UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE

# ENVIRONMENTAL PERFORMANCE REVIEWS

## Mongolia

Synopsis

UNITED NATIONS
New York and Geneva, 2018

CONTENTS

# *Preface*

This Environmental Performance Review of Mongolia takes stock of progress made by the country in the management of its environment since 1987. It covers legal and policy frameworks, compliance assurance, greening the economy, environmental monitoring, public participation and education for sustainable development. Furthermore, the EPR addresses issues of specific importance to the country related to air protection, biodiversity conservation and water, waste and land management. It also examines the efforts of Mongolia to integrate environmental considerations into its policies in the forestry and health sectors and highlights the progress achieved in the management of disaster risk associated with natural and human-made hazards. The review further provides a substantive and policy analysis of the country's participation in international cooperation on the environment, with a specific focus on the three Rio Conventions.

The successes of Mongolia in the achievement of the Millennium Development Goals are highlighted, as well as the challenges to be addressed by the country when implementing the globally-agreed Sustainable Development Goals.

The EPR of Mongolia began in January 2017 with a preparatory mission to agree on the structure of the report and the schedule for its completion. A team of international experts took part in the review mission from 22 to 30 May 2017. In September 2017, the draft report was submitted to Mongolia for comments and to the ECE Expert Group on Environmental Performance Reviews for consideration. During its meeting on 25 and 26 October 2017, the Expert Group discussed the draft report with the delegation from Mongolia, focusing on the conclusions and recommendations made by the international experts. The recommendations, with suggested amendments from the Expert Group, were then submitted for peer review to the ECE Committee on Environmental Policy at its twenty-third session on 16 November 2017. A high-level delegation from Mongolia participated in the peer review and the Committee adopted the recommendations in this report.

The Committee and the ECE secretariat are grateful to the Government of Mongolia and its experts who worked with the international experts and contributed their knowledge and expertise. ECE would also like to express its appreciation to the German Federal Ministry for Environment, Nature Conservation, Building and Nuclear Safety and the German Federal Environment Agency for their support by providing funds through the Advisory Assistance Programme. Sincere thanks also go to France, Germany, Portugal and the United Nations Environment Programme (UNEP) for having provided their experts and to the United Nations Development Programme (UNDP) for its support of this review.

ECE also takes the opportunity to thank Portugal and Switzerland for their general financial support to the EPR Programme in 2017 and expresses its deep appreciation to Belarus, Estonia, Georgia, Germany, Hungary, Italy, Montenegro, Republic of Moldova, Romania and Switzerland for having provided their experts for the ECE Expert Group on Environmental Performance Reviews, which undertook the expert review of this report.

# *Executive summary*

## Policymaking, legal and institutional framework

*Mongolia is well on track with the work on implementation and monitoring of the 2030 Agenda for Sustainable Development and its Sustainable Development Goals (SDGs).* The Government has designed the 2016 Mongolia Sustainable Development Vision 2030 as a framework policy document for implementation of SDGs. It has assessed the availability of indicators. High ownership of SDGs among governmental officials is an important achievement. However, the institutional framework for coordination of SDG implementation and monitoring still needs to be operationalized.

*Green development is a clear policy objective, enshrined in the key national visionary document, the 2016 Mongolia Sustainable Development Vision 2030, as well as in the specific green-economy-oriented 2014 Green Development Policy.* A weak point of the planning system, especially from the environmental perspective, is the non-application of the strategic environmental assessment (SEA) tool for evaluation of environmental impacts of future sectoral policies.

*Since 1987, Mongolia has developed an extensive legal framework on environmental protection.* The environmental legislation is largely consistent and coherent. However, implementation of environmental legislation is often delayed. Furthermore, enforcement of environmental laws and environment-related provisions in sectoral legislation often represents a serious challenge.

*In recent years, the Government made efforts to integrate environmental requirements into the legal and policy framework on mining.* Nevertheless, there are still a number of deficiencies. The environmental impact assessment (EIA) is conducted late in the permitting process. The mandatory agreements between mining companies and local authorities in order to protect the environment are not publicly disclosed. Implementation of legislation on the restoration of land affected by mining represents a huge challenge.

*The current policy documents related to mining focus on establishing a favourable investment environment for the mining sector.* Their environmental focus is less pronounced. There is no policy document that specifically addresses the abandoned and damaged mining areas and their rehabilitation. Similarly, there is no policy document that targets the creation of opportunities for artisanal miners to switch to other areas of employment.

*One of the key issues for the Ministry of Environment and Tourism is staff turnover.* High staff turnover impedes the consistent development and implementation of policies on the environment and green development and destabilizes the institutional memory of the organization.

*The establishment of the General Agency for Specialized Inspection (GASI) under the Prime Minister in 2003 has allowed the separation of policymaking and the regulatory function from the control and enforcement function.* Positive outcomes include more efficient use of resources and strengthening of the links between thematic inspectors. However, the insufficient level of cooperation between GASI and the Ministry of Environment and Tourism is a weak link in the new system. The dependency of soum environmental inspectors on soum governors is another drawback.

## Regulatory and compliance assurance mechanisms

*The permitting and licensing system is continuing to evolve, incorporating additional environmental media and additional pollutant sources and environmentally-damaging activities.* However, some implementing regulations are absent or incomplete, leading to some gaps in permitting, notably regarding air emissions and wastewater discharges.

*The EIA procedures are comprehensive and Mongolia has accumulated extensive experience with the use of the EIA instrument.* Still, EIA in practice is undermined by poor implementation by licensed entities and ineffective

oversight. Public confidence in the EIA system is low. A cumulative impact assessment procedure is envisaged by the legislation, but its practical application has been limited.

*The revised 2012 Law on Environmental Impact Assessment provides for biodiversity offsetting.* Opinions about how biodiversity offsetting and alternative land rehabilitation actually work differ among governmental officials and international and local non-governmental organizations (NGOs) and activists. Guidelines for biodiversity offsetting and rehabilitation of alternative land are insufficient.

*The introduction of environmental audit in 2012–2013 was an important addition to the environmental management framework.* Practical implementation of environmental audit has been rather slow and experience is limited to date. The audit practice is being driven by voluntary commitments or investor pressure, not by the legislation.

*The Government's commitment to the Extractive Industries Transparency Initiative (EITI) is central for progress in encouraging companies to adopt sustainable practices and integrate sustainability information into their reporting cycles in line with SDG Target 12.6.* EITI Mongolia offers a structure for transparency that could give foreign investors confidence in the fairness of licensing. However, there are important gaps in the data provided to EITI Mongolia by the authorities.

*The adoption of environmental management systems has progressed lately, but so far very few companies have been certified in accordance with MNS ISO 14001.* Current efforts by the Government to promote the standard are not sufficient. No systematic effort is applied to promote resource efficiency and cleaner production among the business community.

## Greening the economy

*The greening of economic growth is a key goal of the national development policies. Sectoral policies are being revised in line with the 2014 Green Development Policy and 2016 Mongolia Sustainable Development Vision 2030.* However, the overall costs of achieving the related numerous targets and measures have not been estimated.

*Financing of environmental expenditures and related national programmes relies largely on annual state budget allocations and foreign loans and grants.* Resources allocated to the Environment and Climate Change Fund for the financing of national environment-related programmes have remained quite small. Local governments can rely on their own earmarked revenues for financing environmental expenditures, but the actual expenditures have fallen increasingly short of the mandatory funds that they should spend.

*Another challenge is to develop statistics for the measurement of green growth indicators, which are designed inter alia for gauging the extent to which economic growth has been decoupled from environmental degradation (SDG Target 8.4).* First steps in this direction have been made with the approval by the National Statistics Office (NSO) in July 2017 of 38 green development indicators.

*The role of economic instruments in creating effective incentives for changes in the behaviour of polluters has remained modest.* The tax rates applied to the four components of the air pollution tax are too low for achieving this. The water pollution tax has been awaiting the adoption of secondary legislation required for its implementation. The excise duty on motor fuels has not been used as an instrument for more rational use of petrol and diesel.

*Tariffs for water supply and energy do not provide sufficient incentives for rational use of these resources.* Insufficient tariffs for recovering costs are also a barrier for greater private sector involvement in the provision of these services.

*Mongolia has developed and applied methodologies for assessing the monetary value of natural resources, which are used as benchmarks for the calculation of environmental damage compensation.* However, the ways and means of establishing the asset values are not fully transparent and therefore difficult to appreciate. The same holds for the fees imposed on the use of the numerous specific types of natural resources, which are set at the local government level.

*Mining companies are obliged to build up financial reserves to ensure adequate rehabilitation/reclamation of mining sites after their closure.* However, there are concerns about whether these funds are sufficient for financing the required works in such a way that they meet the existing international best practice in the mining sector.

*Mongolia has a huge potential in terms of solar and wind energy production. Interest in the sector is growing, reflected also in inflows of foreign direct investment (FDI).* However, the exploitation of the huge potential for renewable energy remains a major challenge despite a generous system of feed-in tariffs designed to provide financial incentives for the development of the renewable energy sector and the recently-introduced system of support tariffs.

### Environmental monitoring and information

*The environmental monitoring network covers the core environmental themes.* However, it requires strengthening and some indicators are also lacking in the collection and reporting. In particular, there is no noise and vibration monitoring. The last nationwide assessment of species of different biomes was carried out in 2010, and was not repeated in 2014, due to the budgetary shortages. The laboratories of the National Agency for Meteorology and Environmental Monitoring (NAMEM) lack capacity; some laboratories at aimag (provincial) level lack accreditation for key parameters.

*Self-monitoring is required by the legislation.* In reality, larger companies have dedicated units and the quality of self-monitoring reports is better, but small and medium-sized enterprises (SMEs) struggle.

*The Ministry of Environment and Tourism issues a national state of the environment report (SoER) every two years.* The reports are indicator based, but not based on the Driver, Pressure, State, Impact, Response (DPSIR) framework. They do not contain a non-technical summary.

*The Ministry of Environment and Tourism and the National Statistics Office (NSO) cooperate to produce official environmental statistics.* However, the two institutions lack experience and capacity to produce good quality environmental statistics, which is a prerequisite for the production of high quality environmental reports, implementation of the System of Environmental-Economic Accounting and the production of indicators in the follow-up and review of the 2030 Agenda for Sustainable Development.

### Access to information, public participation and education

*The legislative framework regulating access to environmental information is in place and evolving.* Nevertheless, adequate implementation by both the Government and the public remains a challenge. The current practice and procedures in governmental institutions other than the Ministry of Environment and Tourism in providing environmental information to the public are rather fragmented. Another concern is the scarce online availability of information on the state of the environment, including raw and aggregated data and metadata.

*The Environmental Information Centre (EIC), managed by the Information and Research Institute of Meteorology, Hydrology and Environment under NAMEM, is a powerful tool for the sharing of information with the public.* However, that information is incomplete and available data are often contradictory.

*Mongolia is progressing towards developing the legal framework for public participation in environmental decision-making and implementing it in practice.* However, numerous challenges remain to ensure effective public participation. These include insufficient time for public consultations on planned projects and for public comments on the drafts of laws and secondary legislation, and the lack of capacity and knowledge among local authorities and businesses on how to engage the public in consultations.

*There are 487 registered environmental NGOs, though, according to the Ministry of Environment and Tourism, only about 100 environmental NGOs are active.* There are a number of environmental NGO coalitions and movements. Organizing themselves in coalitions and movements helps NGOs conduct activities in a more targeted and efficient manner.

*Cases of harassment and pressure against environmental activists for their environmental activities still occur.* It is not clear what actions are being taken by the Government to prevent such cases from occurring and to ensure proper investigation and avoid suspicion of covering up.
*Access to the courts for members of the public and NGOs is limited by the resources, skills and knowledge available to them.* The overall financial costs for filing and pursuing cases in the courts are too high to allow the public fair access to justice in environmental matters. Judges do not receive training on environmental matters.

*The process of integration of education for sustainable development (ESD) into curricula has intensified in recent years, since ESD was integrated into the curricula of general secondary education.* Implementation of the new curricula in all schools across the country is now important, along with the efforts to further expand the integration of ESD at various education levels. Numerous activities are implemented as part of informal and non-formal education on the environment and sustainable development.

