	180	-	-	-

During the period of 2008-2011, the Government of Mongolia implemented Crop Campaign-III to ensure domestic self-sufficiency in wheat, potatoes and other major vegetable types. The following goals and objectives were set forth in the framework of the programme¹¹:

- Create favourable legal and economic environments for crop farming;
- Improve human resource capacities through upgrading knowledge and skills of crop farmers, training and re-training of qualified experts;
- Increase the farmed crop plans through reusing abandoned lands;
- Improve the quality and provision of seeds for major crops;
- Introduce advanced techniques and technologies to advance intensification of crop farming.

Having implemented Crop Campaign –III, the grain harvest was doubled in 2011, compared to 2008. The potato harvest grew also by 1.7 times, other vegetable type production by 1.3 times and livestock fodder and technical plant seeds by 1.7-1.9 times (Figure 2.1.3).

¹¹ Reference book for agriculture workers (summary of legal documents and acts) Ulaanbaatar, 2004, Page 226

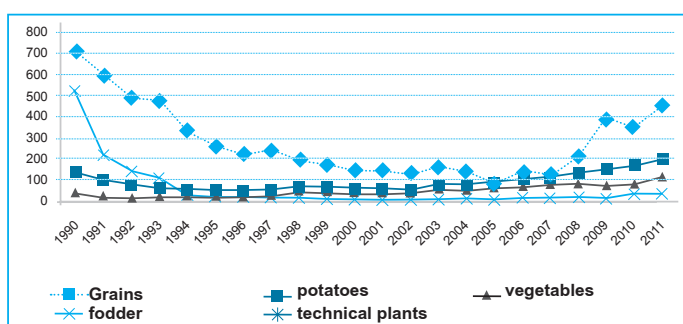


Figure 2.1.3. Increase in crop production (thousand tonnes)

Through the implementation of Crop Campaign-III, environmentally friendly zero tillage technology has been introduced to preserve the soil fertility. Meanwhile, highly productive planting and harvesting machinery and equipments have been introduced to complete harvesting within 30 – 35 days and to reduce wastes from harvesting. For the purpose of minimizing crop farming risks, funds were allocated from the state for renovation and new installation of irrigation schemes and green houses.

In 2010, irrigated crop farming accounted for 11.8 percent of the total croplands, among which 71.5% was accounted for planting potato¹². Irrigation schemes are being continuously rehabilitated and as a result, irrigated crop lands expanded up to 42.0 thousand hectares in 2011 (Figure 2.1.4).

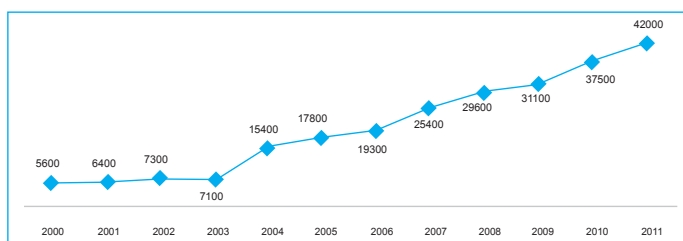


Figure 2.1.4. Increase in irrigated farm lands (thousand ha)

In 2008, Mongolia domestically supplied 27.6 percent of the total flour demands and 43.7 percent of potatoes and vegetables. In 2011, the country became fully self sufficient (100 percent) in meat, wheat and potato production and met 62 percent of the need for other vegetables.

¹² Webpage run by MoFALI. Irrigated crop farming. <http://www.pmis.gov.mn/> (2012.01.30)

Table 2.1.2. Calorie, nutritional requirements and supply for average person ¹³

	Daily requirements ¹⁴	National average		Urban		Rural	
		2010	Proportion of supply	2010	Proportion of supply	2010	Proportion of supply
calories, kcal	2500	2 798.3	111.9	2 603.6	104.1	3 040.7	121.6
protein, gr	94	105.4	112.1	90.1	95.9	124.4	132.3
fat, gr	69	90.6	131.3	77.9	112.9	106.4	154.2
Carbohydrate, gr	375	371.5	99.1	368.1	98.2	375.8	100.2

According to Table 2.1.2, the rural population's daily carbohydrate intake meets the norm and the desirable daily norms of protein. Required fat and calorie levels are exceeded by 32.3 percent, 54.2 percent, respectively. For urban population, the daily calorie norms are met while the daily intake of protein and carbohydrate fall short by 4.1 percent and 1.8 percent respectively, compared to the set norms.

Table 2.1.3. Daily food requirements and supply¹⁵

	Monthly requirement ¹⁶	National average		Urban		Rural	
		2010	Proportion of supplies	2010	Proportion of supplies	2010	Proportion of supplies
	6	8.4	140.0	6.6	110.0	10.6	176.7
Milk/diary	10.5	10.8	102.9	6.8	64.8	16.1	153.3
Flour	9.6	10.7	111.5	10.5	109.4	10.9	113.5
Rice	5	1.7	34.0	1.7	34.0	1.8	36.0
Sugar	0.7	1.4	200.0	1.4	200.0	1.3	185.7
Eggs, pieces	11	2.7	24.5	4.1	37.3	0.8	7.3
Potatoes	4.2	3.3	78.6	4	95.2	2.4	57.1
Vegetables	6	1.8	30.0	2.3	38.3	1.1	18.3
Fruit and berries	5.4	0.7	13.0	0.7	13.0	0.6	11.1
Vegetable and fat oil	0.8	0.5	62.5	0.5	62.5	0.5	62.5

When the basic food commodities of monthly consumption of average person on a national scale are counted vis a vis the due norms, (Table 2.1.3) the estimated intakes of meat, sugar, eggs, vegetables, fruits, plant and fat oil are higher by 40.0, 100, 24.5, 30.0, 13.0 and 62.5 percentages respectively. At the same time, dairy supply was estimated at 64.8 percent for urban population and potato supply counted at 57.1 percent. The data reveals the need for in-depth analysis for the purpose of increasing food production and improving food supplies and identifying consumption patterns by regions, aimags and soums.

¹³ Mongolian Statistical Yearbook 2010, Ulaanbaatar 2011. Table 19.6

¹⁴ Appendix One to Resolution 257 by Health Minister dated in 2008

¹⁵ Mongolian Statistical Yearbook, Ulaanbaatar 2011. Table 19.5

¹⁶ Annex 1 to Health Minister's Decree 257, dated in 2008

2.2. Key findings of consultations on sustainable development

Biological diversity, ecosystems and sustainable tourism. A second meeting of the signatories of the memorandum of understanding between the Secretariat of the Convention on Migratory Species and WWF in Mongolia concerning conservation, restoration and sustainable use of saiga was organized. During the meeting held in September, 2010 Mongolia joined the signatories of the memorandum of understanding.

The Ministry of Nature, Environment and Tourism (MNET) in cooperation with UNEP organized an second international consultative meeting “Private sector cooperation for reduced use of ozone depleting substances” in June 15-17, 2011 in Ulaanbaatar at which the participants endorsed “Ulaanbaatar Declaration -2”. Within the framework of building trust and cooperation in member countries of Asia, expert meeting on desertification was held in September 6-7, 2011 in Ulaanbaatar.

Sustainable energy. A first international forum “Mongolian Energy-2011: Investment-Technology” was held to introduce Mongolia’s energy sector policy and promote cooperation attracting foreign and domestic investments. The forum was held in three parallel sessions: “Investment and international cooperation in Mongolian energy sector”, “Innovation in energy production technology”, and “Private Sector Participation”. Recently, a second national forum was organized in May, 2012 in Ulaanbaatar to discuss and exchange ideas on clean energy.

Infrastructure and urban development. In April, 2009, “Development and investment forum: Mongolia -2009” was jointly organized by the Ministry of Roads, Transportation, Construction and Urban Development, Foreign Investment Agency and the Governor’s Office of the Capital City of Mongolia. The forum was attended by 464 delegates including 118 international and 346 national experts, businessmen and manufacturers. The forum focused on three sectors: construction, urban development and infrastructure.

42nd EAROPH Executive Committee Meeting and regional session “Affordable Housing –From Nomadic Life to City Life” was convened in September 2009 in Ulaanbaatar. The meeting was attended by 130 international and national delegates. 6th Regional Session “Environmentally Friendly and Sustainable Transport” was hosted by India in December 2011 at which the representatives from the MRTUD presented policies and measures on sustainable transportation in Mongolia.

Since 1993 UNESCAP jointly with its partner organizations has been organizing the dialogues of cities in the Asia and Pacific Region in every 4-5 years with the purpose of exchanging views on pressing urban issues. On June 22, 2011, a session “Enabling Cities: Partnership for Equitable Access and Sustainable Future” was held focusing on the following issues:

- City's sustainable transport and funding;
- Green infrastructure and construction;
- Urban planning;
- Round table discussion of city mayors;
- Prevention from price inflation for housing and housing information system;
- Sustainable cities' and resilience to climate change;
- Women's roles and positions in cities;
- New approaches in advanced solid waste management in Asia.

The session was essential to create opportunities for cities in the region to share experiences and learn from each other and work in cooperation to address and resolve the pressing issues of sustainable development.

Sustainable agriculture. International summit on “Investment in agriculture sector” was organized in September 2009, in Ulaanbaatar in order to raise funds and increase investment for implementation of National Programme for Food Security. The summit meeting jointly organized by MoFALI, FAO and other donors, led to implementation of projects with budgets of 15.7 million USD and 1.2 million euro.

2.3. Participation of key population groups

President of Mongolia initiated establishment of a citizen hall in the Government building in May, 2009. Since then the hall has been enabling public debates on draft laws and pressing social issues, in order to increase citizen participation in making decisions.

Biological diversity, ecosystems and sustainable tourism. Environmental protection law approved in 2005 legalizes rights and duties of citizen partnerships, professional organizations and NGOs to participate in environmental protection measures. By 2008, there were 300 partnerships and communities with 4000 households and 9000 members engaged in environment protection. In 2011, the number of environmental NGOs reached 500 and the number of people engaged in environmental conservation estimated at 13,000. By 2010, forest partnerships possessed 1,342.6 thousand ha of forest while the number increased to 631 and 1,843.7 thousand ha by the end of 2011. In addition, 59 enterprises and organizations manage 311.6 thousand ha of forest in territories of 8 aimags by 2011. Many development assistance projects are making positive outcomes in promotion of community participation in environment protection. One of such projects is “Altai Sayan” project implemented jointly with international organizations (Box 2.3.1).

Box 2.3.1: Community based conservation of biological diversity in the mountain landscapes of Mongolia's Altai Sayan Eco-Region

The Altai Sayan project aimed to form a legal basis which facilitates the participation of local communities in the proper use of natural resources and conservation and promote community based natural resource management. The project was implemented between 2005-2011 and made substantial impact on reducing the depletion and degradation of natural resources. The project supported the establishment of over 80 community managed areas which involve a total of 3,000 individuals from 20 soums in four western aimags. These partnerships have established contracts with local government administrations on conservation of forests, pastures and wildlife in 513,500 ha of lands. The project provided more than 700 training events. Consultation and discussion meetings involved more than 13,000 people. Thus, it managed to introduce and nurture co-management approach at all levels within the project target areas in 4 provinces in Mongolia and make a positive change in people's attitude and behavior.

Scientists, experts, veterans, youth, women, NGOs and international organizations were involved in working groups for drafting major policy documents including the "Mongolian national forest policy", "The 2012 Environmental law reform package", "Mongolian national programme for biodiversity", "Action programme for forestry sector innovation and employment and social issues of village populations", "National forest programme", "National water programme", "National action programme on climate change" and "National action programme for combating desertification". The draft programmes have been presented at national and local seminars and consultations to receive feedbacks from key population groups.

During the last decade, a number community based natural resources management and conservation groups and partnerships has been increasing under the GEF Small Grants Programme in the soums of Tuv, Hentii and Selenge aimags. Community participation approach became an impetus to place environmental issues at the center of human security policy, to heighten the role and commitment of local self-governing organizations, people and enterprises engaged in utilization, protection and conservation and rehabilitation of land and land resources. The approach has also led to creation of legal environment for integrated environmental and social development on the basis of views of local communities. All in all, this has paved a road to full extent of community participation in reduction of desertification, land degradation, biodiversity depletion and climate change impacts. Within the framework of combating desertification, certain number of projects has been financially supported by the government budgets since 2008. A total of 45 projects in 2008, 25 projects in 2009, 33 projects in 2010 and 24 projects in 2011 received funding from the state budget.¹⁷

As a result of capacity building measures in professional forest and water services in local areas, 23 soum and inter soum forest units and 620 forest

¹⁷ 2008, 2009, 2010, 2011 Action report by MNET

partnerships have been established. A decision has been issued to establish a government company with duties of water resource management and operation and maintenance services of hydraulic construction. The preparatory stage for implementation of the decision is being completed.

Approximately 30 enterprises and organizations manage 100 thousand hectares of forest land on contractual basis in Selenge, Tuv and Darhan-uul aimags. Forest partnerships and enterprises are taking effective measures to halt illegal logging and prevent forest fires in their territories. To date, more than 100 enterprises and organizations are licensed by the specialized forest agency nationwide.

Tree planting campaign was called and 499 enterprises and organizations and 70 thousand people joined the campaign to have planted 1,194.4 thousand trees in 2009. The President of Mongolia issued a decree to establish and mark a National Day for Tree Planting in 2010 and as a result, 7,637 enterprises and organizations and more than 220 thousand people marked the day by planting 1,744.6 thousand trees and bushes. In 2012, 7,827 enterprises and organizations and 253,302 people planted 1.206.536 trees (Table 2.3.1). Local environmental officers' consultation was organized in all aimags and capital city to discuss pressing environmental issues and agree on solutions. Following the consultations, a plan has been developed to implement the decision made by the consultations.

Table 2.3.1 Result of the national tree planting day

	2009	2010	2011
Planted trees and bush, thousand pieces	1194,3	1754,0	1545,2
Number of organizations and enterprises	3812	7689	4669
Number of citizens, th people	70	220	160
Tree planted ha	950	1600	1265,2

A national forum “Sustainable development and environmental governance” held on January 14 – 15, 2012 in Ulaanbaatar was an important event to hear from the public. The forum had three sessions on “Sustainable development and mining”, “Sustainable development and environment” and “Sustainable development and climate change”. Another important event was a consultation “Implementation Status of Agenda 21 for sustainable education in local areas jointly organized by MNET and UNDP on February 16, 2012. The consultation was attended by public servants, researchers and officers of MNET, all of whom are engaged in sustainable development issues. Mongolia has been taking efforts to ensure public participation in assessment of sustainable development agenda and programme implementation (Box 2.3.2).

More than 760 representatives from parliament, ministries, academic institutes and civic society at national, aimag and soum levels came together at the forum to

discuss environmental issues from all aspects and determining further actions. As stated earlier, the participation of key population groups in environment protection and conservation is being improved. However, a legal environment and state policy are not providing for incentivizing the communities for their participation and holding citizens responsible for their negative environmental impacts.

Box 2.3.2: Consultation on implementation of sustainable development agenda in Mongolia

It has become regular in Mongolia to involve the public in assessment of the implementation of Agenda 21 for sustainable development. With UNDP support, the first major assessment after the commitment to Rio + 10 was held in June-July 2006. About 60 representatives of urban and rural NGOs, local administration and ministries came together to assess the implementation. Since then, another inclusive consultation Rio+20 was organized on January 16, 2012 within the framework of national forum "Sustainable Development and Environmental Governance". The consultation was attended by environmental officers from 18 aimags. To respond to the comments made that consultation, a second consultation "Launch of Global Human Development Report" and "Mongolia's Inputs to Rio+20" was convened on February 16, 2012 involving people who work locally on sustainable development, in addition the aimag environmental officers.

During the consultation the participants stated that environmental officers take the responsibility for implementation of Agenda 21, but in some aimags (Uvurhangai and Uvs) officers in charge of economic development and investment report on the implementation. They criticized that the reporting process does not reflect the comments from other divisions and organizations and the general public. The earlier practice of discussion between sustainable development officers and aimag administration is discontinued. The Aimag social, economic and environmental councils faced the same destiny to be forgotten during the several tenureships of governors.

Sustainable energy. As a result of drafting and implementing sustainable development programmes by all aimags, many soum centres are now linked to central electricity grid. Over 90% of all soums have access to central electricity grid. In addition, 70.0 – 90.0 percent of total herder households consume solar and wind power. National Programme "One Hundred Thousand Solar Light" has made a crucial contribution to access renewable energy source by herder households.

Infrastructure and urban development. In 2008, the State Great Khural issued a decision to draft a long term urban development plan with public involvement. The law spells out to "mainstream the principles of involving the citizens in urban development planning", "to oblige town and village mayors to integrate comments from citizens and experts during the urban development planning" and "to assign central administration in charge of urban development, citizen's representative meetings in aimags and capital city and city mayor's office to timely inform the public on decisions made within the framework of the law"¹⁸.

The capital city mayor's office in cooperation with World Bank, donor countries, domestic banking and financial institutes and private sector has been periodically

¹⁸ The same

holding “Partner Consultative Meeting” to support public involvement since 2010. Projects and programmes are in place to get public voice heard and build the capacity. Projects “Urban service improvement in Ulaanbaatar”, “Sustainable livelihood” and “Community based development and upgrading of ger districts in Ulaanbaatar” have been organizing trainings for community members to resolve the issues for improving living conditions in cooperation with local decision makers. Within the framework of “Community based development and upgrading of ger districts” a total of 35,000 community members have been trained in community empowerment while over 200 local decision makers attended the step wise training on “Inclusive planning”. Three NGOs have been established in the cities to empower communities.

MRTCUD runs a webpage to inform the decisions within the sector and receive the feedbacks from the public. As well, consultative meeting of administration in all sectors of infrastructure is annually held and professional urban development and construction councils and associations have been set up to introduce advanced technology and update norms and standards in inclusive manner.

Sustainable agriculture. The participation of agricultural workers, scientists and civil society in drafting and implementation of food and agriculture sector policy is ensured in the following manner:

1. Sector wise management consultation is annually held while specialized thematic consultations are organized on adhoc basis. The consultations involve professional associations, research institutes, training organizations, local professional organizations and civic society to discuss and receive feedbacks on sector wise policy and challenges. The proposals of these consultations are integrated in sector policies. A total of 22 consultations were organized with attendance of 7,300 representatives.
2. During the herding and cropping specific periods, professional teams are sent to local areas to meet with herders and crop farmers to receive their views on crop faming and harvesting and winter preparation and reflect them in policy making. For instance, during the event organized by MoFALI in Hovd aimag in August 2009, a total of 600 international and domestic guests represented by herders, crop farmers and entrepreneurs from 27 soums in 6 aimags attended the event. The statistics shows that as many as 15,500 people in cumulative number visited the exhibition which was organized during the event. Exhibition helps farmers to display and sell their products, so such events help to alleviate rural poverty. In 2011, more than 16,000 herders in 84 soums of 21 aimags gave their feedback and comments on draft policy documents “State Policy on herders”, “Mongol livestock programme” and “Law on Pastureland”.
3. A number of trade fairs “Diary products” (Jan-Feb), “Made in Mongolia” (March), “Small and medium enterprises” (May-June), “Breeding livestock

trade fair” (June) and “Green days of autumn” (September) are annually organized to link producers and consumers, raise awareness on market demand and needs and identify and award the best products.

2.4. Major interventions

Biodiversity, ecosystems and tourism. A regular practice has been introduced to set concrete targets every year within the framework of various programmes that address the environmental and tourism related issues. The year 2008 was announced as a year for strengthening environmental civil society organizations. The subsequent years focused on concrete themes (2009 for building capacities of environmental officers, 2010 for improved forest management, 2011 for improved water management and 2012 for fighting against air and environment pollution). Such efforts coupled with promotion of public access to state services are yielding the positive results, improved implementation and outputs of the sustainable development agenda.

The below sections present findings of the assessment of implementation of Mongolia’s Agenda 21 for sustainable development over the recent years.

A. The investment and state budget allocated for environmental conservation increased.

In 2008, the investment into environmental sector was estimated at 1,585 million tugrik, whereas this number increased to 24,967,3 million tugriks in 2011, of which 790 million tugriks were spent on capital repair and 6,105 million tugriks were used to purchase equipments. As much as 900 million tugriks, 4,992.3 million tugriks and 110.6 million tugriks were spent to activities on combating desertification, reforestation and establishing green belt programmes in 16 aimags respectively. 1,047.3 million tugriks, the largest ever amount was allocated to conducting research and establishing the database on changes in natural resources and environmental state and 600,0 million tugriks were spent for the sustainable tourism sector.

Nevertheless, the funds are still insufficient for extensive environmental conservation measures, rehabilitation and abatement of pollution and degradation. The planned measures within the sustainable development agenda on economic incentive mechanism are not inadequately implemented. More specifically, establishment of environmental insurance system, setting up funding sources for environmental rehabilitation and removal of consequences of natural disasters, regionally distinguishable tax and payment systems for resource utilization are not progressing. The visible progresses in implementation of targets in the agenda was not made in upgrading national valuation system with ecological and social dimensions, application of comprehensive systems of ecological and economic assessment for making sustainable development related decisions, and establishing

a system whereby the extent of environmental degradation and resource depletion is accounted to the estimation of economic growth trend.

B. Comprehensive policies for biodiversity conservation developed and economic values increased.

The government has adopted policy to halt the depletion of rare and endangered species of animals, set out the enabling condition for their natural reproduction, protect the herd structure, increase the population and enlarge their habitat. It approved “National Programme for Conservation of Rare and Endangered Species of Animals” and updated several legal acts such as regulations, on “Allocating permits for hunting rare species of animals”, “Importing Animal and Plant species and Raw Materials Derived thereof”, “Hunting Management” and “Catching, transportation and export of live falcons from the territory of Mongolia”. In support of joint studies by International Bear Research Center and Biological Institute of Academy of Sciences of Mongolia, trap cameras have been installed in Sharhulstai and Baruuntoroi oasis and inventories have been commissioned for animal population to record the movement paths and locations of the animals and to support the conservation efforts.

According to the report of environmental state in Mongolia¹⁹ the populations of deer, wild sheep, saigas and gazelles have risen and wild horses were re-introduced back into their homelands. Furthermore, biological diversities have been protected through enlarging the territories of specially protected places and known Tuijin Nars forest has been fully recovered.

2009-2010 study on biological resources of hoofed animals in steppe, forest and mountain regions, estimated the population of musk deer at 7.4 thousand, moose at 7,8 thousand, saigas at 8 thousand, wild sheep at 17,9 thousand, wild goats at 24,4 thousand, deer at 16,8 thousand, black tailed antelope at 12 thousand, wild pigs at 38 thousand, antelopes at 32 thousand and gazelle at 5,7 million²⁰. Reintroduction of wild horses commenced in 1992 and wild horse population increased up to 400 in three sites (Khustain Nuruu, Takhiin Tal and Khomyn Tal) by 2010²¹. The efforts are being made to expand international cooperation in protecting habitat for wild camels, increasing its population and conserving the genes.

Additinoal measures were taken by Ministry of Nature, Environment and Tourism (MNET), such as banning the marmot hunting, commercial logging of birch trees and commercial hunting of gazelles, are resulting in ecological benefits. However, pouching and illegal logging of forests, wildlife and high-value plants continue to accelerate depletion of biodiversities.

¹⁹ 2004-2005, 2006-2007 and 2008- 2010 Reports of Environmental State in Mongolia

²⁰ 2008-2010 Report of Environmental State in Mongolia, page 41

²¹ 2010 Report by MNET

C. Mongolia updated its national forest policy and strategy.

The Government has formulated its “National Forest Policy” and Master Plan on Forest Management. The use of saxaul for fuel is banned in areas with saxaul forests. Nationally, a total of 37,211.5 thousand ha of land was forested and reforested between 2008 – 2011 and windbreaks were established in 1,000 ha (Table 2.4.1). Within the framework of Green Belt Programme, wind breaks were established on 367 ha in 2005, 461 ha in 2006, 300 ha in 2007, 426 ha in 2008, 271,4 ha in 2009, 253 ha in 2010 and 365 ha in 2011. The afforestation and reforestation measures generated permanent and temporary jobs for 6,798²² individuals in 2011.

Table 2.4.1 *Extent of reforestation measures*

Performance/ Year	2008	2009	2010	2011
Reforested and rehabilitated land, ha	9512	7606	9167	10926.5
Established windbreaks, ha	465	232,5	253	256

A regulation on “Purchasing and Accounting of Afforested areas into National Forest Reserve” has been issued in order to ensure the quality of forestation and reforestation efforts. In accordance with the regulation, 194.3 ha of afforested and managed areas by citizens for more than three years were purchased by the State and accounted into the national forest reserve (56 ha in 2008, 77 ha in 2009 and 61.3 ha in 2010). Hentii aimag has generated good practices in implementation of the regulation (Box 2.4.1) that can be replicated to other aimags.

Despite the above achievements, risks of forest degradation persist and the extent of forest depletion and degradation is still at an alarming rate urging for immediate attention. Latest statistics indicate that approximately 1,395,661 ha forest areas was affected by fire and 950,000 ha was damaged by harmful insects.

²² 2010 and 2011 Action Reports by Forest Department

Box 2.4.1 Experiences of Forest Partnerships in Hentii Aimag, Eastern Mongolia

An Intermunicipal forest unit has been established to help forest user groups in 4 municipalities with technical and management assistance of the FAO Project on community forest management. In order to promote activities among its members, the association of forest partnerships has been periodically selecting and awarding the best cooperatives with the largest reforested areas, highest number of protected natural springs and earned profits, best complied with the clear forest programme and protected forests from harmful insects and fires. At the same time, many other actions are taken such as establishment of production and service cooperatives among the partnerships to share experiences with other aimags. Mr. D.Reeb, the Senior Technical Advisor emphasized that there was no sufficient capacity of the government for forest management at the project start. Experiences in other countries suggest usually 30 years are needed for building capacities.

The project supported establishment of 124 environmental partnerships in Hentii aimag in 2011. In addition, WWF implemented a poverty alleviation project through natural resource management in six soums in Onon river basin. The activities of the above projects are well coordinated.

Previously, the projects were limited to protecting trees, whereas currently, the focus is on introduction of internationally recognised practices for forest management. According to the new management, forests are protected through improved livelihoods, jobs and income generation and increased benefits from forests. The project has demonstrated that local communities and herders can benefit from sustainable forest management and created awareness and changed behavior towards forest resources.

D. Long-term water policy formulated.

Based on the national security concept and comprehensive national development strategy, the Government of Mongolia approved a national water programme with 18 targets. Tuul Reservoir Complex, Orhon-Govi, Taishir Altai and Tuul-Selbe development projects were initiated to regulate river run-offs and ground water withdrawal. Within the framework of national water programme for 2009-2021, establishment of underground water analysis and monitoring network is planned within the large river basins in 88 soums of 20 aimags and capital city. Surface water inventories reported existence of 6,646 rivers and streams, 3,613 lakes and ponds, 10,557 springs and 265 spas²³. The forested land boundaries have been set with 36,036 points identified in 6 districts of Ulaanbaatar and 2,049,306 points in 212 soums of 19 aimags. The protection zones covering 89,049.49 sq.km of water shed areas in 314 soums of 21 aimags have been delineated within which mining activities are banned. The government made a decision to revoke 236 licenses in river headwaters and water sources within forest areas.

Meeting water demands for increasing production and growing population is becoming a tremendous challenge in Mongolia. The 2011 surface water inventories indicate 551 rivers, 483 lakes and 1587 springs have dried out. Most of the dried water resources are found in forest steppes and steppe regions. Aridness is moving northwards and areas vulnerable to desertification are expanding rapidly.

²³ Water Authority, Water Enumeration Data, Ulaanbaatar, 2011

E. Specially protected areas account for 16 percent of the territory

The network of specially protected areas represents 16.4 percent (26 million ha) of the total land territory of Mongolia. By 2011, the territory under specially protected areas has expanded 4.6 times from that of 1990 (Table 2.4.2.).

Table 2.4.2. Size of specially protected areas

	1990	2000	2005	2011	2015
SPA percentage	3,6	13,1	13,3	16,4	30

Expansion of specially protected areas and improved management are internationally accepted means to curve depletion of biological diversity. The national policy on specially protected areas is framed by a number of international policy documents. The main concepts state that nature is a foundation for sustainable development, as adopted at 2002 Johannesburg Summit on Sustainable Development. Recommendations of the Madrid Action Plan for Biosphere Reserves promote applying the natural reserves for training, research and advocacy works for local and regional sustainable development. This recommendation was put forward by World Congress for Reserves and Protected Areas III held in February 2008, Furthermore, the national policy on specially protected areas is defined on the basis of the 2011-2010 Strategic Plan on Biodiversity which was approved by the meeting of the conference of the parties (COP 10) in 2010 in Nagoya, Japan. The target is to protect 17 percent of drylands, 10 percent of oceans, deltas and areas with significant flora and fauna and ecosystems.

F. Government policies on climate change formulated.

Following SGK approval of a national action programme on climate change, the government endorsed an action plan to implement the programme. Five large international projects are implemented. The projects aim to support implementation of the aforementioned policies and enforcement of legislations, coping with adverse impacts of climate change, adaptation to climate change and mitigation of greenhouse gas emissions. Implementation of UNDP supported ecosystem-based adaptation project funded by the Adaptation fund for the period of 2011-2017 is successfully initiated. Mongolia was able to access the Adaptation Fund as one of the first countries in Asia jointly with UNDP.

With support of UNDP and UNEP, an assessment was conducted on impacts of climate change along various dimensions such as ecosystems, land surface, permafrost, snow cover, ice, water resources, natural disasters, pastoral herding and crop farming. The results of climate change research works starting from 1992 were compiled and presented in assessment report on climate change effect that was published in Mongolian and English languages. Mongolia's ecosystems are extremely vulnerable, therefore, global climate change is a serious challenge for

the country to tackle. Air temperature is warming at a relatively dynamic pace in Mongolia. The average annual air temperature has increased by 2 degrees of Celcius for the last 70 years. To address the challenges, the Governemnt reduced the import of ozone depleting substances. Within the last three years, the import is reduced 9.6 times at an estimated total of 2.2 tons.

Annual precipitation rate became lower than the annual averages. Climate change causes increased frequency and scope of natural disasters. Between 1996-1999, 17.2-30.2 percent of surface water dried out, which urges for immediate actions to regulate river run-off and harvest water during the periods with high rate of precipitation. Increasing water tariffs, introducing water recycling systems and increasing the funds for water protection and rehabilitation measures at the local level are equally important.

G. A legal environment formed for soil conservation and combating desertification.

The latest policy urges for applying science and technology advances in combating desertification. A national action programme (NAP) for coping with desertification has been approved and put to implementation. A first centre for monitoring desertification was established in the territory of Bulgan aimag in 2010.