*The biggest challenge is the provision of necessary financial resources from the state budget in order to ensure the training of teachers and build capacity on ESD of relevant governmental officials.* The Government's continuous commitment to and provision of adequate support to integrate ESD into formal and non-formal education are prerequisites to the successful development of ESD and the achievement of SDG Targets 4.7 and 12.8.

### Implementation of international agreements and commitments

*International, regional and bilateral cooperation is at the heart of environmental policy in Mongolia.* The country committedly follows the international community's progress on sustainable development, the environment and green development. With the approval of the Mongolia Sustainable Development Vision 2030 in 2016, the country became one of the global early adopters of the SDGs.

*Mongolia is party to nearly all relevant global multilateral environmental agreements (MEAs).* It has rapidly ratified the most recent MEAs, such as the Minamata Convention on Mercury. Nonetheless, a few gaps remain, and ratifying further MEAs would support the country in achieving a more comprehensive framework for the protection of the environment.

*Implementation and compliance with international obligations remain a challenge.* This is due in part to insufficient human resources and capacity and financial resources in the Ministry of Environment and Tourism.

*The country has complied with its international reporting obligations.* Some exceptions occurred in reporting under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (Basel Convention).

*Mongolia has been supported by an increasing number of bilateral and multilateral donors. This shows the country's capacity to establish diverse strategic partnerships.* Nevertheless, Mongolia is highly dependent on the international donor community in respect of technical expertise and financial resources.

*From the early 1990s, the country has advanced considerably in wetland classification, designation of Ramsar sites, management and public awareness activities.* Some protected areas were expanded to cover areas within Ramsar sites. However, not all designated Ramsar sites have management plans. The priorities also include conducting status assessments for Ramsar sites and improving Ramsar site monitoring activities.

*Mongolia has been making constant efforts to protect specific species, driven by its obligations under CITES and the Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention).* Several programmes were adopted to protect specific species, such as red deer, argali, snow leopard, Saker falcon, musk deer and Gobi bear. However, there is insufficient reliable and systematic information on the results of these programmes. Monitoring and law enforcement remain significant challenges.

*The country has progressed notably in the 20 years of implementation of the international agreements related to the ozone layer.* The Government reported the consumption of 0.64 Ozone Depleting Potential (ODP) tons of hydrochlorofluorocarbons (HCFCs) in 2015, which is 54 per cent below the country's baseline. Mongolia

therefore fulfilled the 10 per cent reduction in HCFC consumption in 2015 foreseen in the Montreal Protocol schedule.

### Implementation of Rio Conventions

*Although no specific mechanism or structure exists to promote synergies between the implementation of the Rio Conventions, the main policy frameworks in the three domains directly or indirectly contribute to the coordinated implementation of the three Conventions.* Institutional, technical and financial capacities remain the main challenges for the implementation of all three Conventions, though to differing degrees.

*Mongolia has more than 20 years' experience of strategic planning on biodiversity, which has resulted in a vast but somewhat dispersed set of legislation and policy documents relevant for the implementation of the 1992 Convention on Biological Diversity (CBD).* The main benefits lie in the steady evolution of the designation of state specially protected areas. Challenges affecting CBD implementation are associated with pressure on ecosystems related to cross-sectoral issues such as climate change, desertification, habitat degradation due to unsustainable agricultural practices and pollution due to the growth of mining operations near river beds.

*The legal and institutional framework for implementation of the 2000 Cartagena Protocol on Biosafety is generally adequate.* Challenges persist in terms of having the capacity to perform risk assessments and monitoring activities regarding living modified organisms (LMOs). No national database for registering LMOs and derived products exists. Legislation is in need of revision in order to comply with the 2010 Nagoya–Kuala Lumpur Supplementary Protocol on Liability and Redress.

*Mongolia has an interest in rapidly starting implementation of the 2010 Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization, in order to prevent the continuation of genetic resources leaving the country.* However, in addition to building an adequate legal framework, the main challenges for implementation lie in the funding required, capacity development and the operationalization of an effective institutional framework.

*Being a party to the 1994 United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa (UNCCD), Mongolia implements its National Action Programme to Combat Desertification 2010–2020 aligned with the 10-year Strategy of UNCCD.* Having an adequate strategic framework has facilitated access to international organizations and donor countries that support the implementation of technical assistance projects. A land degradation monitoring network was established.

*Greenhouse gas (GHG) emissions amounted to 34,530 Gg $CO_2$ eq in 2014, representing an increase of 57.07 per cent since 1990.* The largest contributors are the energy sector (50 per cent of total emissions in 2014) and the agriculture sector (48.44 per cent). In 2014, Mongolia was in fifty-fourth position in the global ranking of $CO_2$ emissions per capita, with 7.12 t $CO_2$ emissions per capita.

*Mongolia has done a comprehensive and thorough strategic planning and needs assessment on climate change, which is a direct benefit of being a party to the 1992 United Nations Framework Convention on Climate Change (UNFCCC).* The country today has time series of up to 25 years of climate-relevant data, though some challenges persist in terms of data availability and GHG inventory. Mongolia has benefited extensively from technical and financial support through the Clean Development Mechanism (CDM), the Joint Crediting Mechanism and the Green Climate Fund.

*The 2015 Nationally Determined Contribution (NDC) of Mongolia includes the target to reach an annual reduction of 7,300 t $CO_2$ eq of emissions in 2030, corresponding to a 14 per cent reduction compared with a business-as-usual (BAU) scenario, excluding Land Use, Land-Use Change and Forestry (LULUCF).* However, implementation of the measures foreseen is not yet decided. Furthermore, although adaptation components have been included in the main strategic documents on climate change, no strategy or national adaptation plan has been approved to date. Preparation of such a plan is an important element for achievement of SDG Target 13.2.

## Air protection

*Although the air quality monitoring network of 40 monitoring sites seems robust, only 11 sites are automated.* There is no regular monitoring or self-monitoring of emissions of major polluters, and insufficient air quality monitoring in ger districts. Also, there are no available data on air emissions on the national level. Government policies are more focused on the capital city, while bad air quality in other regions is insufficiently addressed.

*Particulate matter (PM) is considered the main pollutant in Mongolia, especially in Ulaanbaatar.* However, there is limited scientific knowledge on its content and source.

*The dust storms from the Gobi Desert (predominantly yellow sand) contribute substantially to sporadic PM pollution peaks.* However, regular assessment of air quality does not take into account the contribution of sand and dust, especially to $PM_{10}$.

*The Government has implemented numerous projects in ger districts, providing clean fuel and improved heating stoves, as high concentrations of suspended particles are commonly blamed on the use of raw coal for domestic heating in ger districts.* Annual concentrations of $PM_{10}$ in Ulaanbaatar show a certain decline but, due to inconsistent measurements and lack of data analysis, the results of actions taken are difficult to estimate.

*The revised 2012 Law on Air requires major stationary sources to install equipment to monitor air emissions and abatement equipment.* However, emissions from power plants are not monitored regularly and there is no national emission standard specifically for large combustion plants. The Law also prescribes fines for violating emission standards. However, the fines are too low to serve as an incentive to install abatement equipment.

*According to the 2010 Law on Air Pollution Fees, fines for major sources that exceed emission standards should be calculated based on the estimated value of the damage.* The most significant environmental damage caused by air pollution is damage to human health. However, there is no precise methodology for the estimation of population exposure and calculation of the economic cost of the health impact of air pollution. This also leaves Mongolia less prepared to substantially reduce the number of deaths and illnesses from air pollution in line with SDG Target 3.9.

*The Mongolian standard MNS 4585:2016 for the Air Quality Index prescribes the method for calculation of such an index.* The prescribed methodology makes the Air Quality Index misleading, as, in most of the cases, the values of the Index would correspond to the real $PM_{10}$ concentrations.

## Water management

*The Government established the priorities for water management in the 2010 National Water Programme and 2016 Mongolia Sustainable Development Vision 2030.* Much attention is paid to revising and extending the legislative and regulatory frameworks. Achievements include the prohibition of mineral exploration and exploitation in run-off source areas, introduced in 2009, and placing 44.5 per cent of the total area of river sources under national protection by 2016.

*The integrated water resources management (IWRM) approach is a priority direction for reforming the water management system.* Practical implementation of IWRM lags behind, with the need to develop IWRM plans for the remaining basins, ensure implementation of IWRM plans and advance opportunities for public participation in water management.

*Mongolia established 21 water basin administrations for its 29 water basins.* However, these bodies lack the experience needed for implementation of their tasks. Training and professional development of employees of the water basin authorities are of the utmost importance, to enable them to implement the assigned tasks and be better positioned for advancing implementation of Target 6.5 of the 2030 Agenda for Sustainable Development.

*About 95 per cent of the water used in the country is supplied from groundwater resources, which amount to only 1.91 per cent of the total volume of Mongolia's water resources.* Surface water resources are unequally distributed throughout the territory and are used to a limited extent.

*The official data for access to water supply and sanitation and the related MDG indicators vary between different sources.* The clear gaps are the persistent differences in access to both water supply and sanitation between urban and rural areas, the limited number of households connected to central sewerage systems in urban areas and the very low percentage of the rural population (according to some sources, less than 5 per cent in 2010) estimated to have access to adequate sanitation. Open defecation is still practised. Additional efforts are therefore needed for the country to achieve Targets 6.1 and 6.2 of the 2030 Agenda for Sustainable Development.

*Treated wastewater increased from 60 million $m^3$ (30 per cent) in 2012 to almost 88 million $m^3$ (44 per cent) in 2016.* Untreated wastewater is dumped into the environment, causing surface water and groundwater contamination. The lack of financial resources causes delays in repair, maintenance, restoration and reconstruction of wastewater treatment plants (WWTPs). This is especially true for WWTPs in rural areas and in remote locations.

### Waste management

*Although waste data have been collected for more than a decade, their quality is low.* A list of hazardous waste was adopted, but it is not used in practice. Other waste-management-related data exist but are not aggregated at the national level. The lack of waste management data impedes the development of projects and provision of information to public.

*The priority in waste management during the last decade was the improvement of municipal solid waste (MSW) management and healthcare waste management.* Sectoral strategies or sectoral waste management plans are not in place. Radioactive waste is not considered an immediate priority.

*Regular MSW collection services are concentrated in urban areas.* The overall waste collection coverage is assumed to be 70 per cent in urban and 40 per cent in rural areas. Waste collection coverage in Ulaanbaatar is estimated at 90–95 per cent.

*MSW is disposed of in dumpsites, which are located near residential areas.* These sites were created ad hoc, and only later did municipal authorities start to declare official disposal sites. There are about 400 official disposal sites covering territory of 3,500–4,500 ha. The number of illegal dumpsites is hard to estimate but, during the period 2006–2016, more than 4,000 illegal sites covering 500,000 ha were cleaned and 1.1 million tons of illegally disposed waste were transferred to official disposal sites.

*Recycling is focused on high-value wastes such as metals, plastics, paper and cardboard. Separation of recyclables from municipal waste is well developed with a system of buy-out points.* However, most recyclables are exported because recycling capacities are lacking in Mongolia. A complex waste management facility, EcoPark, is planned to enhance waste recycling capacities.

*Information on hazardous waste is limited. It is estimated that about 27,000–54,000 t of hazardous waste is generated annually throughout the country.* The main sources of hazardous waste are sludge from tanneries, waste from processing and use of crude oil, and soil containing cyanide and mercury from gold ore processing. Additionally, there are banned chemicals and acids from the recycling of car batteries. Improved reporting mechanisms on hazardous waste are needed for Mongolia to be able to measure progress towards achieving SDG Target 12.4.

*Information on the environmental impact of artisanal mining activities is limited.* The 2007 SoER identified 120 illegal gold extraction sites. These illegal activities generated 203,500 $m^3$ of tailings and 53.5 ha of land contaminated by mercury.

### Biodiversity and protected areas

*Mongolia has managed to preserve its pristine natural ecosystems and is still one of the last wildlife species refuges of East Asia.* However, throughout the last three decades, Mongolia has experienced rapid declines of numerous species, including those globally threatened by extinction. Simultaneously, the integrity of almost all natural ecosystems in each of the four ecoregions of Mongolia is currently threatened, mostly due to growing anthropogenic pressures.