The NAP puts forward a number of targets for reducing desertification and land degradation. The targets include restoration of indigenous plants and saxaul in Gobi and arid zones, technical and biological rehabilitation of abandoned lands, watershed and forest areas and post extraction rehabilitation measures by mining companies.

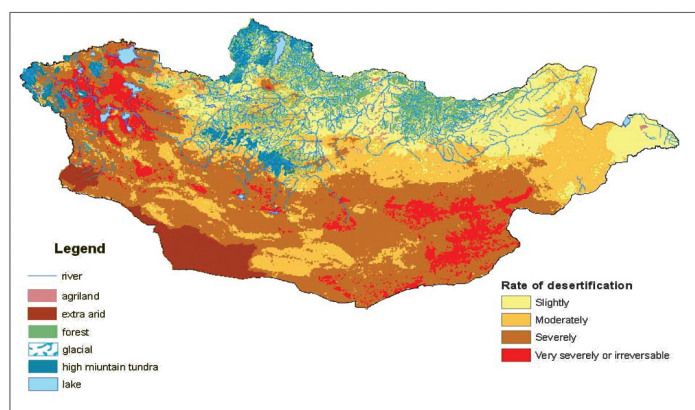


Figure 2.4.1. Desertification map of Mongolia²⁴

Over the last 16 years, the land area severely affected by desertification has expanded 11 times and very severely affected areas 7 times. Science and research

²⁴ Mongolia: Assessment report on Climate Change 2009, Ulaanbaatar, 2009, p. 64

organizations report that areas affected by desertification already account for 78.2²⁵ percent of the total territory (Figure 2.4.1). Mongolia's Agenda 21 for Sustainable Development warned that desert area would reach the edge of the Tuul river basin in case of lack of determined actions,²⁶ unfortunately still no significant steps have been made in this regard.

H. "Clean Air Fund" established for abatement of urban air pollution.

A legal environment has been formed to establish a separate fund for protecting atmosphere. With endorsement of Law on Air by SGK in 2010, the "Clean Air Fund" became operational since January 1, 2011. Measures for improvement of air quality in Ulaanbaatar are divided in three zones: a zone with limited use of raw coal, subzone and a zone for a full combustion of coal. Due actions are being taken for each zone, such as provision of improved fuel for 11 thousand households and improved fuel-saving stoves for 70-80 thousand households, expansion of green facilities of the city by 1,7 thousand ha, establishment of green zones along the valleys of Tuul, Selbe and Uliastai rivers, expansion of small parks in the city centre by 2.3 thousand ha, promoting use of gas fuel for more than 30 thousand households in ger districts, reduction of pollution from vehicles, enabling technology advance in more than 60 small and medium capacity heat only boilers and raising the public awareness on importance of reducing air pollution.

In order to enable legal environment for polluter pays principle and to promote clean environment, a total of 15 standards were revised in accordance with international standards and approved between 2009 and 2011. To reduce pollutions from vehicles, measures have been taken to transfer large public buses to combined liquefied petroleum gas and diesel engine since January 1, 2012, install filter system to 1,500 small and medium size vehicles, assemble trolleybuses and supply specialized vehicles for transporting household ashes from ger district.

The MNET announced the year of 2012 as a year for reducing air pollution and fighting with environmental degradation. It plans a number of issues such as revising the Law on waste management and Law on fee for water pollution, improvement of waste water treatment facilities and replacement of pit latrines that are major sources for soil and water pollution.

Approximately 20 climate and natural disasters occurred annually prior to 2000, whereas the number doubled after 2000. The air pollution in the capital city has reached the level of disaster, in addition to inappropriate solid waste management that further pollutes air, soil and water, thereby violates the human rights to live in a clean and healthy environment. No concrete actions are taken to expand the access to and availability of sewage water treatment facilities, improve chemical and toxic

²⁵ Biological resources of Mongolia (National Report)/ -Ulaanbaatar. 1998, pp. 17, Mandakh N. Dash D. Khaulenbek A. Present Status of Desertification in Mongolia- Geoecological Issues in Mongolia, Edited by J. Tsogtbaatar, UB., 2007, pp. 63-73.

²⁶ Mongolian action programme for the 21st century, Ulaanbaatar, 1999, p.269.

waste management and recycle industrial water.

I. Sustainable tourism becomes a priority economic sector.

The Comprehensive National Development Strategy (CNDS) states the need for a strategy to develop tourism as one of the priority economic sectors. Accordingly, the government is paying special attention to the development of tourism sector in Mongolia. The state should focus on creating enabling environment for tourism business and related investments, since tourism can play an important role in employment generation and poverty reduction. Tourism sector growth will foster and prioritize environmentally-friendly green economy. A new “National programme on Tourism” is under way, which aims for development of infrastructure, creation of favourable environment for investments, establishment of tourism complexes and adoption of optimal marketing policy.

Preparatory steps are being made to make sustainable tourism as one of the leading economic sectors. A national standard for tourism complexes has been approved in order to bring the tourism services to the international standard. Furthermore, guest houses will be established along the national roads with 180-200 km distances in between. Mongolia became a member of World Tourism Organization and was selected to represent Asia in the board meeting of the Pacific Region Fund of WTO: Pro poor tourism”.

For the last three years the number of tourists grew by 11.0 percent, accordingly revenues increased by 32.5 percent (Table 2.4.3). In 2011, 460 thousand tourists visited Mongolia, making 4.0 percent of GDP having generated 25 thousand jobs in the sector.

Table 2.4.3. Tourism sector growth (2009 – 2011)

	2009	2010	2011	Growth 2011/2009 percent
Total travellers, th persons	464.8	557.4	627,0	134,9
Tourists, th persons	411.6	456.3	457.5	111,1
Tourism industry revenues,Mln. USD	213,3	222,4	282,7	132,5

Source: report by MNET, 2011

Sustainable energy. For the purpose of reliable provision of electricity and heat supply with high-level of combustion and lower toxic gases, coal-fired power stations in Darkhan, Erdenet and Choibalsan cities were renovated. Establishment of a new complex with an annual production capacity of 2,100,000 tons of semi-coking coal was initiated to contribute to abatement of air pollution in the capital city and protection of population health. Additional efforts are needed to reduce negative environmental impacts through deep processing of coal.

Table 2.4.4. Renovated TPSs

Indicators		Measure unit	TPS-2		TPS-3		TPS-4		Darhan		Erdenet		Dornod	
			2000	2010	2000	2010	2000	2010	2000	2010	2000	2010	2000	2010
Rate of fuel consumption	Electricity	g/kWt.hr	574.3	588.4	484.1	357.3	388.9	314.2	451.9	438.0	340.8	328.7	837.2	706.3
	Heat	кг/Г.кан	184.8	193.5	196.9	177.8	184.1	175.2	168.8	197.5	180.1	180.6	226.7	196.9
Internal electricity use		%	19.56	16.07	27.8	20.76	20.11	13.84	19.06	19.18	25.38	58	32.5	19.72
Installed capacity use		%	50	72	44	56	40	60	48	61	44	104.8	16	55
Distributed by power station	Electricity	Mil kw. Hour	75.8	104.8	382.1	532.5	1525.6	2533.5	161.8	206.9	82.6	104.8	35.5	87
	Heat	Mil	144.4	163.1	1240	1801.5	2523.1	3106.5	497.9	453.0	478.9	494.1	149.4	187.1

* 2010 Energy statistical indicators by ERA were used for estimation.

From to the Table 2.4.4 it can be seen that except for TPS-2 that was not technically renovated all TPSs saved 10-20 percent of fuel. In other words, they have not only reduced production costs, also adverse impacts on environment.

Infrastructure and urban development. Table 2.4.5 illustrates achievements in road, transportation, construction and urban development sectors against the national targets of sustainable development.

Table 2.4.5. Achievement of sustainable development targets

	Social development	Environment	Economy	Implementation means	Total
Number of strategic targets on sustainable development	17	13	15	14	59
Indicators for implementation of strategic targets by 2006	9	3	-	1	13
Targets for 2012:	23	9	39	9	80
Government Actions Programme / 2008-2012/	10	5	20	5	40
Objectives and targets of MDG based CNDS	6	2	13	2	23
Socio-economic guidelines of Mongolia /2011	7	2	6	2	17

In 2006, a total of 14 activities were implemented to achieve 59 targets in the national strategy for sustainable development within the road, transport and urban development sectors. In 2012, a total of 80 actions are been implemented, of which 40 are mainstreamed in Government Action Programme 2008-2012, 23 activities in MDG based CNDS and 17 in socio-economic guidelines of Mongolia. That is to say, special attention is being paid to form a legal and economic environments for improved life quality, lower unemployment rate, adequate settlement of population, improved conditions and reduced air, soil and water pollution in urban areas, improved access to water and sanitation services and hygiene conditions (Table 2.4.6).

Table 2.4.6. *National programmes in road, transport, construction and urban development sectors (implementation by the first half of 2011)*

No	Programmes	Implementation period	Performance (%)
1	National programme "Transit Mongolia"	Phase I. 2008-2010	35.0
2	National programme for civic aviation safety	No fixed timing	88.9
3	National programme for reducing earthquake risks	Phase I: 2009-2014 Phase II: 2015-2020	60.0
4	"National water programme (integrates the programmes for provision of safe drinking water and adequate sanitation)"	Phase I:: 2010-2015 Phase II: 2016-2021	25.0
5	Subprogramme for public servants' housing	Phase I: 2008-2009 Phase II 2010-2015	91.0
6	Programme for prevention from crimes against traffic safety	Phase I: 2007-2008 Phase II 2009-2011	96.5
7	"Development of ger districts into housing blocks in Ulaanbaatar"	Phase I: 2008-2011 Phase II 2012-2015	92.5
8	"New development" medium-term targeted programme	Phase I: 2010-2012 Phase II 2013-2016	15.0%
9	Programme for simplifying air transport	No fixed timing	92.6%

- Urban development and planning;
- Improvement of access and level of infrastructure services;
- Increased supply of housing;
- Job generation and education support;
- Abatement of air pollution in Ulaanbaatar;
- Promotion of rural development;
- Industry promotion;
- Reduction of internal migration.

A legal environment is set to improve population settlement and urban planning and reduce overpopulation through internal migration. Nevertheless, there are rooms for improvement. General draft plan for population settlement is still not approved at full extent and no major actions are taken to create favourable living environment in rural areas through improved infrastructures. Large cities are overpopulated causing environmental overload.

Mongolia experienced an accelerated urbanization during the last two decades. Repeatedly hit hard by natural disasters since 2000, herders increasingly move to the capital city and other towns in search of better access to education and health services and most importantly job opportunities. The urban population grew drastically to 1,345 thousand in 2000, accounting for 57 percent of the total population. In 2010, the figures further increased to 67.9 percent or 1,798.1 thousand persons²⁷. Ulaanbaatar has highest population density, that increased from 162 people per square kilometer in 2000 to 246 in 2010 growing 1.5 times. Although Ulaanbaatar city accounts for only 0.3 percent of the total territory, it accommodates 43.6 percent of the population. The urbanization is projected to fasten up²⁸.

²⁷ 2010 Population and housing census, Ulaanbaatar, 2011

²⁸ 2010 Population and housing census, Ulaanbaatar, 2011

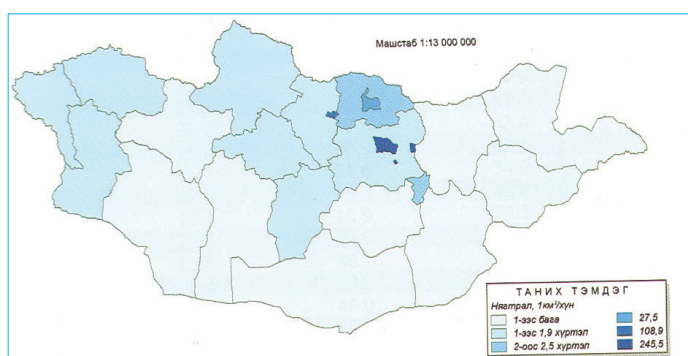


Figure 2.4.2. Population density (by 2010)

The population densities in Orhon (109 persons per sq.km) and Darhan-Uul (28 persons per sq.km) are much higher than the rest of the aimags. The population density in Mongolia was 1.5 person per sq.km in 2000. The indicator increased to 1.7²⁹ in 2010 demonstrating the net population growth nationwide (Figure 2.4.2). In addition to the aforementioned factors, external and internal migrations have contributed to the shift in the population density. The population growth in Ulaanbaatar is much higher as compared to other cities, it grew by 349.2 thousand people /51.9 percent/ for the period between the two population census. Population and Housing census estimates that 43.2 percent of the total population of Mongolia resides in Ulaanbaatar city.

It is important to put strategic mining sites in operation and plan population settlement and urban planning in accordance with these developments. The funds for milestone activities for urban planning are not reflected in the state budget 2012³⁰. Lack of funding may result in uncontrolled and unplanned settlements with no adequate living environment, and thereby strain social and infrastructure services.

Although progresses are being made in improving water supply and sanitation conditions of population, the local sustainable development agenda reveals insufficiency in improving drinking water quality in rural areas³¹. Promotion of sound use of water and introduction of environmentally-friendly water recycling technology is required, along with banning the use of drinking water for mining and industrial activities.

²⁹ 2010 Population and housing census, Ulaanbaatar, 2011

³⁰ The progress in implementation of MDG based CNDP, MRTUD 2011

³¹ Result of local sustainable development programme implementation, MNET Jan-Feb 2012.

2.5. Summary

Mongolia has made substantial progresses in reforming and updating sustainable development policies:

- Major steps were taken in updating long-term development policies and updating legal environment. The National Security Concept, Foreign Policy Concept and MDG-based Comprehensive National Development Strategy manifest Mongolia's advancements in policy and legal framework.
- Achievements were made in updating legal framework for sustainable development in economic sectors. Environmental reform updating a number of legal and policy documents was an important step in improving environmental governance. Policy documents were formulated on climate change adaptation and mitigation, water and forest conservation and combating desertification. Mongolia made progresses in providing ecologically clean products for the population and alleviating the poverty. A legal environment is created to facilitate improvement of population's settlement and reducing overpopulation through internal migration.

Major progresses were made in development of tools and means of sustainable development:

- Regular involvement of NGOs, business entities and public representatives were enabled in international and national consultations, trainings and seminars to incorporate their views in making decisions and policies. A Citizen hall initiated by the President enables citizens to participate in discussing and providing inputs to draft policy documents and express their views on pressing social issues.
- Tangible achievements were made in developing a comprehensive biodiversity policy and increasing the value of biodiversity. A long-term national forest policy and strategy have been formulated and policy on climate change has been defined. Over 16 percent of the total territory is taken under state protection and legal environment for soil conservation and prevention of desertification has been laid out.
- Despite increasing investments and state budget for conservation measures over the years, funding sources are still fall short for full implementation of policies and programmes for environmental protection, conservation and rehabilitation. It is crucial to establish environmental insurance system, set-up funding sources for environmental rehabilitation and removal of consequences of natural disasters, introduce regionally differentiated tax and fee systems for resource use and to apply these systems for balancing socio-economic development.
- Significant progresses cannot be reported in upgrading national inventory

systems through ecological and social dimensions, using the comprehensive systems of ecological and economic valuations for making decisions on sustainable development issues, and establishing a system for monitoring environmental degradation and resource depletion and incorporating them into estimation of economic growth trend.

- Overpopulation in urban areas can be addressed by improving living conditions in rural areas. At the same time, the urbanisation should take place within the carrying capacity of environment.

To conclude, Mongolia has considerably progressed in adopting sustainable development concept, forming a legal system, ensuring participation of local community and general public, improving sectoral policies and promoting international cooperation.

3

GREEN ECONOMY FOR SUSTAINABLE DEVELOPMENT AND POVERTY REDUCTION



3.1. Characteristics of the green economy

Biological diversity, ecosystems and sustainable tourism. According to the UNEP definition, “green economy is the one which results in improved human wellbeing and social equity while significantly reducing environmental risks and ecological scarcities.”³² Mongolia should take measures to pursue green economy, a globally accepted pathway towards sustainable development (Figure 3.1.1).

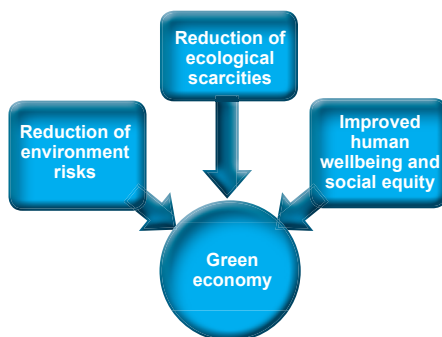


Figure 3.1.1. *Green economy gains*

The green economy is a manifestation of sustainable development.³³ Nevertheless, the concept of a “green economy” does not replace the sustainable development (Figure 3.1.2). There is a growing recognition on the fact that achieving sustainability rests on getting the economy right³⁴. In simple expressions, green economy is low carbon, resource efficient and socially inclusive development. With active participation of the Ministry of Nature, Environment and Tourism (MNET), the mass media in Mongolia organizes the green economy debates and interactive dialogues among the academia, business communities, government and non government representatives. The media coverage of the debates has been helpful to drawing the public attention to this new global development trend

Public and private investments that support reduction of carbon emissions and air pollution, improvement in efficiency in energy and resource use and conservation of biodiversity and ecosystems have effective spill over effect on generations of green incomes and jobs³⁵. An enabling condition for advancing the green economy requires addressing a set of challenges. In Mongolia, these include improvement

³² UNEP. 2010. Green Economy Developing Countries Success Stories.

³³ Prof Balganjaviin Khuldorj: Research on defining the green economy and the structures of sustainable consumption and production (Summary Report in Mongolian), 6/27/2011. Page 4

³⁴ UNEP, Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication - A Synthesis for Policy Makers, 2011, www.unep.org/greeneconomy

³⁵ Prof Balganjaviin Huldorj: Research on defining the green economy and the structures of sustainable consumption and production (Summary Report in Mongolian), 6/27/2011. Page 5.



Figure 3.1.2. Sustainable development and green economy

of technology for mining operations, rehabilitation of degraded environment in accordance with the standard under the public control and monitoring, introduction of waste free and efficient resource use, increase in production of solar, wind and hydro power, promotion of waste recycling technology for energy production and introduction of soil conservation technology in crop farming. The synergy between human development and environment is a prerequisite for addressing the challenges with long-term vision.

For pursuing the green economy path, the following targets are set forth: tourism sector development as a priority, reduction of heat loss and saving energy in the construction sector, introducing responsible mining applying environmentally sound technologies, promoting production and services which save raw material and resources and establishing a system to foster industries with low pollution and promoting consumption of ecologically clean products. The basis for green economy will be laid out once research and pilot centre of environmentally friendly and ecologically clean development technologies are established with adequate funding for scientific research works.

The government is prioritizing tourism sector development in specially protected areas which account for 16.4³⁶ percent of the total territory of Mongolia. The national consultation on ecotourism held in 2001 proposed to define the ecotourism as follows: tourism which benefits environment and local communities and generates positive impacts on environment, nomadic civilization and traditional heritages³⁷. The types of ecotourism are presented in Figure 3.1.3.

ТОГТВОРТОЙ ХӨГЖЛИЙГ ХАНГАХ,
ЯДУУРЛЫГ БУУРУУЛАХ
НОГООН ЭДИЙН ЗАСАГ

³⁶ T. Navchaa and T. Purevsuren, Ecotourism development in specially protected places (manual), Ulaanbaatar, 2012, page 6

³⁷ Booklet of Mongolian National Consultation on Ecotourism, Ulaanbaatar, 2001



Figure 3.1.3 Ecotourism types³⁸

Sustainable energy. Compared to other sectors, revenue generation in energy production takes longer. Therefore, energy sector requires more “green investment”. The ED estimates that 430 million USD investment, equivalent to 3.5% of estimated 2013 GDP is needed for establishment of a hydropower station of 300 MW³⁹. Taishir HPS, with 30 times lower capacity was built at the cost of 38.9 Mln USD. It implies that investment per unit production capacity of large HPS costs 1,430.0 USD, whereas for the small-size HPS the costs are estimated at 3,540.0 USD. This is a bottleneck in the energy production in Mongolia that causes lagging behind the social demands.

Coal remains to be the main source of energy production in Mongolia and accounts for 59 percent of the total energy production (Figure 3.1.4)⁴⁰. The level of CO₂ per 1 USD of GDP is steadily decreasing, nonetheless, Mongolia, one of ten largest coal miners in the world, still has a carbon intensive economy. In fact, Mongolia tops the list of ten largest coal mining countries by its carbon intensity⁴¹. Thus, it is extremely crucial to introduce the green economy in the energy sector in Mongolia.

³⁸ T. Navchaa and T. Purevsuren, Ecotourism development in specially protected places (manual), Ulaanbaatar, 2012, page 19.

³⁹ The estimate based on Research on defining the green economy and the structures of sustainable consumption and production (Summary Report in Mongolian) by Prof Balganjaviin Huldorj

⁴⁰ National Report for Assessment of Climate Change Effects in Mongolia, Ulaanbaatar, 2010

⁴¹ Mongolian Human Development Report 2011, Ulaanbaatar, pp 37 – 38.

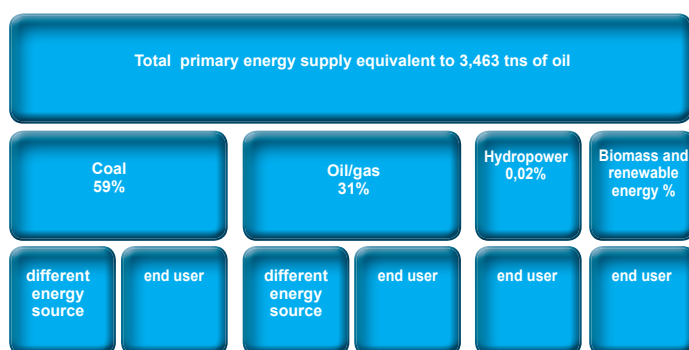


Figure 3.1.4 Key energy sources in Mongolia

Infrastructure and urban development. Government decisions to expand green zones within cities and villages enable regulatory framework to support the establishment of green cities and settlements. A number of measures are taken to update the legal framework to foster the use of environmentally friendly technology in infrastructure sector, adequate use of water, energy efficient housing and smoke reduction.

Urban services. Use of grey water is incorporated in the Law on utilization of water supply and sanitation facilities. Currently, rules and regulations are being drafted for the specific clause on the use of grey water. “Eco town” project supported by international organizations is introducing advanced technologies and solutions to reduce energy loss and recycle water. With application of modern technology, water consumption per resident in apartment houses will be reduced by 25 percent. Step wise Government actions to promote adequate water use and prevent scarcity of drinking water have resulted in installing water meters in all households receiving services from Ulaanbaatar city Waterworks. In 1997, only 14.6 percent of consumer households used water meters (Figure 3.1.5). Installation of water meters is ongoing in other urban areas.

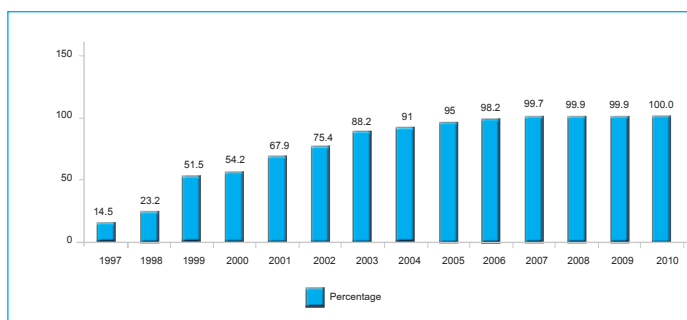


Figure 3.1.5 Installation of water meter in Ulaanbaatar (in percent)

In 2010, water consumption of apartment residents decreased by 1.8 times compared to that of 1997, mainly due to instalment of water meters, helping citizens to change their behaviour in consuming water. Innovated technology and equipments also helped reducing water consumption (Figure 3.1.6).

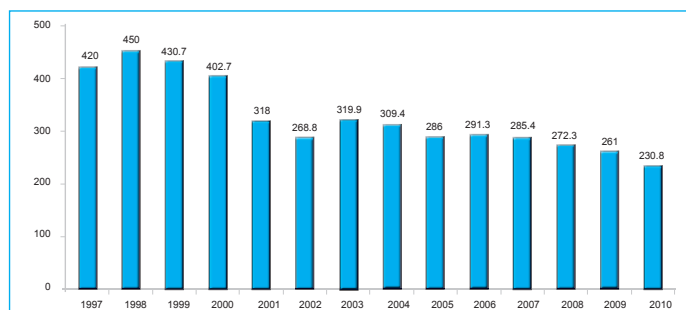


Figure 3.1.6 Water consumption of apartment residents in Ulaanbaatar (in litres per person)⁴²

Residential apartment blocks that accommodate more than 20 percent of the population in Ulaanbaatar require renovation of heating devices in order to reduce heat loss and improve energy efficiency. Net heat consumption of 1,591 residential apartment blocks in Ulaanbaatar is estimated at an average of 345 KWh/year/sqm. If the heating devices and equipment are renovated, the savings in net consumption will be 160 KWh/year/sqm and the annual energy saving will be 15,467 tons of fuel (coal), and eventually, emission of carbon oxide will be curtailed by 23,201 tons⁴³.

Transportation sector: The government of Mongolia is cooperating with international organizations to establish environmentally friendly and sustainable transportation system. “Law on Auto transportation” stipulates that vehicles operating on natural gas fuel and electricity shall be allowed for public transport within and in vicinity of the cities. For reducing air pollution caused by car exhaust, the following actions are planned in the future:

- Increase the number of gas fuel stations for large buses and vehicles;
- shift the public transportation means to combined liquefied gas and diesel engine;
- assemble and produce trolleybuses and use them for public transport;
- lift the taxes on transportation means operating on liquefied petroleum gas and set a higher tax on large diesel vehicles.

Sustainable agriculture. “Research on defining the green economy and sustainable consumption and production pattern” commissioned by MNET provides three feasible rationales for enabling investments towards the transition to a green economy⁴⁴.

⁴² Construction and city service journal, January 2012

⁴³ Heat technique innovation report, 2011 on

⁴⁴ Prof Balganjaviin Khuldorj: Research on defining the green economy and the structures of sustainable consumption and production (Summary Report in Mongolian), 6/27/2011. Page 8.

1. General guidelines for public and private investments should be identified for sectors which play crucial role in advancement of green development in Mongolia. For instance, attention should be paid to generating employment for unemployed in the course of transition to green economy.
2. Strategies should be defined on how poverty will be alleviated through the green principles in crop farming, animal husbandry, forestry, water services and energy sectors and how soil and water resources will be conserved.
3. Policies should be adopted for reduction and removal of environmentally harmful subsidies from the state and regulations against external forces diminishing market conditions and promotion of green trade and investment by the government.

MNET and MNCCI jointly initiated drafting a subprogramme for promoting green economy until 2020 and submitted to the Government. The main goals of the programme are defined as the following⁴⁵:

- increase energy efficiency by 20 percent,
- increase the installed capacity of renewable energy up to 20 percent,
- reduce green house gas emissions by 20 percent,
- increase investments to environmental conservation by 20 percent,
- increase “green procurement” up to 20 percent of total purchases funded by the central and local government budgets.

As of 2011, Mongolia’s human development index reached 0.653 and multidimensional poverty index was 15.8 percent. Nevertheless, income poverty remains high among the population, in particular, in rural areas (Table 3.1.1).

Table 3.1.1. Poverty rate in Mongolia (by locations)⁴⁶

	Poverty level, %				Difference: 2002/2003 %		
	2002-2003	2007-2008	2009	2010	2007-2008	2009	2010
National average	36.1	35.2	38.7	39.2	-0.9	2.6	3.1
Urban	30.3	26.9	30.6	32.2	-3.4	0.3	1.9
Rural	43.4	46.6	49.6	47.8	3.2	6.2	4.4
Ulaanbaatar	27.3	21.9	26.7	29.8	-5.4	-0.6	2.5
Aimag centres	33.9	34.9	37	36.2	1	3.1	2.3
Soum centres	44.5	42	42.6	38.8	-2.5	-1.9	-5.7
Rural	42.7	49.7	53.2	54.2	7	10.5	11.5

⁴⁵ New development trend: green economy” [http://edec.blog.gogo.mn/read/entry292568\(2012.02.03\)](http://edec.blog.gogo.mn/read/entry292568(2012.02.03))

⁴⁶ Mongolian Human Development Report 2011. Ulaanbaatar, page 72

The table shows that the national poverty rate grew by 3.1 percentage points in 2010 compared to 2002-2003 and the poverty rate in rural areas increased by 4.4 percentage points. The national poverty rate was estimated 39.2 percent, challenging Mongolia's achievement of MDG 1: reduce poverty down to 18 percent. Location specific poverty estimates reveal the highest poverty rate in rural areas (54.2 percent, followed by soum centres (38.8 percent) and aimag centres (36.2 percent). The poverty rate in Ulaanbaatar is relatively low (29.2 percent). Currently, the National Statistical Office is estimating the poverty with sampling survey method at the national and regional scales. Lack of detailed data on household poverty by aimags and soums limits targeted effort for poverty reduction. Winter disasters of 1999-2002 and 2009-2010 caused loss of millions of heads of livestock and left more than 20,000 herders deprived of their income sources. As such, herder with no income sources have been moving to urban areas to add to the number of the urban poor.

High rates of poverty must be associated with herder household land tenure. According to the law, herders are unable to claim ownership of the land around their spring and winter camps, they can own lands in aimag and soum centres (0.350 ha per person in aimag centre and 0.5 ha per person in soum centre). Thus, herders are not exercising their rights to choose the place for living as stated in the Constitution of Mongolia. Such deprivations lessen the opportunities to make living in their homelands.

The vegetation cover in Mongolia is changing significantly due to increasing aridity and human activities. Figures 3.1.7, 3.1.8 and 3.1.9 compare the changing vegetation cover within the last twenty years⁴⁷.

⁴⁷ Mongolia: Assessment Report on Climate change 2009. Ulaanbaatar, 2009, pp. 163-164.