*Since the beginning of the 1990s, Mongolia has developed a complex system of protected areas, designated at different administrative levels and covering almost 47 million ha, or 29.91 per cent of the country's territory, in 2017.* However, a considerable part of wildlife habitats and migration corridors of wide-ranging and globally significant species remain in the "non-protected" 70 per cent of the country. Moreover, in the case of some protected areas, the current zoning pattern does not provide the sufficient protection level for important wildlife habitats. Addressing these challenges is important for Mongolia's progress in achieving SDG Targets 15.1 and 15.4.

*Management planning is not adequately regulated by the current legislation, and remains a weak point of the system.* The management responsibility pattern is complicated, as strictly protected areas (StrPAs) and national parks (NPs) are either directly managed by the State or by contracted NGOs and herder group associations, while State-designated nature reserves (NRs) and natural monuments (NMs), as well as all locally-designated buffer zones and local protected areas (LPAs), are managed by the regional and local authorities. Even though there is no legal requirement for developing management plans for special protected areas (SPAs), the Ministry of Environment and Tourism expects all state SPAs to have management plans and this process is ongoing.

*Budgetary constraints are common in State-funded protected area administrations (PAAs), which cannot retain and use revenues from entrance fees.* There is no legal requirement for land fees to be allocated for the maintenance and management of protected areas.

*The current human, technical, operational and financial capacities are not sufficient, given the tasks determined by the current policy framework on biodiversity.* Seven officers of the Protected Areas Management Department of the Ministry of Environment and Tourism being responsible for effective management of the state SPA system, or 337 rangers being responsible for surveillance and law enforcement over the territory of 24 million ha, are clearly not enough. Without enhancement of the current capacities, the implementation of state policies related to biodiversity and protected areas, as well as the related achievement of SDG Targets 15.1, 15.4 and 15.5, might simply not be feasible.

*Due to a considerable number of gaps and shortcomings, the 1994 Law on Special Protected Areas is currently under revision.* In addition, a new programme on SPAs is to be developed in place of the 1998 National Programme on Special Protected Areas. The new programme is to address the planned expansion of the state network of protected areas and improve the management of protected areas.

### Land management

*In 2015, around 76.8 per cent of the total territory was degraded to some degree, with 24.1 per cent slightly degraded, 29.8 per cent moderately degraded, 16.8 per cent severely degraded and 6.1 per cent very severely degraded.* The severely and very severely affected areas include dry and semi-desert lands of the Lake Uvs Basin, the Great Lakes Depression, and Dundgobi and Dornogobi Aimags.

*Most land degradation occurs on rangeland. The area of rangeland had decreased from 123.6 million ha in 1987 to 112.2 million ha in 2016. Meanwhile, the livestock population had increased by 2.7 times, from 22.741 million head in 1987 to 61.549 million head in 2016.* Consequently, the density of livestock increased from 18 head per hundred ha in 1987 to 54 head per hundred ha in 2016, putting increased pressure on the rangeland. Along with the increase in the livestock population, the composition of livestock had changed: the share of goats has increased from 19.3 per cent in 1987 to 42.1 per cent in 2015. At the end of 2015, about 63 per cent of rangeland was severely overgrazed.

*Apart from overgrazing, the pressures on rangeland from human activities include mining, unpaved multitrack roads and urbanization.* Notwithstanding this pressure, Mongolia lacks a law for regulating the use of rangeland; it has remained in a draft version for a number of years.

*The Government has set ambitious targets to restore not less than 70 per cent of degraded land and decrease the area of desertified land to 60 per cent of total territory by 2030, in line with SDG Target 15.3.* It has advanced the legal and policymaking framework through the adoption of the 2012 Law on Soil Protection and Desertification Prevention and the 2010 National Action Programme to Combat Desertification, covering the

period 2010–2020. However, practical implementation of the envisaged policies faces challenges in view of limited financial resources and the inadequate level of institutional coordination.

*Mongolia's network for monitoring land degradation and desertification consists of 1,500 points throughout the country.* The information on three land degradation neutrality (LDN) indicators (i.e. land cover and land cover change, land productivity, and carbon stocks above and below ground) is currently not collected.

### Forestry and environment

*About 18.45 million ha are considered forest land as of 2016, representing 11.8 per cent of the country's total area. Of this, only 12.28 million ha, or 7.85 per cent of the country's territory, are actually covered by forests.* Unstocked forest area (5.63 million ha) refers to areas that have been deforested due to various disturbances, such as forestry and/or non-forestry operations, overgrazing, overexploitation for fuelwood and timber, repeated fires and attacks by insects and diseases. The 2016 Mongolia Sustainable Development Vision 2030 sets the target of increasing the area of forest cover to 9 per cent of the country's total territory by 2030.

*The Multi-Purpose National Forest Inventory (2014–2016) has shown that the major part of the Mongolian boreal forest is overmature, with 74.07 per cent of forest stands classified as mature or overmature.* Consequently, forests are not only less productive but also more prone to fires and pest attacks and less resilient to climate change. The result is forest degradation and, ultimately, deforestation. More active forest management of mature and overmature stands, which would not only improve the overall forest condition but also create jobs and income in rural areas, is lacking.

*There are no recent data available on the percentage of the forest fund that is inside the SPAs.* According to the Multi-Purpose National Forest Inventory and ECE estimates for saxaul forests, to date, 3.1 million ha of the forest area, including both boreal and saxaul forests, are located inside SPAs, which corresponds to close to 25 per cent of the total forest area covered by forests but only 1.98 per cent of the country's territory.

*Most of the government funding in the forestry sector is allocated for tree planting (reforestation and afforestation) and pest control.* However, the success and survival rate of the reforestation and afforestation practices are not carefully evaluated and reflected in long-term policy. The funding currently provided to the forestry sector is not sufficient to support more effective forest management with consideration of the potential of forestry to support rural livelihoods.

*The natural forests are in great need of tending and thinning to ensure healthy forest stands, increased growth and resilience to climate change.* However, there is no concept on the rational use of residues from forest thinning and tending activities.

*Mongolia made significant progress towards developing participatory forest management.* The creation of forest user groups has been effective in preventing illegal logging in forests managed by such groups. However, forest user groups are still not regarded as key players in the sustainable management of the country's forests. The legal status of forest user groups is still unclear. They do not have access to financial services. There is no information on the extent to which the management of forests by forest user groups has impacted on deforestation and forest degradation, management of non-timber forest products (NTFPs), wildlife and plant resources, and enhancing carbon sequestration.

### Risk management of natural and technological/anthropogenic hazards

*The number, occurrence, frequency, severity and impact of natural and technological or anthropogenic hazards in Mongolia increased in the period 2000–2016.* The average economic loss caused from natural and technological hazards in the period amounted to 76.0 billion tugriks per year. In particular, in 2010, the economic losses of 534,796 million tugriks amounted to 5.5 per cent of GDP, at 2010 constant prices.

*Since the 1990s, Mongolia has been experiencing rapid rural-to-urban migration and urbanization, which has largely been unplanned and has resulted in many development challenges, including lack of access to basic services and high levels of air pollution during winter in some areas.* Ger districts at the city outskirts are often

situated in flood pathways. Addressing these challenges is crucial for achieving progress towards SDG Targets 1.5, 11.5 and 11.b.

*Government officials are well aware of the importance and interdependence of the Sendai Framework for Disaster Risk Reduction (DRR) 2015–2030, the Paris Agreement on Climate Change and the 2030 Agenda for Sustainable Development, which are seen as the drivers of the national development agenda.* There is a good understanding of the interdependence of work on disaster risk management (DRM), climate change adaptation and sustainable development, but practical implementation of these linkages and institutional coordination encounter difficulties.

*There are multiple challenges faced by the DRM system as far as preparedness, response and recovery planning are concerned.* Emergency preparedness and response capacities are more developed at the national level. At the local level, international organizations and NGOs support government efforts and provide technical assistance with emergency response services. Effective coordination of the activities at the national and local levels to optimize the use of available funds and resources is among recurrent challenges.

*The majority of institutions and professionals, at all levels of administration (from central to local), have a good understanding of disaster and climate risks.* Various technical institutions are formally mandated for data collection and forecasting. However, only in a few sectors has risk assessment eventually been conducted.

*Three cities (Darkhan, Erdenet and Ulaanbaatar) have officially joined the global campaign "Making Cities Resilient: My City is Getting Ready".* This means that they have integrated DRR into local development policy and urban action plans and work to ensure effective implementation. There is no information on other local governments that have adopted and implemented local DRR strategies.

### Health, food safety and environment

*During the last two decades, the health status of the population improved.* However, great differences in health indicators are observed between regions and aimags (provinces). Since 2000, the lowest life expectancy values are observed in Dornod Aimag (58 years in 2000, 63.9 years in 2010 and 68.63 years in 2016) and Khuvsgul Aimag (59 years in 2000, 63.6 years in 2010 and 66 years in 2016).

*In recent years, both ambient and indoor air pollution have become among the most pressing environmental health problems.* The annual $PM_{2.5}$ air pollution concentration (average nearly 70 $\mu g/m^3$) in Ulaanbaatar is higher than the Mongolian Air Quality Standard (25 $\mu g/m^3$) and the WHO Air Quality Guidelines (10 $\mu g/m^3$). In 2016, a UNICEF-funded assessment of hygienic and sanitary conditions and indoor air quality in schools showed that the average $CO_2$ concentration in the sampled schools was 1.6–1.8 times higher than the approved standard. The same study indicated that the $PM_{2.5}$ concentration was 3.1–10.05 times higher in sampled schools than the national standard on air quality.

*The 2017 National Environmental Health Programme designed for the period 2017–2020 prioritizes work to reduce health impacts from air, water and soil pollution, and from chemicals.* Several other environmental-health-related programmes exist, but their implementation at aimag and local level and their final assessment are not available. The priorities and the overarching strategy in environmental health are not defined. There is a lack of thematic action plans such as action plans on asbestos, indoor air quality and environmental noise.

*Knowledge on the impact of environmental factors on population health is limited to specific media, such as air pollution, but the impacts on health of asbestos, noise, chemicals and anthropogenic activities are not documented.* Databases on dangerous substances (chemicals, hazardous waste, asbestos, lead, radon) and on their emission and locations are not established. Consequently, exposure of the population to these contaminants and their impact on health are not defined and it is difficult to prevent population exposure.

*Asbestos is still in use.* There are no standards for asbestos exposure and no policy for detection of asbestos in buildings before demolition. Asbestos exposure and related diseases are not monitored or registered.

*Mining activities have increased during the last two decades, which has had an impact on the environment and on the health of the workers, the population and livestock.* The population in mining areas is subject to the

cumulative impact of mining activities on air, soil, water, animals (livestock) and, consequently, their health. Health hazards related to mining include dust-related respiratory diseases and chemical poisoning.

*The country is committed to ending the use of mercury in medical materials.* The Mercury-free Hospital Initiative was successfully rolled out. In 2012, 14 hospitals were announced to be mercury free.

*Access to good quality, safe water in schools and kindergartens is an issue, especially in remote areas.* Several local actions are performed by national and international organizations to ameliorate this situation, but they are not replicated across the country.

# *ASSESSMENT, CONCLUSIONS AND RECOMMENDATIONS*

## Chapter 1: Policymaking, legal and institutional framework

*Assessment*

The country has a well-developed planning system defined by the 2015 Law on Development Policy Planning, with clear requirements for monitoring the implementation of development policy documents. Existing policy documents are well linked to each other and largely consistent in terms of goals, targets and objectives set. Governmental officials exhibit good knowledge of the policy documents.

Green development is a clear policy objective, enshrined in the key national visionary document, the 2016 Mongolia Sustainable Development Vision 2030, as well as in the specifically green-economy-oriented 2014 Green Development Policy. A weak point of the planning system, especially from the environmental perspective, is the non-application of the SEA tool for evaluation of environmental impacts of future sectoral policies.

Mongolia is well on track with the work on implementation and monitoring of the SDGs. The Government has designed the 2016 Mongolia Sustainable Development Vision 2030 as a framework policy document for implementation of the SDGs. It has assessed the availability of indicators. High levels of ownership of the SDGs among governmental officials is an important achievement. However, the institutional framework for coordination of SDGs implementation and monitoring still needs to be operationalized.

Since 1987, Mongolia has developed an extensive legal framework on environmental protection. The environmental legislation has developed in a stable way and is largely consistent and coherent. Integration of environmental requirements into sectoral legislation is taking place and there are opportunities to further strengthen such integration on the basis of the recently adopted 2014 Green Development Policy and 2016 Mongolia Sustainable Development Vision 2030. However, implementation of environmental legislation is often delayed, with delays occurring in particular in the development and adoption of subsidiary legislation. Furthermore, enforcement of environmental laws and environment-related provisions in sectoral legislation often represents a serious challenge.

The stability of the national environmental authority, in particular its functioning since 1987 at the ministerial level, has been a positive factor for consistent development and implementation of environmental policies and legislation, and has facilitated the integration of environmental considerations into sectoral policies and legislation. One of the key issues, however, is staff turnover due to frequent changes of government. Vertical coordination between the environment and tourism departments at aimag level and the Ministry of Environment and Tourism is functioning reasonably well.

The establishment of GASI in 2003 has allowed the separation of the policymaking and regulatory function from the control and enforcement function. Positive outcomes of the new system include more efficient use of resources and strengthening of the links between thematic inspectors. However, the insufficient level of cooperation between GASI and the Ministry of Environment and Tourism is a weak link in the new system.

*Conclusions and recommendations*

<u>Implementation and monitoring of the SDGs</u>

The National Development Agency (NDA) is entrusted to coordinate the work on SDGs implementation and monitoring. The National Committee on Sustainable Development under the Prime Minister is envisaged to be a high-level political body to guide the national efforts towards achievement of the SDGs in the context of the 2030 Agenda for Sustainable Development. The composition of the Committee was last renewed in January 2017;

however, as of November 2017, the renewed Committee has never met. In the State Great Khural, under the Standing Committee on Social Policy, Education, Culture and Science there is a Subcommittee on the SDGs, the members of which are parliamentarians.

The Government undertook an assessment of the availability of globally defined indicators, which showed that 157 indicators are not available in the country. The Government is still in the process of defining the national targets and indicators. Some national targets are included in the 2016 Mongolia Sustainable Development Vision 2030, but others are still to be formulated and mainstreamed into sectoral policies.

Governmental authorities, including sectoral ministries and public institutions, demonstrate an impressive awareness of the SDGs, which is not yet the case with non-governmental stakeholders.

*Recommendation 1.1:*
*The Government should:*

*(a) Operationalize the National SDG Committee under the Prime Minister;*
*(b) Proceed with setting up aspirational and measurable national targets;*
*(c) Ensure that SDGs are integrated into future subnational development policy documents, and in future sectoral policy documents by aligning the national sectoral policy objectives with the SDGs;*
*(d) Seek guidance from the international organizations and institutions on enhancing the availability of data for SDG indicators and promote the sharing of experience with other countries on this issue;*
*(e) Continue raising awareness on the SDGs with an emphasis on non-governmental stakeholders and with particular focus on local communities;*
*(f) Ensure the regular preparation of reports on SDGs implementation.*

Strategic environmental assessment

The 2012 Law on Environmental Impact Assessment made SEA mandatory for national, regional and sectoral policies, and development programmes and plans, which may have an adverse impact on the environment, society and human health. In 2013–2014, subsidiary legislation on SEA was adopted. However, as of mid-2017, no SEA has ever been done. Although some training was conducted by the Ministry of Environment and Tourism, understanding of the SEA instrument among the line ministries is poor. The lack of SEA of sectoral policies, programmes and plans prevents the systematic, coherent and comprehensive integration of environmental measures and requirements into sectoral policies. No responsibility for failure to initiate and conduct an SEA is envisaged by the Law. Neither the Law, nor subsidiary legislation specifically define the sectors in which policies, programmes and plans are subject to SEA. The Law does not provide for the participation of affected countries and the public in affected countries in SEA procedure.

*Recommendation 1.2:*
*The Government should:*

*(a) Ensure that SEA is conducted for all national, regional and sectoral policies, and development programmes and plans, in accordance with the requirements of the 2012 Law on Environmental Impact Assessment;*
*(b) Conduct training to raise awareness about SEA among the line ministries;*
*(c) Develop a list of sectors in which policies, programmes and plans are subject to SEA, taking into account available international practice;*
*(d) Revise legislation in order to provide opportunities for the participation of affected countries and the public in affected countries in the SEA procedure.*

Horizontal coordination

A number of mechanisms for horizontal coordination on the environment and sustainable development exist at the national level, e.g. the National Committee for Reducing Air Pollution and National Water Committee. Interministerial committees or councils are often created to address issues within the competence of several ministries. However, few coordination bodies incorporate other stakeholders (NGOs, businesses, academia) along with governmental bodies, organizations and institutions. Little information about the activities of such bodies is

made available to the public. The effective functioning of such bodies is impeded by the frequent changes of government, requiring renewal of the composition of such bodies. As a result, some bodies do not hold regular meetings. Strengthening the mechanisms for horizontal coordination on the environment and sustainable development is crucial for achievement by Mongolia of Target 17.14 (Enhance policy coherence for sustainable development) of the 2030 Agenda for Sustainable Development.

*Recommendation 1.3:*
*The Government should strengthen horizontal coordination on environment and sustainable development by:*

*(a) Reviewing the approach to the composition of interministerial committees and councils in order to base their membership on functional titles;*
*(b) Ensuring regular meetings of interministerial committees and councils;*
*(c) Making meeting reports of such interministerial committees and councils publicly available;*
*(d) Increasing stakeholder participation in such interministerial committees and councils.*

Legal and policy framework for the mining sector

In recent years, the Government made efforts to integrate environmental requirements into the legal and policy framework on mining. The 2009 Law on Prohibition of Mineral Exploration and Exploitation in Run-off Source Areas, Protection Zones of Water Bodies and Forested Areas and the 2014 amendments to the Law on Minerals represent positive steps in the direction of decreasing the environmental impact of mining and making mining better serve the interests of local people. The Regulation on Extraction of Minerals from Small-scale Mines provided the legal framework for artisanal and small-scale mining in permitted sites and was replaced with an improved version (2017 Government Resolution No. 151) that places a stronger focus on environmental rehabilitation of land after artisanal mining activities.

Nevertheless, there are still a number of deficiencies. The EIA is conducted late in the permitting process – after the issuance of the special mining licence, though before the issuance of the permit to start mining operations. The mandatory agreements between mining companies and local authorities in order to protect the environment, create infrastructure for mining operations and create workplaces are not publicly disclosed and there are concerns about the selection of priorities in such agreements. The technical requirements of the Regulation on Extraction of Minerals from Small-scale Mines (such as the limits on the area to be used by cooperatives and limitations on the number of areas within the territory of one soum) make the functioning of cooperatives of artisanal miners difficult. Implementation of legislation on the restoration of land affected by mining represents a huge challenge.

The current policy documents focus on establishing a favourable investment environment for the mining sector, improving Mongolia's competitiveness in the international minerals market and creating a national processing industry for mined products. The environmental focus of the current policy documents related to mining is less pronounced. There is no policy document that would specifically address the abandoned and damaged mining areas and their rehabilitation. There is no policy document that would specifically target the creation of opportunities for artisanal miners to switch to other areas of employment.

*Recommendation 1.4:*
*The Government should:*

*(a) Improve the mechanism of agreements between mining companies and local authorities and increase its transparency;*
*(b) Revise the permitting process in the mining sector to ensure that outcomes of EIA are meaningfully taken into account;*
*(c) Ensure meaningful participation of stakeholders in decision-making process on mining projects;*
*(d) Revise the legal framework for artisanal and small-scale mining in order to ease the establishment and operation of artisanal miners' cooperatives;*
*(e) Develop policies to create opportunities for artisanal miners to switch to other areas of employment;*
*(f) Develop an action plan on rehabilitation of abandoned and damaged mining areas;*
*(g) Ensure systematic data collection and assessment of impacts of the mining sector on the environment.*

Environmental inspection authorities

The General Agency for Specialized Inspection (GASI) under the Prime Minister was established in 2003 as an independent agency bringing together various thematic inspections, including environmental inspection. The environmental inspectors at aimag level are appointed by GASI upon consultation with the aimag governor. They receive instructions from and report to GASI. However the environmental inspectors at soum level are not subordinated to GASI. The environmental inspectors at soum level are appointed by the soum governor, are paid from the soum government's budget and report to the soum governor (and to the relevant aimag specialized inspection department). The dependency of soum environmental inspectors on soum governors is a clear drawback of the current system.

*Recommendation 1.5:*
*The Government should ensure the independence of environmental inspectors at soum level by:*

*(a) Making appointment and dismissal of environmental inspectors at soum level be by GASI upon consultation with the soum governor;*
*(b) Bringing environmental inspectors at soum level under the payroll of GASI;*
*(c) Enhancing the reporting by environmental inspectors at soum level to GASI.*

Institutional memory

One of the key issues for the Ministry of Environment and Tourism is staff turnover. In recent years, due to frequent changes of government (on average, every 18 months), most staff at both senior (minister, vice-minister, state secretary) and managerial (heads of departments and divisions) levels were replaced with every change of government, impeding the consistent development and implementation of policies on the environment and green development and destabilizing the institutional memory of the organization.

*Recommendation 1.6:*
*The Ministry of Environment and Tourism should give the opportunity to its staff to build experience in their specialization while remaining in their post, and establish institutional operational memory by creating an information system containing existing and archived data and information.*

**Chapter 2: Regulatory and compliance assurance mechanisms**

*Assessment*

Overall, it can be seen that most of the legal and institutional arrangements are in place to support regulatory and compliance assurance mechanisms. The legal framework is comprehensive, though it suffers from continual minor amendments. The limited number of staff in the Ministry of Environment and Tourism is a constraint on regulatory and compliance assurance activities.

The licensing and permitting system is broad, though it has important gaps, notably regarding air emissions and wastewater discharges. The EIA procedures are comprehensive, though the quality of EIA documentation and the effectiveness of the procedures are questioned by the public. The addition of SEA, cumulative impact assessment and, more recently, health impact assessment, is welcome, as is the introduction of environmental auditing; experience is now needed. Companies also need encouragement to apply voluntary instruments, particularly environmental management systems, that would benefit their businesses as well as the environment and society.

The EIC is potentially an important mechanism for providing information to the public and thus increasing public confidence in the measures being taken by the Government and the private sector to protect the environment. However, there are substantial and important gaps in the datasets that are available and in the scope of the information covered. Because of the gaps, the EIC cannot be used as a management tool by the Ministry of Environment and Tourism and GASI at present.

*Conclusions and recommendations*

Permitting

The pace of revision of permit and licence legislation creates a lack of transparency and understanding, including within the responsible authorities, and without regard to their capacities. Some implementing regulations are absent or incomplete, leading to some gaps in permitting.

*Recommendation 2.1:*
*The Ministry of Environment and Tourism should:*

*(a) Ensure that the legislation and implementing regulations for air pollution and wastewater permitting are complete;*
*(b) Fulfil its responsibilities for permitting of air pollution from stationary sources.*

Environmental impact assessment criteria and procedures

Mongolia has accumulated extensive experience with EIA procedures. However, the EIA procedures are not seen by all parties as an opportunity to improve projects and their sustainability and efficiency, but as an administrative hurdle. EIA in practice is undermined by poor implementation by licensed entities and ineffective oversight. Public confidence in the EIA system is low, with a common perception that EIAs are frequently "copied and pasted" and that the quality of assessment is inadequate. The high number of entities licensed to undertake a detailed EIA – and perceived problems with quality – bring into question their experience and competence. The Professional Council on EIA, which should address the problems of quality in both licensed entities and the EIAs they produce, lacks independence. NGOs are not included in the Professional Council on EIA and in the review of current licensed entities carrying out detailed EIA. The highly demanding workload of Ministry staff precludes thorough examination of each detailed EIA report. High turnover of staff in the Ministry presents a serious challenge. A cumulative impact assessment procedure is envisaged by the legislation but its practical application has so far been limited.