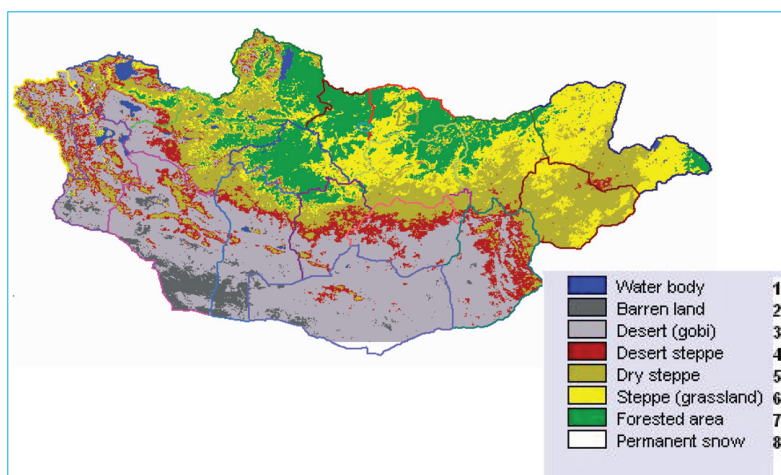


Figure 3.1.7 Soil cover in Mongolia, 1992

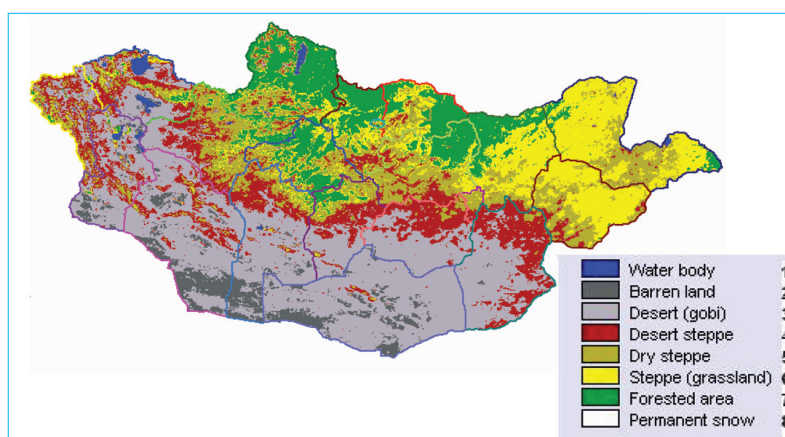


Figure 3.1.8 Soil cover in Mongolia, 2002

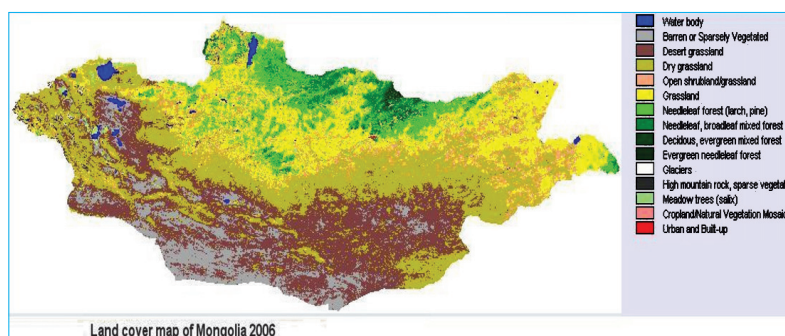


Figure 3.1.9 Soil cover in Mongolia, 2008

The figures show the desertification is rapidly expanding northwards putting pressures on forested lands. Investments should be made to rehabilitation of eroded lands, introduce environmentally friendly technology in animal husbandry and crop farming and increase productivity and management efficiency.

3.2. Means, measures and experiences

Researchers state that transition to green economy yields a number of benefits and gains. First of all, green economy intensifies generation of wealth, particularly ecological and natural capitals, ensuring high GDP growth after six years of transition. Secondly, transition to green economy promotes balancing poverty reduction with environmental conservation. When the poor has direct access to natural capitals, they will be able to get out of poverty and become motivated to conserve the environment. Thirdly, green jobs which would emerge from transition to green economy will outnumber the “brown economy” jobs⁴⁸.

UNEP estimates that the green economy will become reality when the countries continue to invest 2.0 percent of GDP into agriculture, construction, energy, forestry, manufacturing, tourism and water management until 2020. In Mongolia, this means 134.2 million USD based on the today's GDP estimates⁴⁹. Mongolia had been receiving the same amount of financial support annually through grants or soft loans by donor countries and international organizations⁵⁰.

To pursue green economy path, Mongolia should define the green economy strategies and its means and methods for priority sectors. Sector priorities should define policy implementation, goals, targets and their coherence, funding sources and responsible parties. A comprehensive policy document needs to be developed, and in doing so international comparative experiences should be used.

Biological diversity, ecosystems and sustainable tourism. Policy reform shall focus on integration of net GDP in national development policy formulation so that environmental degradation and resource depletion are also accounted to ensure the balanced economic growth and ecological benefits. It also focuses on updating arrangements for enhanced accountabilities and obligations of environmental inter-sectoral management and increased participation of various organizations and citizens.

Improving living conditions lead to enabling human development. Income generation, poverty reduction and human development goals will be achieved when effective community based environmental management is practiced and education, training and information centres for sustainable development are upgraded. Environmental governance that fosters capable staff, coherent legal

⁴⁸ UNEP, 2011, Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication - A Synthesis for Policy Makers., www.unep.org/greeneconomy

⁴⁹ Mongolia's GDP 2010 8,255 trillion ₮ www.nso.mn

⁵⁰ B.Huldorj, Establishment of loan and grant system in Mongolia, Ulaanbaatar, 2011, pages 68 – 71.

environment and optimal management system is a mechanism to address pressing issues.

For the purpose of ensuring the country's sustainable development and promoting economically efficient, responsible and environmentally friendly growth in today's economic and social relations, strategies are being followed in updating the legal framework. It includes introduction of environmental auditing in compliance with international standard, polluter pays the principle, local community engagement in environmental protection, increasing natural resource valuations, establishment of stable funding source for environmental protection measures and introduction of sustainable resource management.

Sustainable energy. Special regulations are enforced to incorporate technical and economic criteria for reducing negative impacts of energy production. The criteria includes emitted dust and smoke, fuel consumption per energy unit production, reduction of loss in internal use and transmission, use of ashes and recycle of water used for technical purposes. The work performance of energy sector staff is assessed through the aforementioned criteria. As per 2010 assessments, the energy sector emitted 6,638.2 tons of CO₂ into the atmosphere and buried 663.8 thousand tons of ash.

Infrastructure and urban development. Urban development: The following actions are planned for defining policy regulations on internal migration, improving city planning and management, infrastructure development and reducing urban and rural disparities:

- Develop Baganuur, Nalaikh and Baganhangai districts to attract the population
- Build apartments for 3.8 thousand households in 2010-2015 within the framework of "100,000 Housing" in Baganuur, Nalaikh and Baganhangai districts
- Develop Baganhangai district as a satellite town of the capital city,
- Establish industries and factories in satellite towns and villages to contribute to reducing the population density in Ulaanbaatar and promote the population resettlements to other towns and villages.

For establishing optimal system of human settlement, a national programme on "Cities" was developed reflecting several measures for proper planning of road networks and improving land use. With the improvement of urban ger district infrastructures, ger residents will be involved in turning their localities into comfortable housing district. Under the objective of abatement of air pollution in Ulaanbaatar city, more than 20 percent of the total construction area should include green infrastructures and the public places in ger districts should have increased green area per person. These goals were spelled out in the New Development programme.

Construction sector priorities are reduction of green house gas emissions that is continuously increasing over the years, introduction of new systems and technologies for energy efficient housing and setting up a funding mechanism. UNDP supported project on energy efficient private housing (2003-2007) made valuable contributions to integration of sustainable development principles in formulation of national development policies and implementation⁵¹. Project supported households managed to save 2,830 tons of coal per year as a result of reducing their fuel consumption 2.0 - 2.5 times. With reduction of coal consumption, the carbon dioxide emission from household was reduced by 3,980 tons.

UNDP and MRTCUD are jointly implementing Building Energy Efficiency Project since 2009. The project aims to increase energy efficiency in the construction sector and reduce green house gas emission. It supports activities for updating building codes, norms and standards for energy efficiency, development and introduction of energy efficient technologies, raising public awareness, training construction sector specialists, providing necessary technical support and improving access to funding mechanism for energy efficient housing. It is expected to reduce CO₂ emissions by 60,000 in twenty years.

Research is being carried out to use 10 percent of total sheep wool to produce insulation materials for buildings and water pipes.

Road and transport: “Updated law on air, draft law on air pollution fee and law on special purpose tax state that cars used for less than 5 years since the production date with engines up to 1,500 cubic cm will be exempt of VAT. In 2011, the fee was increased for vehicles used for more than 10 years with high capacity engines (higher than 3,500 cubic cm). Gradual actions are taken to meet demands to transport minerals without eroding soil and causing dust. MRTCUD issued a decree for mining and transportation companies to build roads linking mining site with border posts and main roads at their own cost. The priorities were set to build paved roads between aimag centers and Ulaanbaatar and budgets are included accordingly in annual investment plans.

Sustainable agriculture From the perspective of land relations, the agriculture sector in Mongolia has dual features. The herders and crop farmers use the government owned lands for their private productions. It will be effective for both sides to invest through PPP agreement, which obliges the parties to preserve the land quality, rehabilitate and improve land resources. This means new regulation is needed for agricultural arable land relations and investments as described below:

1. Revise legal relations of pastureland tenure issues through approval of Law on pastureland or amendment to Law on land and allow ownerships of winter

⁵¹ Report on Inputs of environmental projects 2002-2007 to implementation of Millenium Development Goals, 2008

and spring camps to herders,

2. To monitor level of land degradation by each aimag and soum and plan funding sources for rehabilitative measures,
3. To lay out a legal framework for public and private partnerships in agriculture sector.

Land degradation in Mongolia is caused by overgrazing, forest fires, harmful rodents, uncontrolled use of forest resources, inappropriate mining activities, geological exploration and chemical pollution. Between 2006-2009, 7 percent of the total territory or 110,000 square kilometers of land was degraded annually. In 2007, the extent of land degradation reached the peak and since then it has reduced down to the extent equivalent to that of 2 years ago (Figure 3.2.1)⁵². Pasture degradation dominates the land degradation.

By 2010, a total of 7,359.5 thousand ha of lands were ecologically damaged, of which 6.8 million ha were pasture lands (92.1 percent of the total ecologically damaged lands), 184.5 thousand ha crop lands (2.5 %), 8,543.9 ha settlement areas (0.1 %), 375.7 thousand ha forest lands (5.1 %), 935.9 ha water reservoirs (0.01 %) and 19,419 ha excavated lands (0.3 %)⁵³. Meanwhile more than 70 percent of pasture lands was overgrazed⁵⁴.

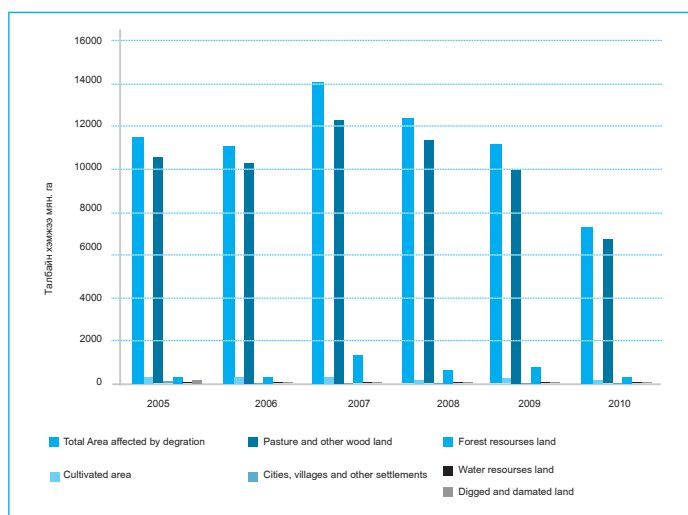


Figure 3.2.1. Land degradation trends (2005-2010)

Source: NSC 2009, 2011. Mongolian Statistical Yearbook 2008, 2010.

⁵² Mongolian Human Development Report 2011 Ulaanbaatar, 2011, page 48

⁵³ Land relations, Construction, Geodesy and Cartography Agency under MRTUB: "2010 National Report of Land Bank". Ulaanbaatar, 2011. pages 61-68

⁵⁴ D.Terbishdagva "Issues concerning the improved pasture management". Ulaanbaatar, 2006, page 5

3.3 Impact of economic growth on natural resources

Biological diversity, ecosystems and sustainable tourism. Everyone can contribute to sustainable development by supporting green economy, developing ecological and domestic tourism, improving ecological education of youth and children and safeguarding the nature and environment. Environmental policy reform focuses on raising economic values of forest, land and water resources, biological diversity and ecosystem services, which is the universally accepted method of natural resource management. The policy reform targets the creation of ecological tax for enabling independent financing of environmental conservation as well. Also it aims for ensuring environmental issues are prioritized in mining activities through introduction of proper rehabilitative measures.

Sustainable energy. Traditional energy sources in Mongolia severely impact the environment. In 2011 only, the TPSs consumed 5,063.1 thousand tons of coal having emitted 7,600 thousand tons of CO₂ into the atmosphere.

Infrastructure and urban development. Housing and urban services: The access to adequate housing is improving for population: Mongolia's apartment floor area was 8,483.2m² in 2008, which increased to 9,543.9 m² or 1.12 times in 2010. Nationwide 5,416 apartments were put into operation in 2008. The number was estimated at 6,338 in 2009, 9,899 in 2010 and 7,874 in the first three quarters of 2011 (Figure 3.3.1).

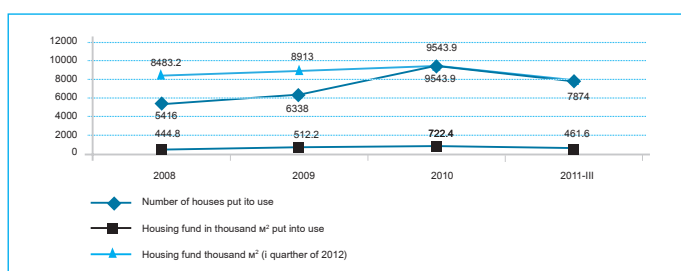


Figure 3.3.1. Increase in new housing

The National Statistical Office reports that the proportion of urban population with access to safe drinking water was 30.5 percent in 2005 and increased to 38.5 percent in 2009. For the same period, the proportions were 8.7 percent (2005) and 9.3 percent (2009) in rural areas. The data shows that the remaining half of the population lacks access to improved water sources. The access to adequate sanitation slightly increased from 21.3 percent in 2005 to 24.7 percent in 2010 in urban areas, whereas this indicator remained unchanged or 5.3 percent in rural areas. The progresses in achieving the targets on reducing the proportion

of population without access to safe drinking water and adequate sanitation were estimated at 77.0 percent and 69 percent respectively.

Auto road: In 2005, the length of the paved road was 1,503.5 km and extended 1.6 times reaching 2,442.6 km in 2010 (Figure 3.3.2).

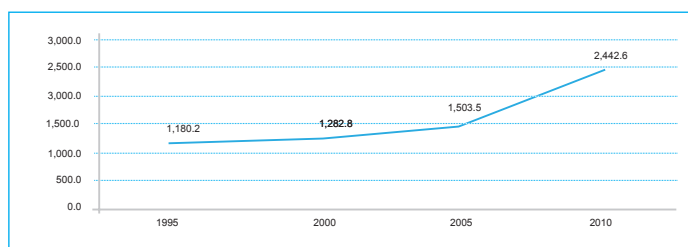


Figure 3.3.2. Paved road

Investments in the road construction exponentially grew during the last five years (Figure 3.3.3). Compared to 2005, the investment in the road construction grew as much as five times. Investments mainly come from the stage budget, road fund, international loans, grants and public and private partnerships.