*Recommendation 2.2:*
*The Ministry of Environment and Tourism should:*

*(a) Undertake a review of the criteria and method for licensing entities to undertake detailed EIA;*
*(b) Commission an independent audit of the currently licensed entities to verify their qualifications, experience and quality of work, and publish the results;*
*(c) Seek additional staff resources, or funds for the use of qualified external expertise, to support more thorough evaluation of the quality of EIA documentation at both the general and detailed EIA stages;*
*(d) Examine options to ensure the transparency and independence of the Professional Council on EIA with, as a minimum, the representation of NGOs on the Council, but also the possibility of introducing an independent EIA commission;*
*(e) Reach out to developers to promote the value of a well-conducted EIA, in terms of both better projects and improved public relations;*
*(f) Proactively apply the cumulative impact assessment procedure.*

Environmental impact assessment in a transboundary context

Mongolia does not have a legal framework for EIA in a transboundary context. Its experience with the transboundary EIA has been limited to a pilot exercise conducted in 2014. The country does not benefit from using the EIA instrument for consultations with neighbouring countries on planned development projects that might have adverse transboundary impacts on the environment.

*Recommendation 2.3:*
*The Ministry of Environment and Tourism should:*

*(a) Revise legislation in order to include the procedures for EIA in a transboundary context;*

*(b) Continue to learn from the international experience and good practices in applying EIA in a transboundary context, including those available in the framework of the ECE Convention on Environmental Impact Assessment in a Transboundary Context.*

Alternative land rehabilitation

Opinions about how biodiversity offsetting and alternative land rehabilitation actually work differ among governmental officials and international and local NGOs and activists. NGOs report a lot of confusion over the implementation procedures for biodiversity offsetting and the lack of capacity among local authorities to monitor the implementation of offsetting projects. The Ministry of Environment and Tourism recognizes that guidelines or procedures for biodiversity offsetting and rehabilitation of alternative land are still insufficient.

*Recommendation 2.4:*
*The Ministry of Environment and Tourism should develop procedures for and guidance on alternative land rehabilitation as part of biodiversity offsetting, including on timescales, enforcement and whether the legal provision has retrospective effect.*

Environmental audit

The introduction of environmental audit in 2012–2013 was an important addition to the environmental management framework, but experience is limited to date.

*Recommendation 2.5:*
*The Ministry of Environment and Tourism should:*

*(a) Revise legislation in order to include sanctions for non-compliance with the requirement to carry out environmental audit;*
*(b) Reach out to companies to promote the value of a well-conducted environmental audit, particularly in terms of operations that are more efficient and of lower risk;*
*(c) Coordinate the inspection and review of environmental audits with GASI.*

Data on regulatory mechanisms

The EIC, managed by the Information and Research Institute of Meteorology, Hydrology and Environment under NAMEM, is a powerful tool for the sharing of information with the public, but that information is incomplete and data present are often contradictory. Environmental management plans are not being published on the Ministry's website as required by the Government and ministerial resolutions and as needed for public monitoring of development activities. Current data management prevents the Government and the public from benefiting fully from the information gathered. Comprehensive environmental information would improve the Ministry's ability to provide environmental protection and support everyone in enforcing legislation and permits.

*Recommendation 2.6:*
*The Ministry of Environment and Tourism and the National Agency for Meteorology and Environmental Monitoring should:*

*(a) Review how data are shared between them, including mechanisms and timing, to ensure that data is complete and up to date, covering the full range of permits and licences, self-monitoring data, audits and emissions and discharges, and in sufficient detail, and ensure their publication online;*
*(b) Ensure that EIA documentation, including environmental management plans, are published online in accordance with the legislation;*
*(c) Establish procedures to enable the Ministry to access data in the Environmental Information Centre in such a way as to extract management-relevant information, including for policy review.*

Provision of information to the Extractive Industries Transparency Initiative

EITI Mongolia offers a structure for transparency that could give confidence to foreign investors in the fairness of licensing, which can give a solid framework for responsible mining. The structure provides access to much

valuable information, but there are important gaps in the data provided by the responsible authorities. The Government's commitment to the EITI is central for progress in encouraging companies to adopt sustainable practices and integrate sustainability information into their reporting cycles in line with SDG Target 12.6.

*Recommendation 2.7:*
*The Ministry of Environment and Tourism and the Ministry of Mining and Heavy Industry should ensure the free flow of relevant information to EITI Mongolia, including information on receipts to a special account for mining rehabilitation funds, petroleum licences, the date of application for mining licences and the reasons for and conditions on the numerous licence transfers.*

Compliance promotion and self-monitoring

The adoption of environmental management systems has progressed lately, but so far very few companies have been certified in accordance with MNS ISO 14001 on environmental management systems. Impediments to the broader uptake of the standard include organizational capacity and the cost and the time to complete the certification process. Given the SDV 2030 targets to increase fivefold the number of companies possessing a certificate in the period 2021–2025 and tenfold in the period 2026–2030, current government efforts to promote the standard are not sufficient. No systematic effort is applied by the Government to promote resource efficiency and cleaner production among the business community. A standard on corporate social responsibility (MNS ISO 26000:2012) has been approved, but the practice is highly variable. Overall, it is difficult to see that the Government is encouraging sustainable practices by large and transnational companies, which will be crucial for Mongolia's achievement of SDG Target 12.6 (Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle).

With regard to implementation of self-monitoring requirements, the overall picture is that larger companies have dedicated units and the quality of self-monitoring reports is better, but SMEs struggle with this.

*Recommendation 2.8:*
*The Government should:*

*(a) Design and implement regular compliance promotion activities, with a focus on awareness-raising and advisory assistance in the adoption of environmental management systems and corporate social responsibility practices;*
*(b) Ensure self-monitoring by companies and the publication of results.*

**Chapter 3: Greening the economy**

*Assessment*

The role of economic instruments in creating effective incentives for changes in the behaviour of polluters has remained modest. The tax rates applied to the four components of the air pollution tax, i.e. raw coal, organic solvents, emissions and vehicles, are too low for achieving this. Moreover, the tax on emissions could not be effectively implemented because the required measurement instruments were not installed. The main purpose of the air pollution tax has been to generate state budget revenue, which was temporarily allocated to the now defunct Clean Air Fund. The water pollution tax was adopted in 2012, but the secondary legislation necessary for its implementation has not been introduced.

In a similar vein, the excise duty on motor fuels has not been used as an instrument for encouraging more rational use of petrol and diesel but, rather, mainly as an instrument for stabilizing the domestic retail prices of these products, given the upward pressures on import costs resulting from the progressive depreciation of the national currency. This entailed excise duties even being reduced to zero in some instances, which has led to considerable losses in government budget revenue. The separate tax on gasoline and diesel fuel is primarily intended to raise state budget revenue. In contrast, the excise duty scheme on imported passenger cars is well designed by imposing higher taxes on older vehicles and by exempting more eco-friendly cars from the tax.

Royalties on mineral resource exploitation are generating considerable revenue for the state budget, which is partly reallocated to support local government budgets and, notably, to the Human Development Fund for the

financing of social security and social assistance measures. It remains to be seen whether the surtax royalty will have the intended effect of creating effective incentives for more domestic processing of mineral resources.

The recognition of natural capital (e.g. ecosystems) as a factor of production and its role in improving the well-being of the population is a key feature of a green growth framework. Mongolia has developed and applied methodologies for assessing the monetary value of natural resources (such as forest and water), which are used as benchmarks for the calculation of environmental damage compensation. These assessments have been partly revised and led to substantial increases in the values of these natural assets. However, the ways and means of establishing these asset values are not very transparent and therefore difficult to appreciate. The same holds for the fees imposed on the use of the numerous specific types of natural resources (timber, flora, fauna), which are set at the local government level. The valuation of ecosystem services remains a major challenge.

In the area of utility services (water supply and sewerage, municipal waste collection, energy supply), the challenge is to continue the move towards cost-reflective tariffs in order to ensure the rational use of resources as well as the financial viability of service providers. In general, revenues are insufficient for financing operating and maintenance costs, resulting in these services having to rely on subsidies from local and state budgets.

The exploitation of the huge potential for renewable energy remains a major challenge, despite a generous system of feed-in tariffs. The system of support tariffs will create more transparency with regard to the costs for end users of the increasing use of renewable energy sources. There are also some subsidy schemes designed to promote the diffusion of green technologies, but the overall scale of these appears to be limited.

The greening of economic growth is a key goal of the national development policies. Sectoral policies are being revised in line with the 2014 Green Development Policy and 2016 Mongolia Sustainable Development Vision 2030. However, the overall costs of achieving the numerous related targets and measures have not been estimated. Financing of environmental expenditures and related national programmes relies largely on annual state budget allocations and foreign loans and grants. Local governments can use earmarked environment-related revenues for financing environment protection measures, but actual expenditures have remained significantly below the level of earmarked revenues, pointing to the diversion of funds to non-environmental purposes. There is a scarcity of information on investments in municipal infrastructure such as waste collection and disposal, as well as water supply and sewerage services, notably, wastewater treatment.

Resources allocated to the Environment and Climate Change Fund for the financing of national environment-related programmes have remained quite small, which narrowly circumscribes the Fund's impact on promoting environmental protection. There is no annual reporting on activities financed by the Fund. The need for stringent fiscal policy has adversely affected the annual state budget allocations for environmental protection in recent years. Against this background, a Clean Air Fund, established in 2010 and designed to finance urban air pollution reduction measures, was abolished in 2015.

In the mining sector, which is the mainstay of the Mongolian economy, companies are obliged to ensure adequate rehabilitation of affected areas after the cessation of mining activities. There is lingering uncertainty of the extent to which the annual funds that companies have to set aside for this purpose, years before a mine closure, are sufficient for financing the land reclamation and biological rehabilitation measures in such a way that they are in line with mining industry best practice.

There is only limited involvement of PPPs in financing and operating municipal services in areas such as waste management and water supply and sewerage services, reflecting the adverse impact of regulated (low) service fees on the commercial viability of PPP projects. In addition, the capabilities of local governments to engage in such projects are, in general, still weak, pointing to the need for effective oversight of such projects.

The legal framework for public procurement has been improved to be more in line with best international practices. However, to date, there are no legal provisions for including environmental and social criteria ("sustainable procurement") in the tender documents for goods and services to be bought.

The analysis of statistics on environmental expenditures is circumscribed, not only by a shortage of relevant data but also due to fact that Mongolia has not yet adopted a comprehensive methodology for measuring and reporting on environmental expenditures, such as the international Classification of Environmental Protection Activities

(CEPA). A related statistical challenge is the measurement of progress towards a green economy based on indicators such as material productivity and, more generally, the extent to which economic growth is achieved at the expense of a deterioration of environmental quality.

*Conclusions and recommendations*

Environment-related taxes and subsidies

The "polluter pays" principle is not effectively applied in Mongolia. The air pollution tax is more symbolic, its main purpose being to generate government revenue. The implementation of this instrument has also been hindered by the lack of adequate measurement instruments for the emission of pollutants. The water pollution tax has been awaiting the adoption of the secondary legislation required for its implementation. Environment-related taxes such as excises on petrol and diesel have not served any environmental protection purpose. In addition, more recently, in anticipation of social pressure, these excises have not even generated significant government revenue, due to a near general zero-rate policy. More generally, Mongolia has been pursuing a policy of providing fossil-fuel subsidies,also covering the use of coal, which should be reformed in line with SDG Target 12.c to prevent wasteful consumption of these resources.

*Recommendation 3.1:*
*The Government should:*

*(a) Ensure that taxes on pollution provide effective incentives for changes in behaviour of polluting companies;*
*(b) Adjust the duty rates on gasoline and diesel as well as the separate tax on these products so that they help promote fuel saving behaviour and the import and use of cleaner fuels;*
*(c) Consider the reform of coal subsidies provided to industry and households.*

Charges for use of natural resources

The charges for use of natural resources (forests, plants, hunting, water) are mainly derived from an assessment of their monetary value, taking into account a range of economic and ecological indicators, and are not adjusted for inflation. These base values are mainly designed for gauging the size of environmental damage caused to these resources and for setting the level of compensation to be paid by those violating the established legal standards. User fees, in turn, are established as a percentage of the monetary base values, which are, within defined limits, left to local governments.

*Recommendation 3.2:*
*The Government should:*

*(a) Regularly adjust the established resource base values;*
*(b) Revise the existing methodology for assessing the monetary value of these natural resources with a view to regularly adjusting these to inflation.*

Utility services

The utility services sector in Mongolia faces the challenge of ensuring the financial sustainability of its operations given that existing tariffs are not cost reflective. This makes the sector dependent on subsidies and transfers from local government and state budgets. The general feature is a lack of adequate funds for maintenance and renewal of the infrastructure. Tariffs for water supply and energy do not provide sufficient incentives for rational use of these resources. Tariffs that are insufficient for recovering costs are also a barrier for greater private sector involvement in the provision of these services.