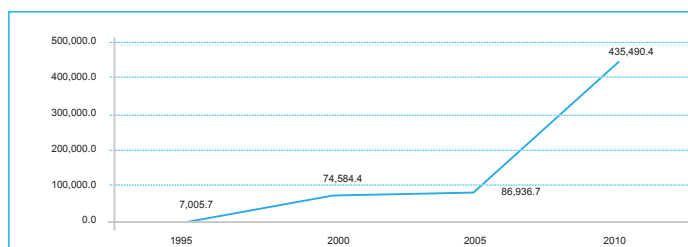


Figure 3.3.3. Investment in road construction

The size of cargo transported by railroad is steadily growing (Table 3.3.1). At present, Mongolia runs 1,810.6 km railway network.

Table 3.3.1. Railway transportation

Indicators	Measurement unit	Years					
		2006	2007	2008	2009	2010	
Cargo transportation	Th. persons	14793.2	14072.6	14646.9	14164.5	16804.0	
Local transportation	Th. persons	7347.6	7512.6	8016.2	7670.6	8304.4	
Cargo turnover	Mil. tons km	9218.5	8360.6	8261.4	7817	10286.7	
Passenger transport	Th. persons	4329.9	4482.4	4358.8	2548.5	3516.3	
Passenger turnover	Mil. persons km	1288.5	1406.4	1400.5	1003.1	1220.0	

SGK approved a state policy for railway transportation in 2010. The policy aims at meeting demands for effective and reliable transportation network. The fast economic and social growth prompted by mining and manufacturing sectors is creating ever increasing demands to deliver goods to the external markets.

Air transport is a strategically important sector because it delivers international and national transport services in this landlocked country.

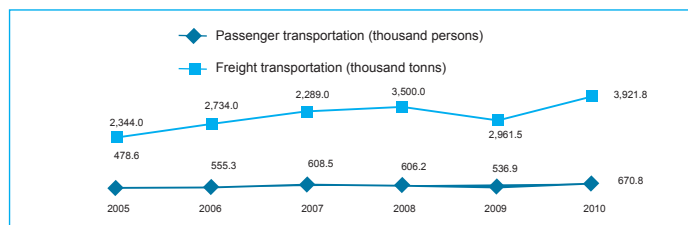


Figure 3.3.4. Air transportation growth

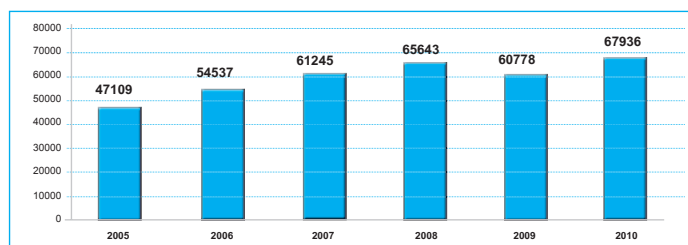


Figure 3.3.5. Transit flights

Approximately seventy thousand flights passed through the air space in Mongolia annually. They use ten routes that link Europe, North America, East and South East Asia (Figure 3.3.6).

Sustainable agriculture. Every year, pastureland conservation measures are undertaken as funded by the state budget. For instance, a total of 1.3 billion tugriks was allocated from the state to fund combating pasture rodents on 405 thousand ha, in territories of 61 soums of 9 aimags and protection of pasture lands from grasshoppers covering 60.6 thousand ha of lands in 2009. Since the measures against land degradation are not extensive, the impact are rather limited. Thus, livestock grazing should be subjected by pasture carrying capacity supported by the detailed analysis, vis-a-vis livestock numbers in each of aimags and soums. Overpopulation of livestock and overgrazing are main causes for pasture degradation. Between 1990 – 2009, the livestock population drastically increased, including goat population increased from less than 5.0 million to 20.0 million.

3.4. Activity guideline

Biological diversity, ecosystems and sustainable tourism. Sustainable development policies, plans and regulations must be implemented at all levels and development initiatives should be based on the principles of environmental conservation and rehabilitation. This way, global ecosystems will be kept balanced, and in particular, biological diversity and life supporting functions and services will be shifted from vulnerability into sustainability.

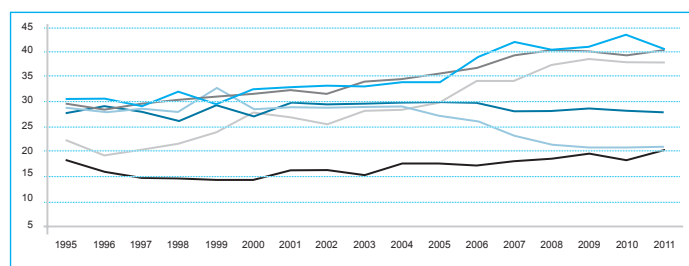
Introduction of high technology for production and services including green technology, information technology and sustainable tourism is assumed in near future. As a result, organic products capitalizing on potentials of agricultural raw materials and natural resources will enable economic growth in Mongolia. The share of green economy shall dominate GDP as a basis for sustainable development.

Sustainable energy. Attention is being paid to reducing losses in energy production, so that negative environmental impacts are minimized (Figure 3.4.1). Technical and technological innovation plays an important role in reducing energy loss as shown in Figure 3.4.1. The CEs of technically and technologically renovated TPSs by the state budget has been steadily increasing, whereas CE of TPS 2 continuously declined as it was not renovated. There are opportunities to increase CE of TPS 2 in Dornod aimag, TPS in Darhan aimag, TPS 4 and TPS in Erdenet City. Thus, it is crucial for the government to conduct technical and technological assessments and determine investment needs for existing and planned heat and electric sources. There is a potential to develop energy sector domestically, capitalizing on science and technology advances (Box 3.4.1).

Box 3.4.1. Environmentally Friendly Ukhaa Khudag Thermal Power Station (TPS)

Mongolian engineers designed and built Uhaa Hudag TPS with 18 MW production capacity applying innovative technology. The boiler is low temperature circulation and high temperature combustion type. Ukhaa Hudag TPS functions reliably with high economic efficiency and generates low amount of toxic gas.

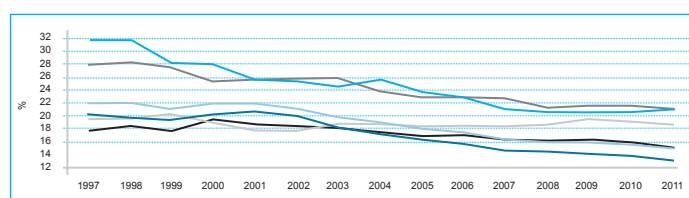
- Nitric acid from coal combustion is 2-4 times lower than other domestic TPSs and 2.2-2.22 times lower than accepted levels in RF, USA and Mongolia;
- A system of air cooling condensator and dry removal of ash which is very suitable in gobi. The system does not use water and therefore, environmentally not damaging;
- Coefficient of efficiency of electric ash filter is 99,5 %;
- Waste water will be re-used to reduce the dust in mineral transportation roads and irrigate gardens
- Air pollution by wind blown ashes is prevented;
- 20 percent of total area of TPS is green infrastructure



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
TPS-2	28.9	27.9	28.4	28.0	32.6	28.4	28.9	28.9	29.0	29.1	27.2	26.1	23.3	21.4	21.0	21.0	21.2
TPS-3	22.3	19.2	20.4	21.7	23.9	27.7	26.8	25.6	28.1	28.2	29.8	33.9	34.2	37.2	38.6	37.9	37.8
TPS-4	29.5	28.3	29.7	30.4	31.0	31.6	32.3	31.6	33.9	34.3	35.7	36.7	39.3	40.3	40.1	39.2	40.3
Darkhan TPS	27.5	29.1	28.0	26.3	29.3	29.4	29.5	29.4	29.5	29.6	29.7	29.8	28.1	28.0	28.5	28.1	28.0
Erdenet TPS	30.6	30.7	29.1	32.1	29.5	33.5	32.9	33.2	33.1	33.9	34.0	39.0	41.9	40.3	40.8	43.3	40.5
Dornod TPS	18.4	16.2	14.9	14.7	14.5	14.6	16.3	16.3	15.5	17.7	17.0	17.3	18.1	18.6	19.4	18.3	20.2

Figure 3.4.1. Dynamics of coefficient of efficiency of TPSs in Mongolia (1995 – 2010)

Project on Reducing Electricity Transmission Loss was implemented from 2007 to 2010, covering Ulaanbaatar city, Bayanhongor, Govi-Altai, Umnugovi, Dornod, Huvsgul, Suhbaatar, Bayan-Ulgii, Hovd and Uvs aimags and contributing to reduction of transmission line loss resulting in savings of 7,703.7 million tugriks in total. Compared to 2004, the electricity transmission line loss was reduced by 8.3 percent in Ulaanbaatar, 30.0 percent in Bayanhongor, 28.1 percent in Govi-Altai, 7.66 percent in Umnugovi, 12.69 percent in Dornod, 20.1 percent in Huvsgul and 10.43 percent in Hovd (Figure 3.4.2). The electricity transmission line in Uvs had the highest loss in the country that accounted for 60 percent of produced energy.



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
TPS-2	17.79	18.54	17.89	19.56	18.68	18.34	18.22	17.76	17.01	17.15	16.40	16.21	16.35	16.07	15.31
TPS-3	31.62	31.62	28.15	27.83	25.60	25.40	26.60	25.57	23.74	22.75	21.03	20.68	20.54	20.76	21.13
TPS-4	20.25	19.91	19.48	20.11	20.71	19.89	18.27	17.17	16.40	15.78	14.80	14.44	14.09	13.84	13.24
Darkhan TPS	19.55	19.55	20.22	19.06	17.67	17.75	18.78	18.79	18.39	18.65	18.50	18.89	19.47	19.18	18.66
Erdenet TPS	28.04	28.30	27.33	25.38	25.62	25.84	25.86	23.82	22.98	22.93	22.80	21.37	21.59	21.57	21.24
Central Energy System	22.00	22.00	21.00	22.00	22.00	21.00	19.08	19.08	18.13	17.50	16.47	16.11	15.87	15.62	15.14

Figure 3.4.2. Internal electricity consumption by TPSs

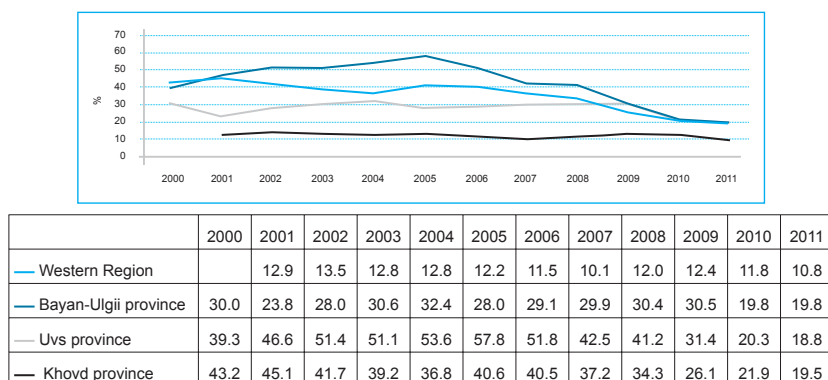


Figure 3.4.3. Loss in electricity transmission line in the western region

The loss of electricity transmission and distribution lines in energy production systems in the western region was reduced to 27.2 percent (Figure 3.4.3).

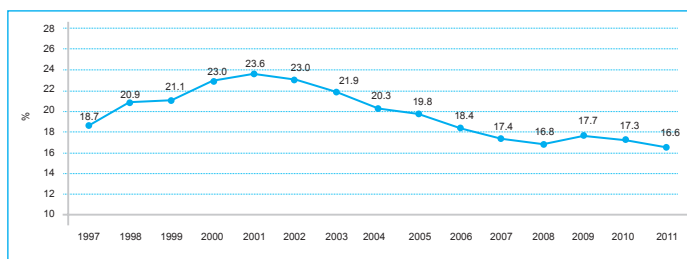


Figure 3.4.4. Loss in electricity transmission and distribution in the central region

Infrastructure and urban development. A long-term programme is being implemented for infrastructure and urban development. *Urban development:* Healthy and safe living conditions will be ensured once institutional structure for population settlement and territorial units are optimized and town development is coherent with their specific inputs to regional economic and social development. A holistic system of territorial organization and population settlement will be established and comprehensive policy will be enforced in Mongolia. Under the two phases of development strategy, the city of Ulaanbaatar will be developed to the level of capital cities in industrialized countries. The first phase 2012 – 2016 will focus on enforcement of a policy for decentralization in the capital city and reduction of air and soil pollution and on improvement of engineering infrastructures. The second phase 2016 – 2021 will focus on advancing Ulaanbaatar into a productive city which meets all requirements and profile of a capital city.

Construction, construction materials, housing and urban services: Construction technology will be upgraded to meet international standards and

by 2031 nano technology will be fully introduced in construction sector to allow construction material exports. Water and heat provision and waste water treatment facilities will be renovated and expanded and managed by computerized monitoring system by 2031. National Programme on “Housing” will be implemented to provide 60 percent of the total population with housing, while Programme “One Household and One Housing” will fully enable housing access.

Road and transportation: Establishment of auto road and railway network will be completed in compliance with the national economic and social development trends, needs and requirements. In the medium term, the following actions will be taken:

The length of national paved road network will be extended to 80,00 km.

- Road network maintenance and operation services will be set up to enable smooth functioning.
- Auto road network in Ulaanbaatar will be expanded.
- Auto road network will be set up to transport mineral resources and products.
- Advanced road, communications and energy infrastructures will be created to comply with Asian and regional development policies and tendencies.

As stated in the policy documents, the railway network in our country will be extended by 5,600 km. This target will be achieved in three phases; 1,100 km of railroad in the first phase, 900 km in the second phase and 3,600 km in the third phase.

Air transport: Renovation and reform in air transport will be stimulated to make it more competitive in international markets with increasing private ownerships. Domestic and international airport infrastructures will be established and air transport fleet will be upgraded to enable for airport services.

Under the strategic goal of developing infrastructure and urban development for the next 20 years, a legal environment will be created to enable and stimulate the introduction of advanced technologies based on green economy principle. Such technologies shall be environmentally friendly and highly efficient in energy, water and heat consumption. At the same time, projects offering innovative solutions will be supported with policies and partnerships between public, private sectors and civic society will be strengthened.

Sustainable agriculture. Legal provisions for land ownership, possession and use by rural population need to be revised to foster green economy and poverty alleviation. The following needs to be undertaken:

1. Make amendments to the related laws to allow herders to own a land around their winter and spring camps.
2. Legalize the rights for long-term possession of pastures by herders in the vicinity of winter and spring camps, to which herders invested in fencing and maintenance.
3. Allocate agricultural arable lands to herders and crop farmers on a long-term basis through public and private partnership agreements and hold them accountable for land quality, soil conservation and improvement in line with green economy requirements.