*Recommendation 3.3:*
*The Government should:*

*(a) Develop and apply tariff methodologies that focus on cost recovery;*
*(b) Support the installation of meters (mainly for water) and improve bill collection rates;*
*(c) Introduce a separate landfill tax on the discharge of municipal waste;*

*(d) Develop targeted social support measures to address affordability constraints for poor persons.*

Funding for environmental protection

Mongolia has adopted a green development agenda as well as separate national programmes for the main environmental domains, such as water, forests and protected areas. Funding of these agendas and programmes mainly relies on year-to-year allocations from the state budget and on foreign loans and grants. Local governments can rely on their own earmarked revenues for financing environmental expenditures – but the actual expenditures have fallen increasingly short of the mandatory funds that they should spend. More generally, total environmental expenditures by the government sector appear to be rather small, raising doubts about the effective role that the public sector can play in the pursuit of the green development agenda.

*Recommendation 3.4:*
*The Government should ensure that:*

*(a) Resources allocated to the environmental sector are commensurate with the overall development agenda of the country, in particular the goals and actions defined in the Mongolia Sustainable Development Vision 2030, the 2014 Green Development Policy and the national programmes for the main environmental domains;*
*(b) Priorities are effectively set in a context of limited public resources;*
*(c) Local governments make effective use of all the funds earmarked for spending on environmental and nature protection.*

Rehabilitation of mining sites

The mining sector is the mainstay of the Mongolian economy; however, mining activity is also a major source of environmental pressures. Mining companies are obliged to build up financial reserves to ensure adequate rehabilitation/reclamation of mining sites after their closure. But there are lingering concerns over whether these funds are sufficient for financing the required works in such a way that they meet existing international best practice in the mining sector.

*Recommendation 3.5:*
*The Government should ensure that all mining enterprises, notably the State-owned entities, have developed a complete and adequate rehabilitation plan that is based on a realistic assessment of costs and that their financial statements include rehabilitation costs in accordance with the International Financial Reporting Standards*.

Statistics on environmental expenditure and green growth

The NSO produces and disseminates a wide range of environment-related statistical data. Among these, statistics on environmental expenditures in the government sector are lacking detail and completeness. Moreover, the usefulness of these statistics is reduced, due to the lack of sufficient methodological descriptions. Some areas, such as expenditures on air pollution control and reduction measures, are not covered at all. Also, environmental expenditures in the enterprise sector, such as the mining industry, are not covered. The NSO has so far not adopted an international classification of environmental expenditures (such as CEPA), which would facilitate the international comparability of national statistics. Another challenge is to develop statistics for the measurement of green growth indicators, which are designed, inter alia, for the purpose of gauging improvements in environmental and resource productivity and the extent to which economic growth has been decoupled from environmental degradation (SDG Target 8.4). First steps in this direction have been made, with the approval of the NSO in July 2017 of 38 green development indicators.

*Recommendation 3.6:*
*The National Statistics Office should:*

*(a) Develop a statistical information system for environmental expenditures based on the existing international standard, viz. the Classification of Environmental Protection Activities and Expenditures (CEPA);*

*(b) Develop data collection and estimation methodology for indicators designed to measure progress made towards the greening of economic growth and disseminate the outcomes to policymakers and decision makers;*
*(c) Build the capacities of central and local government authorities to analyse and use statistical data for evidence-based policymaking.*

**Chapter 4: Environmental monitoring and information**

*Assessment*

The environmental monitoring network does cover the core environmental themes; however, it requires strengthening and some indicators are also lacking in the collection and reporting. In particular, there is no noise and vibration monitoring. The last nationwide assessment of species of different biomes was carried out in 2010, and was not repeated in 2014, due to the budgetary shortages.

A national SoER is produced every two years using key indicators. Information provided by EIC on the environment is readily available and easy to access. However, there is not enough focus on the other two pillars of SEIS, namely, content and cooperation. With regard to content, there is a need to improve data quality and collection from soum to aimag to national levels. There is also a need to strengthen the cooperation between the Ministry of Environment and Tourism and the NSO to deliver environmental statistics in the context of the work to implement SEEA and in support of the follow-up and review required for the 2030 Agenda for Sustainable Development, Paris Agreement and Sendai Framework.

*Conclusion and recommendations*

Resources for environmental monitoring

Environmental monitoring would benefit from an increase in human and financial resources to strengthen the monitoring network. In particular, the regular nationwide assessment of species was not repeated after 2010 and there is no noise and vibration monitoring. NAMEM laboratories lack capacity; some laboratories at aimag level lack accreditation for key parameters.

*Recommendation 4.1:*
*The Ministry of Environment and Tourism should strengthen the existing environmental monitoring network by:*

*(a) Making available increased financial and qualified human resources;*
*(b) Resuming regular nationwide assessment of species;*
*(c) Developing noise and vibration monitoring;*
*(d) Improving the capacity of laboratories on environment and metrology through further accreditation, new equipment and capacity-building.*

*See Recommendation 11.1.*

Data collection and sharing

There is insufficient capacity to produce and collect data from soum to aimag to national levels. International methodologies, standards and best practices for producing environmental indicators and statistics are not sufficiently applied.

*Recommendation 4.2:*
*The Ministry of Environment and Tourism, in cooperation with the National Statistics Office, should improve data quality, strengthen the use of methods and international standards for data collection, fill data and information gaps and improve the production of indicators and statistics by:*

*(a) Improving inter-institutional cooperation and sharing of data between institutions and through different national levels;*
*(b) Identifying priority data flows and environmental indicators that are required to fill gaps;*

*(c) Building capacity for data collection and data quality control at the soum and aimag levels;*
*(d) Improving natural resources inventories by using IT and GIS-based tools to get stronger, reliable data to populate relevant databases.*

State of the environment report

The Ministry of Environment and Tourism prepares and issues the national SoER every two years. Reports mainly focus on the two years covered, with the exception of the 2015–2016 report, which looked at 30-year trends. The reports are indicator based, but not based on the Driver, Pressure, State, Impact, Response (DPSIR) framework. They do not contain a non-technical summary, but only general recommendations and conclusions at the end of the report.

*Recommendation 4.3:*
*The Ministry of Environment and Tourism should improve state of the environment reporting by:*

*(a) Using the Driver, Pressure, State, Impact, Response (DPSIR) framework in order to be more connected with policy needs;*
*(b) Including a non-technical executive summary in the state of the environment report to better inform stakeholders and decision makers.*

Environmental statistics

The Ministry of Environment and Tourism and the NSO lack the experience and capacity to produce good quality environmental statistics. Good quality environmental statistics is a prerequisite for compilation of environmental indicators, production of high quality state of the environment reports, and the implementation of the System of Environmental-Economic Accounting. They are also required for production of indicators in the follow-up and review of the 2030 Agenda for Sustainable Development. While the international community continues to work to agree on methodologies and standards for Tier III indicators, the Ministry of Environment and Tourism and the NSO could work together to prepare the appropriate surveys for Tier II indicators and move forward with data collection. This work could be done in parallel with implementing SEEA for air emissions, water, forests, wastes and energy.

*Recommendation 4.4:*
*The Ministry of Environment and Tourism and the National Statistics Office should:*

*(a) Develop a roadmap for strengthening environmental statistics in line with the national and international requirements;*
*(b) Implement the 2013 Framework for the Development of Environment Statistics and its Basic Set of Environment Statistics to compile environmental indicators, environment-related SDG indicators and environmental-economic accounting;*
*(c) Provide training to their staff to increase their capacities to produce environmental statistics that are relevant for state of the environment reporting, the SDGs and the System of Environmental-Economic Accounting.*

**Chapter 5: Access to information, public participation and education**

*Assessment*

Access to environmental information and public participation in environmental matters have evolved considerably during the past decade. The Ministry of Environment and Tourism rightfully stands out as a leader in this respect, despite the existing constraints on capacity and resources and the remaining challenges. The sectoral ministries still have to develop specific procedures to provide access to environmental information and ensure public participation in decision-making on environmental matters. Raising the effectiveness of access to environmental information and public participation through revisions to existing legislation on the basis on accumulated experience is the key task for the years to come. Another key challenge to be addressed is the inadequate capacity of all actors, especially governmental authorities at the local level, to ensure implementation and enforcement of existing legislation.

Mongolia has initiated a good process of integrating ESD into the curricula of general secondary education. Consistent and adequate implementation of the new curricula in all schools across the country is now important. Clear successes include such initiatives as eco-schools and the work of the Environment Education Centre, given their effectiveness and impact on advancing EE and ESD. The biggest challenge is the provision of necessary financial resources from the state budget after the winding up of the ESD Project in order to further develop and expand ESD in the country, ensure the training of teachers and build capacity on ESD of relevant governmental officials. The Government's continuous commitment to and provision of adequate support to integrate ESD into formal and non-formal education are prerequisites to the successful development of ESD and the achievement of SDG Targets 4.7 and 12.8.

*Conclusions and recommendations*

Access to environmental information

Overall, the legislative framework regulating access to environmental information is in place and evolving; nevertheless, adequate implementation by both the Government and the public remains a challenge. The Government lacks resources to set up an efficient and effective structure to handle public requests within the deadlines. The current practice and procedures in governmental institutions other than the Ministry of Environment and Tourism in providing environmental information to the public are rather fragmented. The public lacks knowledge both of its rights to information and the procedures provided in the legislation to enable people to exercise those rights and of existing mechanisms established by the authorities that hold environmental information. This is particularly evident in light of the many changes to the legislation and procedures undertaken since 2012.

The Government has made some effort to encourage the disclosure and active dissemination of environmental information by business entities, in particular in the framework of the Extractive Industries Transparency Initiative (EITI). However, these efforts are at their very inception and are not sufficiently visible in sectors other than mining.

*Recommendation 5.1:*
*The Government should:*

*(a) Strengthen implementation and enforcement of the 2011 Law on Information Transparency and Right to Information;*
*(b) Encourage active dissemination and provision of environmental information by sectoral ministries;*
*(c) Promote awareness-raising, knowledge and capacity-development for the public, with the focus on the legally guaranteed rights and procedures to access environmental information, including existing mechanisms to facilitate such access.*

Environmental Information Centre

The EIC, which manages a number of environmental databases, is potentially an important mechanism for providing information to the public. At present, the Information and Research Institute of Meteorology, Hydrology and Environment, operating under NAMEM, hosts the Centre. In 2016, the EIC was downgraded to an Environmental Database Division within the Institute. Strictly speaking, the existing arrangements do not correspond with the amended 1995 Law on Environmental Protection, since the EIC does not function under the auspices of the Ministry.

*Recommendation 5.2:*
*The Ministry of Environment and Tourism should:*

*(a) Take the lead in overseeing the functions and work of the Environmental Information Centre, including raising its status and structure and placing it in premises easily accessible to the public, with a view to extending it to become a comprehensive "one-window" online portal on environmental information;*
*(b) Ensure the quality of data available at the Environmental Information Centre through the establishment of quality assurance and quality control systems.*

*See Recommendation 2.6.*

Public participation

Mongolia is progressing towards developing the legal framework for public participation in environmental decision-making and implementing it in practice. Achievements to date include establishing formal procedures for public participation in EIA, SEA and, more recently, law-making procedures, through the adoption of the 2015 Law on Legislation.

However, numerous challenges remain to ensure effective public participation. These include the insufficient time available for public consultations on planned projects (30 working days) and for public comments on the drafts of laws and secondary legislation (15 days), which do not take into account the specificity of vast territories and the way of life of nomadic communities in the country. Another important challenge is that local authorities (at bagh level) and local NGOs often lack the capacity and knowledge of how to proactively engage the public in consultations. Company representatives in charge of public relations commonly lack the necessary knowledge and skills to ensure an effective consultation process. Mobile phones and local TV channels are insufficiently used as a mechanism to inform the public about public consultations.

To involve the public in preparing laws and policies, the Ministry of Environment and Tourism works closely with the Mongolian Environmental Citizens Council by involving its representatives in the working groups that are established for developing laws, regulations and policies. However, not all civil society organizations are part of the Mongolian Environmental Citizens Council. The Ministry does not provide information on its website about such working groups, their meetings and the outcomes of their work.

NGO representatives are rarely included in the national delegations to international environmental forums and meetings and very seldom are they involved in the preparation of the Mongolian position for these meetings.

*Recommendation 5.3:*
*The Ministry of Environment and Tourism should ensure effective public participation by:*

*(a) Initiating the revision of legislation to extend deadlines for public consultations on planned projects and for public comments on draft legislation;*
*(b) Raising the capacity of local authorities and business entities to enable them to proactively engage the public in consultations on planned projects;*
*(c) Encouraging stronger use of mobile phones and other electronic information tools to provide public access to environmental information and enhance public participation;*
*(d) Encouraging NGO participation in preparing laws and policies among organizations outside the Mongolian Environmental Citizens Council, giving them the opportunity to apply to be directly included in the working groups established for developing laws and regulations;*
*(e) Encouraging NGOs to develop their capacity and accountability;*
*(f) Encouraging participation of NGO representatives in international meetings related to the environment.*

Pressure on environmental activists

Cases of harassment and pressure against environmental activists for their environmental activities still occur. It is not clear what actions are being taken by the Government to prevent such cases from occurring and to ensure proper investigation to avoid suspicion of covering up. In addition to harassment of environmental activists by business companies, there are cases of pressure having been put on environmental activists by the Government.

*Recommendation 5.4:*
*The Government should take measures to prevent pressure being put on environmental activists for their environmental activities.*

Access to courts

Access to the courts for members of the public and NGOs is limited by the resources, skills and knowledge available to them. There are no courts specializing in environmental cases. Judges do not receive training on environmental matters.

*Recommendation 5.5:*
*The Government should:*

*(a) Enforce the provision on exempting public interest claimants from paying the state stamp duty, in accordance with the 2016 Law on Decisions on Administrative Cases in Court;*
*(b) Ensure regular training of judges on environmental matters.*

Aarhus Convention

In 2011, Mongolia expressed its formal interest in acceding to the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention). As of mid-2017, according to the Ministry of Environment and Tourism, accession is not being considered by the Government. However, the solid framework offered by the Convention could assist the country in its efforts to establish transparent and participatory decision-making processes, thereby helping to build a stable and secure society, which, in the long term, could become economically prosperous and environmentally and socially sustainable. Furthermore, it could help Mongolia to further enhance democratic institutions and improve environmental decision-making by consolidating mutual trust and respect between the people and the Government. Moreover, through applying the Convention's principles, Mongolia would send a strong signal to other States, including its trade and development partners, as well as foreign investors and international institutions, of its commitment to effective governance and democracy.

*Recommendation 5.6:*
*The Government should:*

*(a) Seek advisory assistance and capacity-building support from the Secretariat of the Aarhus Convention with a view to acceding to the Convention;*
*(b) Consider acceding to the Aarhus Convention when the necessary implementation capacities are in place.*

**Chapter 6: Implementation of international agreements and commitments**

*Assessment*

The aspiration of being a frontrunner in achievement of the SDGs, greening development policies and participating in MEAs is the main driver for advancing environmental protection in Mongolia. The prompt ratification of recent MEAs, such as the Minamata Convention on Mercury, provides evidence of the political importance that the Government attributes to being an engaged participant in international cooperation in the environmental domain. In environmental domains not covered by global MEAs, the country's progress has been more limited. This is the case, for example, in access to information and public participation in environmental matters.

Implementation and compliance with international obligations remains a challenge, due in part to insufficient human resources and capacity and financial resources in the Ministry of Environment and Tourism. Mongolia is very dependent on the international donor community in respect of technical expertise and financial resources. Effective response to the country's international agreements and commitments requires strengthening capacity and ensuring adequate financial resources for the Ministry of Environment and Tourism, as well as other involved entities, in a way that is consistent with the responsibility of being a party to MEAs.
Bilateral cooperation is a key vector of Mongolian foreign policy and has been particularly fruitful in the field of the environment. The country has been successful in establishing strategic partnerships with other countries, in particular with its closest neighbours and the other countries in the region, to ensure technical and financial support for achieving better environmental performance and standards and enhanced capacity for addressing environmental challenges.

*Conclusions and recommendations*

Capacity, resources and efficient communication

Effective response to international agreements and commitments necessitates strengthened capacity and financial resources in the Ministry of Environment and Tourism in a way that is consistent with the responsibility of being a party to MEAs. Assessment of these needs, which would provide a good basis for matching the obligations and policy goals assumed with sufficient resources, has not been undertaken.

Guaranteeing efficient communication between MEA secretariats and Mongolian national authorities requires that the national focal points transmitted to the secretariats are always updated. Furthermore, there are not always the staff resources necessary to ensure proper follow-up to MEAs and smooth implementation of the obligations they carry.

*Recommendation 6.1:*
*The Ministry of Environment and Tourism should:*

*(a) Undertake an in-depth analysis of the administrative and technical capacity and financial needs of the bodies and units charged with the implementation of the obligations deriving from MEAs;*
*(b) On this basis, prepare an action plan for safeguarding the administrative and technical capacity and financial needs for the implementation of the obligations deriving from global and regional agreements on the environment;*
*(c) Submit urgently to the relevant MEAs, through the proper procedures, communications on the appointment of the new national focal points;*
*(d) Reinforce the number of staff devoted to MEAs, ensuring strengthened teams for MEAs with more intensive activities and reporting requirements.*

Participation in MEAs to which Mongolia is not party

Mongolia's strong involvement in global MEAs has proven to provide a good impetus for developing policy, implementing actions and achieving better environmental performance. Mongolia is party to the vast majority of global MEAs. Nonetheless, a few gaps remain, and ratifying further MEAs would support the country in achieving a more comprehensive framework for protection of the environment. In this regard, accession to the recent Kigali Amendment to the Montreal Protocol is important, to enhance national efforts to protect the ozone layer.

Mongolia is not a party to the two international framework conventions on transboundary water cooperation, the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes and the 1997 Convention on the Law of the Non-navigational Uses of International Watercourses. Participation in these Conventions would demonstrate the country's adherence to the principles and provisions of international water law. Participation in the 1992 Convention would also allow the country to benefit from the opportunities provided by the Convention's institutional platform.

*Recommendation 6.2:*
*The Government should:*

*(a) Proceed with accession to the 2016 Kigali Amendment to the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer planned for 2018 and install the necessary control mechanism;*
*(b) Analyse costs and benefits and consider accession to the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes and the 1997 Convention on the Law of the Non-navigational Uses of International Watercourses.*

Management plans for Ramsar sites

Although huge efforts have been undertaken to fulfil the obligations deriving from the international agreements to which Mongolia is a party, there are a few that still need to be accomplished in the context of the Convention on Wetlands of International Importance especially as Waterfowl Habitat. The designation of Ramsar sites entails certain obligations from the point of view of their management, irrespective of immediate need, supported by the understanding that the existence of such natural values, and in particular their preservation, must be monitored and ensured. Not all designated Ramsar sites in Mongolia have management plans.

*Recommendation 6.3:*
*The Ministry of Environment and Tourism should approve the Ramsar site management plans of Lake Ganga, Lake Buir, Lake Achit and Lake Terkhiin Tsagaan.*

## Chapter 7: Implementation of rio conventions

*Assessment*

Being a party to the Rio Conventions has directly influenced environmental policy in Mongolia for the last almost 25 years. The country has adopted national programmes in all three domains, aligned with the provisions of these Conventions, which represent the main policy implementation frameworks for implementation. The benefits of being a party to the Rio Conventions can also be seen beyond environmental policymaking. The challenges associated with biodiversity, desertification and climate change, and commitments taken in the international context, have been included in cross-cutting national development framework strategies, such as the recent SDV 2030.

Institutional, technical and financial capacities remain the main challenges for the implementation of the Rio Conventions, although to different degrees. Having adequate strategic frameworks has undoubtedly contributed to gaining access to technical and financial support from the international community, but much more needs to be done in all three domains covered by the Rio Conventions. The institutional framework has suffered from instability, with the National Committee to Combat Desertification and the National Climate Committee – both essential for policy coordination – abolished in December 2015.

*Conclusions and recommendations*

Convention on Biological Diversity

Mongolia has undertaken efforts to implement the CBD. The National Biodiversity Programme 2015–2025 is currently the main policy framework, complemented by a vast and somewhat dispersed set of legislation and policy documents relevant for its implementation. Overall, institutional, technical and financial capacity remains the main challenge for the implementation of the CBD. In addition, persistent challenges affecting implementation are associated with pressure on ecosystem services and threats to the country's biodiversity, related with cross-sectoral issues. There is strong collaboration with the NGO sector in the biodiversity domain.

*Recommendation 7.1:*
*The Ministry of Environment and Tourism should continue to pursue implementation of the National Biodiversity Programme, with a view to complying with the CBD and to reach the Aichi Biodiversity Targets, ensuring an effective coordination mechanism among all those relevant for the implementation of the CBD.*

Cartagena and Nagoya Protocols

The legal and institutional framework for implementation of the Cartagena Protocol on Biosafety is generally adequate, although legislation is in need of revision in order to comply with the Nagoya–Kuala Lumpur Supplementary Protocol on Liability and Redress, and financial and human resources are very limited.

Mongolia has not yet identified the Competent National Authority on Access and Benefit-sharing under the Nagoya Protocol. The Ministry of Environment and Tourism is currently coordinating the work on the legal provisions necessary to implement the Nagoya Protocol, in a process involving several ministries and stakeholders. In addition to an adequate legal framework, Mongolia has not yet established an effective coordination structure, involving local communities. Creating the legal and institutional framework to ensure fair and equitable sharing of benefits is of the utmost importance if Mongolia is to achieve Target 15.6 of the 2030 Agenda for Sustainable Development (Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed). The issues of financial resources and capacity-development for implementation of the Nagoya Protocol are highly pertinent.

*Recommendation 7.2:*
*The Government should:*

*(a) Revise legislation on biosafety, in order to provide a response to damage to biodiversity resulting from LMOs and comply with the Nagoya–Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol;*
*(b) Adopt legislation necessary for the implementation of the Nagoya Protocol;*
*(c) Designate a Competent National Authority on Access and Benefit-sharing under the Nagoya Protocol, establishing an effective coordination mechanism among the different institutions that will be involved in the implementation of the Protocol.*

UNCCD

In relation to the UNCCD, the National Action Programme to Combat Desertification 2010–2020 is aligned with the Convention's 10-year Strategy and activities have been taken under all the operational and strategic objectives of the Strategy. The fact that its strategic policy documents are aligned with the main international references on the issue, has facilitated the country's access to technical and financial support to address desertification. However, the dimension of the problem still requires additional efforts as, according to the latest assessments, in 2015, 76.8 per cent of the total area of Mongolia was affected by desertification and land degradation.

*Recommendation 7.3:*
*The Ministry of Environment and Tourism should:*

*(a) Continue using the 10-year Strategy of the UNCCD as the guiding reference for the second implementation phase of the National Action Programme to Combat Desertification and further promote the mainstreaming of desertification, land degradation and drought into sectoral policies;*
*(b) Endeavour to actively engage in ongoing negotiations on the future Strategic Framework of the Convention for the period post-2018, in order to prepare for the necessary future policy planning adjustments;*
*(c) Continue its engagement with activities under the UNCCD, namely, at the regional level, sharing its experience and exploring possible partnerships with international organizations and other countries that can facilitate access to additional technical and financial assistance.*

UNFCCC

The Government has undertaken efforts to develop and implement policies that can contribute to adaptation to the impacts of climate change and is aware of the importance of reducing GHG emissions. The National Action Programme for Climate Change 2011–2021 is an adequate policy framework; however, a national adaption plan is yet to be adopted. Preparation of such a plan is an important element for achievement of SDG Target 13.2 (Integrate climate change measures into national policies, strategies and planning).

Mongolia was one of the frontrunners in ratifying the Paris Agreement. As described in the 2015 NDC, the country intends to mitigate GHG emissions by implementing measures in the energy, industry, agriculture and transport sectors, contingent upon the continuation of international support to complement domestic efforts. Measures are estimated to result in an annual reduction of 7,300 t $CO_2$ eq of emissions in 2030, corresponding to a 14 per cent reduction compared with a business-as-usual (BAU) scenario, excluding LULUCF.