Rural poverty alleviation issues should be dealt differently by considering specifics of pastoral herder households and farmers and farming communities based in towns, enterprises and soum centres. For instance:

1. Herder households need to graze their animals on a rotational basis to avoid pasture degradation and enable natural regeneration of grazing land vegetation. For that purpose, herders will be assisted to revive their traditions. At the same time, herder initiatives to reduce animal husbandry risks, ensure food security and generate incomes, should be supported. Examples of such measures include fencing of 3-5 ha of lands in the vicinity of winter and spring camps, establishing windbreaks and improved hay and vegetable fields and building warm animal shelters.
2. Attention should be paid to improving supplies of ecologically clean products to urban population. For that purpose, quality, health and productivity of intensified farm animals should be boosted and fodder production through high-yield fodder plants must be expanded in the vicinity of urban areas.
3. Crop farmers need to improve crop production through enhancement of soil fertility, introduction and use of environmentally friendly technology and rotational planting of locally suitable high-yield plants with proper irrigation and maintenance, and waste free harvesting.
4. Law on exchange of agriculture products and raw materials will be put in effect in June 2012. Thus, herders, crop farmers and manufacturing entrepreneurs will be trained for increased competitiveness.
5. Business skills and vocational training opportunities will be provided for poor and vulnerable people in soum and aimag centres on opportunities for small and micro business. Moreover, actions should be taken to increase access of poor and vulnerable people to soft loans.

The Government will take actions to provide quality and equitable delivery of basic social services⁵⁵ and implement state policy on herders. In fact, it is

⁵⁵ United Nations Development Framework 2012-2016

urgent to take the following actions for rural population:

- Implement regionally specific projects and programmes with focus on improving health services to rural population⁵⁶
- Enable herders undergo regular medical check ups funded by the government and provide medical staff for soum and bag services⁵⁷
- Implement a programme on enrolling herders in social insurance system and providing adequate social welfare services⁵⁸

⁵⁶ Government Policy for Herders, 2011, Statement 3.3.5

⁵⁷ Government Policy for Herders, 2011 Statement 3.3.6

⁵⁸ Government Policy for Herders, 2011 Statement 3.1.6

3.5. Summary

Numerous efforts in achieving sustainable development goals have yielded positive results. The public is becoming increasingly aware of green economy concept and main features of new development trend. For public outreach, mass media has been playing important role by organizing various discussions, debates and seminars on these issues. Major progresses in this regard, can be summarized below:

- With support of UNEP, a research on green economy, sustainable consumption and and production pattern has been conducted;
- Government and non government organizations defined their priorities for green economy and reached consensus on the following needs:
 - Developing aimag and region specific eco tourism
 - Improving provision of safe drinking water for citizens and identify immediate actions for green city development
 - Determining strategies to supply ecologically clean products to population, stimulation of animal husbandry and crop farming sectors, integration of poverty reduction goals and soil and water conservation targets in policies for economic sectors including animal husbandry, transportation, forestry, water and land management and energy sectors
 - Reducing negative environmental impacts of energy sector and loss in production and transmission

Line ministries, government and non governmental organizations are working on priority sectors for green economy development and according concepts.

With exclusive attention paid to the role of infrastructure for green economic growth, the government of Mongolia has begun to take concrete steps on development of auto road, railway and air transport and introduction and use of science and technical advances in generating environmentally friendly energy sources.

4

INSTITUTIONAL NETWORK FOR SUSTAINABLE DEVELOPMENT



The National Council for Sustainable Development (NCSD), established in 1994 by the Government Resolution, was the starting point for a growing network of organizations for sustainable development in Mongolia. Following that, local sustainable development Advisors were appointed in 1996 to work in Aimags and in the capital city Ulaanbaatar, and social, economic and environmental councils were established at the Aimag and the capital city governors' offices. The council members represented a wide range of stakeholders such as local administration, local self-governing organizations, governmental, non-governmental, youth and womens' organizations.

The national and local councils regularly held meetings until 2002 to discuss the implementation progress and challenges regarding Agenda 21 and issued resolutions to promote progress. Since then, there is no data or information about whether the councils convened to meet and what agenda they might have discussed. The participants of the consultation of January 2012 found that the activities of the social, economic and environmental councils in the Aimags and capital city actually ceased. According to the meeting participants from Aimags, the actions and measures by Aimag Governors' Offices rarely correspond with the goals and targets of the sustainable development agenda, and policies lack continuity and consistency. Generally, the agenda adopted by the previous administration is discontinued by a newly appointed administration and its public servants.

There is still no ministry mandated with holistic guidance and coordination of sustainable development issues. The director of Sustainable Development and Strategic Planning of the Ministry of Nature, Environment and Tourism (MNET) acts as a secretary of the National Council for Sustainable Development. The responsibility is added to his main duties and the director has no support from a specialist. De facto, the MNET deals with sustainable development issues although not formally mandated with this responsibility. Both ministries and local administrations handle sustainable development issues in addition to their main duties as mandated for their specific sector. They separately plan the annual investments towards sustainable development targets and actions to be submitted to the Ministry of Finance for integration in the state budget. Such fragmented approach obviously results in fragmented implementation of activities towards sustainable development targets. When the National Development and Innovation Committee was established under the Prime Minister's office, the duties for sustainable development issues were not legally assigned.

Biological diversity, ecosystems and sustainable tourism. Business and the public, non-governmental organizations, civil society and local communities play a crucial role in implementation of sustainable development goals and targets. It is of utmost importance to set up a legal environment and optimal organizational structure to stimulate cooperation and partnership among the central and local administrations, private sector, citizens and investors.

The MNET declared the year of 2008 as a year of promotion of NGOs and provided support to organize a national consultation. A civil council which represents

all environmental NGOs was established. This has brought the cooperation between government and civil society organizations into a new stage of implementing environmental protection measures.

Sustainable energy. There is no specialized division or unit and staff responsible for sustainable development within the Ministry of Mineral Resources and Energy (MMRE) which is in charge of fuel and energy policy in Mongolia. Its contribution to sustainable development is limited to preparing and submitting a report to the MNET. However, the MMRE has been restructured and established several implementation agencies. The Energy Department and the National Centre for Renewable Energy were formed to implement sector wise sustainable development, particularly to promote renewable energy and its role in the energy sector.

4.1 National Council for Sustainable Development (NCSD)

The NCSD in Mongolia was the second institution established in the Asia - Pacific Region as a follow up to the Rio Declaration. Since then, however, there is no data or documentation on changes in membership of the NCSD after 2001, and analysis of the current report is based on a resolution issued by the council in August 2000. The NCSD has several specific features including:

- It is chaired by the Prime Minister, signifying the high priority of the National Council for Sustainable Development
- It had two deputy chairs. One deputy chair was the chair of the Standing Committee of SGK (chairs of economic, environmental and social standing committees on a rotational basis) and another chair was a Government Cabinet Member (Finance, Environment and Trade and Industry Ministers on a rotational basis).
- It had 24 members represented by 4 ministers, 2 deputy ministers, 4 Aimag governors, 4 state secretaries, 2 directors of ministry departments, 5 NGO and business members (Figure 4.1.1). The NGO representatives were chosen according to the agenda by the NCSD.
- It has issued a resolution, and a note on the agenda and decisions, and the relevant organizations implemented them as government decisions.
- It was mandated to represent Mongolia at the UN and in the region.

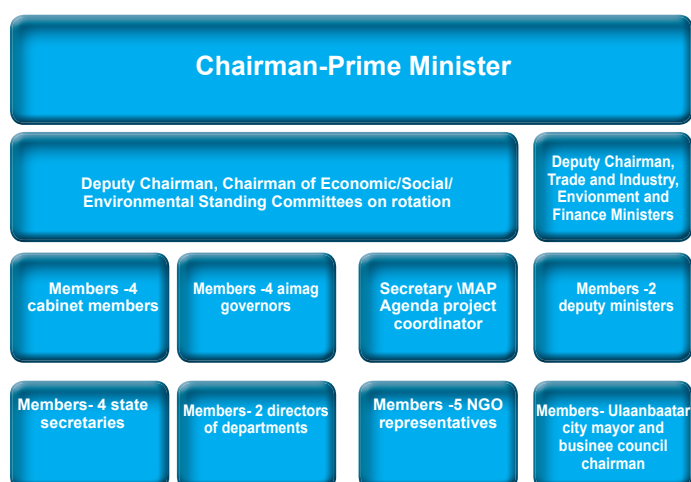


Figure 4.1.1. *Organizational structure of the National Council for Sustainable Development, Mongolia* 59

The NCSD was operational until 2004. Thereafter, activities of the project office of MAP 21 in charge of the sustainable development programme implementation ceased due to a lack of funding. As a result, the NCSD stopped functioning. The office had been extending methodological and organizational support and providing financial grants to national and local level activities. The office was coordinating all the activities at national and local levels, undertook advocacy measures and organized trainings. For instance, a sustainable development curriculum was drafted and integrated in education system, and a number of textbooks and publications were released to raise the awareness of sustainable development issues in Mongolia.

Biological diversity, ecosystems and sustainable tourism. A number of projects were implemented to combat desertification, promote small business and entrepreneurship, provide vocational training and to create employments for poor and vulnerable. Sustainable development funds were set up in local areas. The results were positive and noticeable. Since 1998, all Aimags and the capital city drafted their sustainable development programmes that were approved by CRM. The approved sustainable development programmes were mainstreamed in the action programmes of Aimag and city governors and other policy documents. Eastern, western and central regions as well as some large soums formulated their sustainable development programmes which are successfully implemented.

Infrastructure and urban development. The goals and targets of the sustainable development programme have been integrated in all sector policies and planning. A new structure was set up for implementation of sustainable development goals and targets and alignment of newly approved projects and programmes. These new

⁵⁹ B. Khuldorj, Mongolian NCSD: experience and lessons, Asia Pacific Forum for Environment and Development, Bangkok, January 10 – 13, 2002

structures include:

- The Funding Corporation for Housing was established to support access to housing for low and middle income households. The corporation will fund the construction of houses with government bonds of 60 billion Tugriks and provide mortgages.
- The Mongol IPOTECH Corporation LTD was set up by Mongol Bank in cooperation with 10 commercial banks. The Corporation intends to create a financing system to provide the population of Mongolia with housing.
- A National Committee for Facilitating Trade and Transportation was established in 2007.

A committee for intersectoral coordination has been set up with the objective to reform institutions and tariff mechanisms for urban services within the framework of the Comprehensive National Development Strategy, Sustainable Development Goals, Millennium Development Goals, the Government Actions Programme and the Mongolian Economic and Social Development Guideline.

4.1.1. National interventions

Biological diversity, ecosystem and sustainable tourism. Since 2005, the central state administration in charge of environmental issues has been acting as a part time secretary of the NCSD, and has provided the necessary information for central and local organizations and reported to the international organization in a timely manner. In addition, the same institution has been reporting on implementation of the sustainable development programme to the Government as required. The MNET jointly with the UNDP has been taking actions to implement the sustainable development programme and to support related issues. These actions include setting up working groups represented by ministries, agencies, research organizations, academia, professionals, NGOs and the public, supporting short term projects to conduct research, and organizing consultations to receive public views⁶⁰.

4.1.2. International cooperation

Biological diversity, ecosystems and sustainable tourism. Over 10 international organizations are actively cooperating in the environment sector, among which the cooperation with ESCAP, UNEP, UNDP and FAO is generating significant results.

Cooperation with the Asia and Pacific Regional Office of UNEP has successfully began with activities such as policy formulation, assessments, amendments to and revision of existing environmental laws, and participating in bio-safety, international waters and regional environmental and sustainable development measures. Jointly

⁶⁰ “The Implementation Status of Mongolian Action Programme for Sustainable Development in Local Areas” consultation, MNET, January 16, 2012

with UN FAO, a project document for community based wildlife management has been drafted.

A number of projects supported by international organizations are in under implementation. These include “Coping with Desertification”, “Sustainable Land Management for Combating Desertification”, “Eradication of Sources of Yellow Dust”, “Desertification Studies”, “Integrated Water Resource Management”, “Green Belt”, “Co-Management of Natural Resources”, “Strengthening the Network of Protected Areas in Mongolia” and “Building Management Capacity for Disposal of Polychlorinated biphenyl with Environmentally Friendly Method”.

Sustainable energy. Since 1990, Mongolia has been cooperating with the International Renewable Energy Association and mainstreamed the goal of extensive use of renewable energy sources in the CNDS and Government Action programmes as one of the priority targets. Mongolia joined the “Global Energy Council” and the European “Energy Chart”. Three projects from Mongolia have been made signatory to the Executive Council of Clean Development Mechanism, established under the UN Framework Convention on Climate Change.

Since Mongolia joined the Kyoto Protocol, it has been estimating the reduction in green house gases generated by Durgun and Taishir HPS. The energy estimate shows that these hydropower stations reduced the generation of green house gas by about 70 thousand tons between 2008 and August 2011. Japan has started buying reduced emissions through these stations. As of now, these hydropower stations function with full capacity to meet energy demands in the Western region.

Infrastructure and urban development. Road and transportation: To develop road and transport relations with its neighbouring countries, the Government of Mongolia has made an agreement on international auto road relations and transits. Moreover, Mongolia joined the “International cargo Transportation TIP Convention” in 2002 and became an active partner in the international transport and logistics network due to its enduring endeavours.

For the purpose of increasing the number of transit passengers and cargo, Mongolia joined the Asian and European road and communications networks in 2004 through three main routes: AN-3, AN-4 and AN-32. In addition, Mongolia joined an international agreement on the TransAsia railroad network which links Europe and Asia in 2008. The co-owned Mongolian - Russian “Ulaanbaatar railway” became a member of the international association of railways in 2011.

Sustainable agriculture. Mongolia is receiving assistance from international organizations and donors to promote sustainable agriculture development and has established 31 bilateral agreements with 14 countries such as RF, CPR, Germany and India, and international organizations such as the Word Bank and the Millennium Challenge Account. The programme, which will be jointly implemented with UN FAO, sets forth the following six priority goals:

1. Promote sustainable agriculture through enhancement of livestock quality, health and productivity and improvement of pasture, fodder and water supplies,
2. Increase productivity of crop farming, increase crop species and ensure food security through introduction of environmentally friendly technique and technologies, irrigation and optimal rotation,
3. Promote sustainable natural resource management,
4. Adapt to climate change and cope with natural disasters,
5. Develop value chains, improve food safety and quality control system, support food and agriculture sector and improve market access,
6. Develop and implement national policy and investment plan on food safety for rural poverty alleviation.

A total of 20 projects are being implemented in agriculture, crop and food production sectors through grants, soft loans and technical assistance by international donor organizations such as FAO, International Fund for Agricultural Development, Asian Development Bank, World Bank, UNDP, European Union, Govrenemnts of Japan and Switzerland.

4.2. Local organizations for sustainable development

4.2.1. Aimag and capital city sustainable development councils

The Aimag and capital city social, economic and environmental councils ceased its function after 2002. With the closure of pilot projects and Aimags sustainable development funds established through approved sustainable development programmes, local networks also stopped functioning.

The programme is well designed and formulated using bottom-up planning approaches and community participation, It reflects locally specific conditions and priorities. Therefore it has been integrated in four subsequent government action programmes. Within the framework of the programme, a number of infrastructure projects were implemented through the central and local government budgets. These include improvements of water supply and sanitation conditions, and improved auto roads and waste recycling.

Although the aforementioned programme is being implemented for a relatively long period of time, stable and phased actions for its sustainability has not been addressed due to a weakness in monitoring and evaluation framework. It is conrirmed by the findings of a questionnaire survey conducted among representatives of 18 Aimags during the consultation meeting on the implementation status of the sustainable development programme (Table 4.1.1).

Table 4.1.1. Sustainable Development Programme implementation

Questions	Yes	No
Any action ongoing to update MAP 21?	10	8
Do you find the implementation of MAP 21 satisfactory?	-	18
Are the implementation methods and means adequate?	3	15

Approximately 70.0–100 percent of the surveyed aimag officers responded that the implementation and methods were unsatisfactory. The findings indicate that lessons can be learnt from the assessment of the MAP-21 implementation.

4.2.2. Non governmental organizations for sustainable development

Biological diversity, ecosystems and sustainable tourism. National NGO consultations were organized twice for the last four years. These consultations were attended by 71.0–88.0 percent of the NGOs and resulted in establishment of the Mongolian Environmental Civil Council (MECC) and its local branches. The MECC has an appointed steering committee with 11 members, a permanent secretariat office and branches in eight aimags. By 2010, 549 NGOs worked in the environmental sector, of which 329 based in Ulaanbaatar and 220 in rural areas. The MNET holds a partnership agreement with the MECC.

The Mongolian Environmental Parliament established five committees and is working towards linking citizen and decision makers. Environmental NGOs are conducting advocacy measures such as newsletters and newspapers “Mother-Earth”, “Green News”, “Green Savior”, “Environment-Life”, “Green Post”, “Green pursuit” along with other initiatives.

Sustainable energy. The Sustainable Energy Development Council was set up in 2009 to attain sustainable and efficient energy sector in Mongolia. The council has the following duties:

- Support sustainable energy production
- Introduce new technique and technologies in energy production
- Advise policy makers
- Conduct research on renewable energy
- Provide necessary information and referral services for energy companies and bridge them with the government and agencies.

The “Mongolian Energy Association“ NGO - a member of the Global Energy Council operates within two sectors: traditional and renewable energy. The renewable energy sector of the association is proactively engaged in development of solar, hydro and wind energy sources. It has carried out “Technical and Economic Feasibility for Innovation and Expansion of Energy System in the Eastern Region”.

Infrastructure and urban development. NGOs actively implement infrastructure development policies. There are 10 NGOs active in urban development, 12 NGOs in construction and construction materials, 13 NGOs in housing and urban services and 27 NGOs in road and transportation. Among them, the Association of Mongolian Cities and Towns established in 2003 has been taking measures to support the development of member cities and towns by linking them with international development programmes and strengthening established relations with such programmes (Figure 4.2.1). For that purpose, an urban development information and research centre was established (Box 4.2.1). The Association of Cities and Towns organized a number of study tours and trainings such as “Ecological Issues- Basis for Sustainable Urban Development” in 2006, “Water Resources and Desertification” in 2007, “Urban Green Infrastructure and Land Rehabilitation” in 2008 and “Greening of Towns in Gobi and Steppe region”.

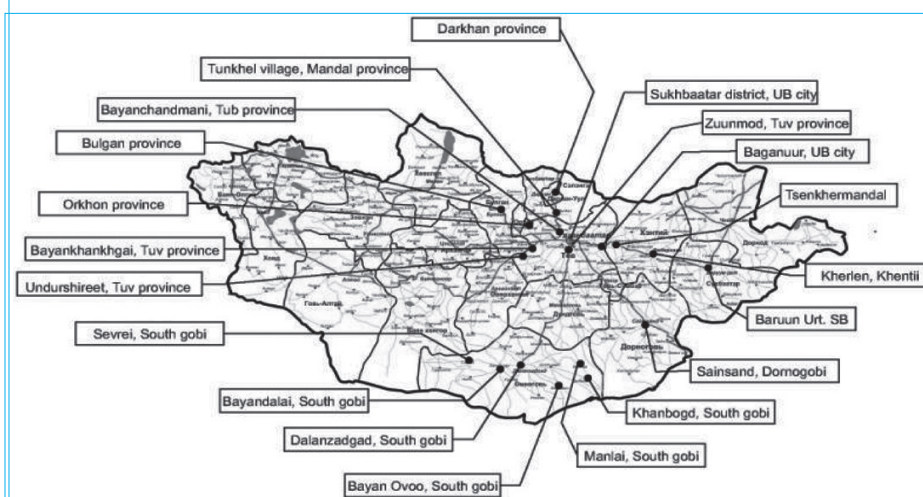


Figure 4.2.1. Pilot sites for inclusive development

The President of Mongolia issued a decree to replicate the initiative for inclusive growth across the country in 2008.

Sustainable agriculture. The National Association of Mongolian Agricultural Cooperatives is a NGO that uses sustainable development as a guiding concept for their activities. The association has branches in 21 aimags and supports 8 inter-soum cooperatives and 400 member cooperatives in soums. Over 100 thousand members and more than 300 thousand people benefit from its activities and thousands of people are provided with job opportunities. Many NGOs such as Farmers Union for Reforming Rural Mongolia, Seabuckthorn Producers and National Producers' Union work towards capacity building in rural areas and promoting crop and fruit

production. They are making a valuable contribution to greening of the agriculture sector. The Mongolian National Association for Seabuckthorn Producers trained more than 2,000 individuals in planting seabuckthorn on 3310 ha of fields through the period of 2010-2011. Through the Seabuckthorn programme 809.4 thousand seabuckthorn seedlings were bought from domestic producers and distributed to 600 individuals and enterprises in 2011 through five-year loans to support their initiatives to grow the fruit. Also, the technical standards “MNS 6250; “Black Current Seedling” MNS 6251:2011; “Seabuckthorn MNS 0196:2011 have been developed and approved.

Box 4.2.1: Urban Development Information and Research Center (UDIRC)

UDIRC carries out activities in two areas to support sustainable urban development, poverty reduction and creation of safe living conditions for ger district population:

- Inclusive development with community participation: (a) activate urban poor and set up community groups (b) provide households with primary infrastructure to improve their living conditions ; (c) set up community development fund
- Information exchange and training/advocacy: (a) inclusive urban planning, housing, micro credits, creation of data base for infrastructure development; (b) referral service and training, (c) information provision.

As of now, over 170 groups were established involving 3,500 households in Ulaanbaatar and 20 soums who saved 45.9 million tugriks and granted 36.8 million worth micro credits.

The Center has set up a cooperation network with NGOs, projects, programmes and government organizations working on improving people's living conditions. The network works towards influencing decisions that affect ger residents and exchanges information and experience through quarterly meetings.

4.3 Summary

Mongolia has gained significant experiences in creating network for sustainable development and has been sharing its lessons within the region. The NCSD has organized the actions geared at drafting and implementing of Mongolian Action Programme for the 21st Century at national, local and regional (western, central and eastern) levels. These activities continued until 2004 when the UNDP project on sustainable development finalized, after which the activities of the NCSD started to stagger and eventually stopped. Similarly, aimag and capital city's social, economic and environmental councils, which had drafted and implemented the sustainable development programmes, did not function since 2004. In absence of a responsible body, local pilot projects and sustainable development funds ceased to function, thereby leading to inactivity of local sustainable development network. Nevertheless, the efforts by some government organizations and non governmental organizations which remain committed to sustainable development concept have resulted in development of sustainable development programmes in eastern, western and central regions and soum large soums.

One of the crucial outcomes of sustainable development programme is the emergence of a system of NGOs. By 2010 there were 549 NGOs in Mongolia, out of which 329 were based in Ulaanbaatar and 220 in rural areas. Furthermore, 10 NGOs work in urban development, 12 in construction and construction materials, 13 in housing and urban services and 27 in road and transportation. At the same time, there are recognized active NGOs, such as National Association of Mongolian Agricultural Cooperatives which has branches in 21 aimags and joins 100,000 members, Sustainable Energy Development Council and Mongolian Energy Association, a member of the Global Energy Council.

The network of these NGOs presents a driving force for an inclusive green development, and therefore, the success of making use of this huge and dynamic force by the government depends on how well it manages to foster the cooperation between private sector and civic society.

5. Recommendations

Based on the findings of the analysis which was carried out in drafting the report, the following recommendations were put forward:

- **Green economy concept, its implementation means, methods and priority sectors need to be defined.** Sectoral priorities should reflect sector wise policy implementation, goals, targets and their coherence, investment needs and sources, responsible bodies and implementation programmes. The concepts and implementation means will enable synergy with the previous policy documents and the local context and conditions, when they are defined with the local community participation based on a bottom-up approach. Technology research and pilot centre for environmentally friendly clean development must be set up and the funding made available to conduct scientific research works and experiments. Such measures will be a prerequisite for laying out a basis for green development.
- **A permanent and full time independent body and network, perhaps similar to national council for sustainable development, need to be created within the government structure with responsibilities assigned for transition to a green economy.** The network must have branches not only in local areas but also within the line ministries. Internal coherence and functions of the government structure should be built on the basis of the new body. It would be appropriate for the new body to become accountable for the national development issues, climate change, desertification, poverty reduction and multilateral cooperation. In enabling the new body, the lessons learnt of the current functions of the national council for sustainable development should be considered:
 - The structure was not integrated into the government structure;
 - The council's unofficial status resulted in financial shortcomings and halt of functioning;
 - Disaggregation of international cooperation across many ministries incapacitated the regulatory mechanism and adversely affected its efficiency.
 - All of the above conditions caused discontinuity in human resource and policy implementation.
- **Economic, legal and organizational mechanisms need to be improved for implementation of development strategies and plans.** This way, integration of environmental and social issues will be enabled. Furthermore, it will present opportunity to create comprehensive mechanism required to make transition to green economy. The mechanism, first of all, must incorporate the following:
 - A legal environment that enables financial incentive to individuals actively

engaged in environment protection and decision making and accountability of individuals, organizations and local administration that allowed environmentally damaging activities;

- Increased financial resources for environmental protection and rehabilitation and reducing environment pollution, setting regionally differentiated taxes and fees for natural resource utilization, integration of ecological and social dimensions into national inventory systems for comprehensive ecological and economic valuation;
 - Creation of insurance system for natural disasters and calamities;
 - Enabling pasture land tenure by herders and privatization of winter and spring camps to herders for household use through approval of the Law on pastureland or amendment to the Law on land;
 - Scientifically determined levels of land degradation by each aimag and soum and resolve the funding issues for rehabilitation measures;
 - A system of performance assessment of line ministers, aimag governors and capital city mayor that considers achievements towards sustainable development goals, level of incorporation in their policies and measures taken.
- **Natural resources and environmental management need to be enhanced in coherence with the green economy concept in all sectors along with creation of an responsible body in line ministries.** It should be discouraged for state administrations to make decisions on any sector wise issues without involving this body. The same applies for international cooperation.

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- Resolution No.39 for Approving “State Policy on Herders, issued in 2009
- Resolution No.23 for Approving a National Programme “Mongolian Livestock”, issued in 2010
- Resolution No.29 “Measures for Enforcement of Law on Exchange of Agricultural Products and Raw Materials, issued in 2011

Government Resolutions:

- Resolution No.32 for Approving a National Programme for Food Security, issued in 2009
- Resolution No.144 for Approving a National Programme for Food Safety, issued in 2011
- Resolution No.70 for Approving a National Crop Campaign III, issued in 2008
- Regulation No.221 “Financial incentives to Herders and Individuals, Members of Cooperatives for Sheep and Camel Wool Sale to National Industries, issued in 2011
- Regulation No.134 “Formation, Management and Control of Soum Development Fund, issued in 2011
- Resolution No.223 “Establishment of Veterinary and Breeding Services in Soums, issued in 2010

Annex 1. Renewable energy power stations established in rural areas

№	name	Location	Capacity	The date of operation start
A. Hydropower stations				
3	HPS in Munkhhairhan	Hovd aimag, Munhhairhan soum	150 kwt	2003-07
5	HPS in Manhan	Hovd aimag, Manhan soum	150 kwt	1998-09
6	HPS in Guulin	Govi-Altai aimag, Delger soum	400 kwt	1999-08
7	HPS in Ider	Zavhan aimag, Tosontsengel soum	375 kwt	2006-07
8	HPS in Erdenebulgan	Huvsgul aimag, Erdenebulgan soum	200 kwt	2006-10
9	HPS in Uyench	Hovd aimag, Uyench soum	960 kwt	2006-11
10	HPS in Durgun	Hovd aimag, Durgun soum	12 kwt	2008-06
11	HPS in Taishir	Govi-Altai aimag, Taishir soum	11 kwt	2010
12	HPS at Hunguin Gol	Zavhan aimag, Zavhanmandal soum	115 kwt	2010-05
13	HPS at Galuutai	Zavhan aimag, Tsetsen Uul soum	150 kwt	2010-06
B. Wind power stations				
14	WPS in Bayan-Undur	Bayanhongor aimag, Bayan-Undur soum	1.5 kwt	1999-08
15	WPS in Erdenetsagaan	Suhbaatar aimag, Erdenetsagaan soum	100 kwt	2004-12
16	WPS in Mandakh	Dornogovi aimag, Mandah soum	80 kwt	2007-11
17	WPS in Sevrei	Umnugovi aimag, Sevrei soum	80 kwt	2007-12
18	WPS in Bogd	Uvurhangai aimag, Bogd soum	80 kwt	2007-12
19	WPS in Hatanbulag	Dornogovi aimag, Hatanbulag soum	150 kwt	2007-12
C. Solar power stations				
20	SPS in Bogd	Bayanhongor aimag, Bogd soum	1 kwt	1999-07
21	SPS in Noyon	Umnugovi aimag, Noyon soum	200 kwt	2003-09
22	SPS in Dadal	Hentii aimag, Dadal soum	6.8 kwt	2006-06
23	SPS at Hopitals	97 soum hospitals	9.7 kwt	2006-10
24	SPS in Tsetseg /diesel run/	Hovd aimag, Tsetseg soum	100 kwt	2007-12
25	SPS in Bugat	Govi-Altai, Bugat soum	140 kwt	2010-03
26	SPS in Durvuljin	Zavhan aimag, Durvuljin soum	150 kwt	2010-06
27	SPC in Urgamal	Zavhan aimag, Urgamal soum	150 kwt	2010-06
28	SPS in Altai	Govi-Altai aimag, Altai soum	200 kwt	2010-06
29	SPS in Tsogt	Govi-Altai aimag, Tsogt soum	100 kwt	2010-06

30	SPS Mandah	Dornogovi aimag, Mandah soum	120 kwt	2010-10
31	SPS in Altai	Bayan-Ulgii aimag, Altai soum	10 kwt	2010-11
32	SPS in Tsengel	Bayan-Ulgii aimag, Tsengel soum	10kwt	2010-11
33	SPS in Buyant	Bayan-Ulgii aimag, Buyant soum	10 kwt	2010-11
F. solar and wind twin generator (SWS)				
35	SWS in Bayan-Undur	Uvurhangai aimag, Bayan-Undur soum	5 kwt	2000-08
36	SWS in Adaatsag	Dundgovi aimag, Adaatsag soum	5 kwt	2000-08
37	SWS in Tariat	Arhangai aimag, Tariat soum	5 kwt	2000-08
38	SWS in Tsagaanchuluut	Zavhan aimag, Tsagaanchuluut	6.1 kwt	2001-11
39	SWS in Naran	Suhbaatar aimag, Naran soum	8 kwt	2003-10
40	SWS in Tseel	Govi-Altai aimag, Tseel soum	150 kwt	2007-12
41	SWS in Manlai	Umnugovi aimag, Manlai soum	150 kwt	2007-12
42	SWS in Bayantsagaan	Bayanhongor aimag, Bayantsagaan soum	150 kwt	2008-01
43	SWS in Bayan-Undur	Bayanhongor aimag, Bayan-Undur soum	150 kwt	2008-06
44	SWS in Shinejinst	Bayanhongor aimag, Shinejinst soum	150 kwt	2008-06
45	SWS in Matad	Dornod aimag, Matad soum	142.5 kwt	2008-03