The main challenges for the implementation of the policies and measures that will allow Mongolia to comply with its mitigation target and adapt the most vulnerable sectors to the impacts of climate change are having the necessary financial resources and an effective and sufficiently capacitated institutional framework. Mongolia has benefited extensively from the technical and financial support of the international community and has been able to successfully access mechanisms such as the CDM, JCM and GCF. The second implementation phase of the National Action Programme for Climate Change is currently being prepared, in light of the commitments presented under the 2015 NDC.

A domain so dependent on policy coordination as climate change requires effective institutional coordination mechanisms, which Mongolia currently does not have. Capacity and know-how on GHG emissions monitoring require strengthening. Efforts to improve human and institutional capacity on climate change would assist Mongolia in implementing SDG Target 13.3 (Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning).

*Recommendation 7.4:*
*The Government should:*

*(a) Adopt a national adaptation plan and the Second Phase Implementation Plan of the National Action Programme for Climate Change, aligning them both with the most recent strategies and commitments taken internationally on climate change, namely, the Nationally Determined Contribution;*
*(b) Establish a body specifically dedicated to coordination among line ministries relevant to climate policy, supported by a technical, permanent and sufficiently capacitated structure;*
*(c) Take actions to reduce dependency on international financial resources, guaranteeing the conditions necessary to promote private investment and ensuring the sustainability of capacity-building activities.*

Synergies in implementation

There is no specific mechanism or structure to promote synergies in the implementation of the Rio Conventions. Nevertheless, the main policy frameworks in the three domains directly or indirectly contribute to the coordinated implementation of the three Conventions.

*Recommendation 7.5:*
*The Ministry of Environment and Tourism should continue taking into account the linkages among the Rio Conventions and reflect them in the legal and policy implementation framework of each Convention.*

**Chapter 8: Air protection**

*Assessment*

There are some gaps related to coordination of data collection, processing and disbursement, which, according to the revised 2012 Law on Air, should be a task of the professional office established and supervised by the Ministry. The National Agency of Meteorology and Environmental Monitoring performs these tasks and is also in charge of compiling the national inventory of air emissions.

Being a very important issue for Mongolia, air protection is dominantly managed by high-level administrative bodies, while the involvement of scientific, professional and civil society organizations is marginalized. Government policies are more focused on the capital city, while bad air quality in other regions is not elaborated, which might be caused by the lack of data. The contribution of power plants and ger districts, and resuspension of dust-to-air pollution is also not adequately assessed. There is no regular monitoring or self-monitoring of emissions by major polluters, insufficient air quality monitoring in ger districts and no comparison of air quality data with monitoring data on dust storms or regular analysis of the contents of PM.

The Government realized numerous projects in ger districts, providing clean fuel and improved heating stoves, and plans to support poor communities with incentives and other types of support in order to achieve environmental goals.

Despite the intensive public and government attention to, and significant investment in, air protection, the legal framework in this area does not provide very strict rules, effective fines and functional mechanisms for the application of the "polluter pays" principle.

*Conclusions and recommendations*

Air quality monitoring

Although Mongolia's air quality monitoring network seems robust with 40 monitoring sites (35 operational stations, including six automatic ones, under the National Agency of Meteorology and Environmental Monitoring (NAMEM), plus five automatic stations under the Air Pollution Reduction Department of Ulaanbaatar City), only 11 of them are automatic and located in Ulaanbaatar. Other sampling points are based on the use of passive samplers, mainly monitoring only $SO_2$ and NOx. Taking into account high investments in air pollution reduction, as well as estimation of health-related costs caused by air pollution, the existing monitoring of air quality does not provide enough support for better policy development and monitoring of the effectiveness of implemented

measures. Further efforts to reduce the adverse per capita environmental impact of cities (SDG Target 11.6) require special attention to air quality, through obtaining reliable, accurate, consistent and comparable data on concentrations and emissions of air pollutants among other means.

*Recommendation 8.1:*
*The Government should:*

*(a) Gradually replace obsolete air quality monitoring techniques with a more efficient and less costly organized air quality monitoring network coupled with air quality modelling for locations exposed to similar impacts;*
*(b) Focus on the monitoring on fine particulate matter ($PM_{2.5}$), since it has more adverse effects on human health and is less affected by dust than $PM_{10}$;*
*(c) Install background monitoring stations in locations that are not affected by industrial activities and extensive coal consumption, to assess natural contributions to air pollution.*

Information and data on particulate matter

Particulate matter is considered to be the main pollutant in Mongolia, especially in Ulaanbaatar. Yet there is limited scientific knowledge about its content and source. The dust storms from the Gobi Desert (predominantly yellow sand) contribute substantially to sporadic PM pollution peaks. During these dust storms, PM measurements of more than 1,000 $\mu g/m^3$ were recorded in north-east China and Mongolia.

*Recommendation 8.2:*
*The National Agency of Meteorology and Environmental Monitoring, in cooperation with relevant international bodies, should develop expertise for regular analysis of the content of particulate matter, in order to regularly generate data on PM content, such as heavy metals and polyaromatic hydrocarbons, and assess the contribution of sand and dust in coarse particles.*

*Recommendation 8.3:*
*The Ministry of Environment and Tourism should define the methodology for definition of concentration peaks caused by dust storms, which are not counted in annual average concentrations of particulate matter.*

Major stationary sources of air pollution

The revised 2012 Law on Air requires major stationary sources to install equipment to monitor air emissions and abatement equipment. The Law also prescribes fines for violating emission standards. However, the fines are too low to serve as an incentive to install the abatement equipment. Data on emissions from power plants and heat-only boilers are available only from a JICA-supported project on on-site stack gas measurements to acquire reliable data on emissions as a basis for rational decision-making and for developing the emission inventory. This was a one-time exercise implemented during the period 2010–2012, though the project provided training for four representatives of environmental institutions and five power plant technicians.

*Recommendation 8.4:*
*The Government should:*

*(a) Ensure implementation of the provisions of the Law on Air regarding monitoring of the emissions from major stationary air polluting sources by regular control of their emissions and provisions related to limitation or temporary closure of operations of the major stationary air-polluting sources in the event of violation of emission standards;*
*(b) Ensure that fines for violation of emission standards are effective and dissuasive.*

Air Quality Index

The Mongolian Ambient Air Quality Standard MNS 4585:2016 prescribes the method for calculation of an Air Quality Index. The prescribed methodology makes the Air Quality Index misleading, as, in most cases, the values of the Air Quality Index would correspond to the real $PM_{10}$ concentrations.

*Recommendation 8.5:*
*The Government should change the methodology for calculation of the Air Quality Index.*

Health impact

The 2010 Law on Air Pollution Fees prescribes that a fine for major sources that exceed emission standards should be calculated on the basis of estimated value of the damage. The most significant environmental damage caused by air pollution is damage to human health, which cannot be easily recognized immediately after an exceedance of emission limit values by an installation. Moreover, this kind of damage does not allow for a traditional environmental remedy, or the estimation of its cost. In order to substantially reduce the number of deaths and illnesses from air pollution, in line with SDG Target 3.9, it is necessary to develop mechanisms to estimate population exposure to air pollution and its consequences.

*Recommendation 8.6:*
*In order to allow for proper implementation of the Law on Air Pollution Fees, the Government should adopt precise methodology for estimation of population exposure and calculation of the economic cost of the health impact of air pollution, or a methodology to calculate the value of damage caused by an exceedance of emission standards on the basis of its duration, toxicity of the emitted polluting substance(s) and the level of exceedance.*

Data on air emissions on national level

Despite the fact that the legal competence for compilation of the air emission inventory is assigned to the National Agency of Meteorology and Environmental Monitoring by the revised 2012 Law on Air, there is no available data on air emissions on a national level. Available data cover only Ulaanbaatar City and categories of emission sources are not comparable with internationally common categories.

*Recommendation 8.7:*
*The National Agency of Meteorology and Environmental Monitoring should develop the capacities for compilation and regular update of the national air emission inventory, following, for example, the EMEP/EEA air pollutant emission inventory guidebook or making it compatible in terms of categories and emission sources data with GHG inventories developed in accordance with relevant decisions adopted by the bodies of the UNFCCC or of agreements deriving from it.*

**Chapter 9: Water management**

*Assessment*

The Government established the priorities for water management in the 2010 National Water Programme and 2016 Mongolia Sustainable Development Vision 2030. Much attention is paid to revising and extending the legislative and regulatory frameworks; targeted programmes and different projects are being developed within these frameworks. Achievements include placing 44.5 per cent of the total area of river heads under national protection by 2016 and the prohibition of mineral exploration and exploitation in run-off source areas, introduced in 2009.

However, despite existing legal and regulatory acts and programmes, water resources management remains one of the most problematic issues in Mongolia, especially in the context of climatic conditions and social and economic consequences.

Mongolia identified the IWRM approach as a priority direction for reforming its water management system. However, practical implementation of IWRM lags behind, with the need to develop IWRM plans for the remaining basins, ensure implementation of IWRM basin plans, strengthen the institutional structures for IWRM implementation, ensure the operation of water basin councils and advance opportunities for public participation in water basin management.

The main sources of water pollution are municipal water treatment facilities, industrial treatment facilities and poorly treated wastewater discharged from private and government-owned sanitation facilities. Ensuring proper working conditions in treatment facilities, introducing modern technologies and equipment and carrying out their

regular maintenance are crucial for the reduction of environmental pollution and improvement of sanitary conditions.

*Conclusions and recommendations*

Water supply, sanitation and wastewater treatment infrastructure

The Government has been making steady progress towards improving access to water supply and sanitation in the last 10–15 years. It has nationalized the MDGs and has set new targets on access to water supply and sanitation under the Mongolia Sustainable Development Vision 2030. The official data for access to water supply and sanitation and the related MDG indicators vary between different sources. The clear gaps, however, are the persistent differences in access to both water supply and sanitation between urban and rural areas, the limited number of households having connection to central sewerage systems in urban areas and the very low percentage of the rural population (less than 5 per cent) estimated to have access to adequate sanitation. Open defecation is still practised and, according to JMP, open defecation rates are over 26 per cent in the poorest rural areas. Additional efforts are therefore needed for Mongolia to achieve Targets 6.1 and 6.2 of the 2030 Agenda for Sustainable Development.

Target 6.3 of the 2030 Agenda for Sustainable Development (By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally) is crucial for Mongolia, where wastewater treatment represents one of the biggest challenges for the protection of water quality. Due to the capacity and the technical state of the existing wastewater treatment facilities, the quality and the efficiency of wastewater treatment should be improved.

*Recommendation 9.1:*
*The Government should increase investments in:*

*(a) Water supply, sanitation and sewerage infrastructure, with a focus on rural areas;*
*(b) The renovation of the central wastewater treatment plant in Ulaanbaatar.*

Groundwater and surface water use

About 95 per cent of the water used in Mongolia is supplied from groundwater resources, which amount to only 1.91 per cent of the total volume of Mongolia's water resources. Surface water resources are unequally distributed throughout the country's territory and are used to a limited extent. There is no comprehensive water infrastructure to increase the use of surface water resources.

*Recommendation 9.2:*
*The Ministry of Environment and Tourism, in cooperation with the Ministry of Construction and Urban Development and other relevant government bodies, should:*

*(a) Develop an action plan to shift from the use of groundwater to the use of the surface water resources for various purposes;*
*(b) Ensure development and financing of water infrastructure in order to accumulate water resources and provide all sectors with water;*
*(c) Consider developing and implementing aquifer recharge schemes in both urban areas and the relevant regions of the Gobi Desert.*

Groundwater monitoring

Monitoring is the important constituent of water resources management in Mongolia, which certainly needs further development. This is especially true for groundwater monitoring. There are 193 monitoring wells (boreholes), of which just 28 are automated and continuously return data.

*Recommendation 9.3:*
*The Ministry of Environment and Tourism should increase the number of groundwater monitoring system logger points (boreholes) with the purposes of improving water quality and usage and not lowering the groundwater levels.*

River basin management and databases

Mongolia has established 21 water basin administrations for its 29 water basins. These bodies are entrusted with a comprehensive set of tasks – to develop basin IWRM plans, ensure intersectoral coordination in their implementation, set up databases of water basin information and monitor water use in the basin. However, these bodies lack the practical experience needed for implementation of these tasks. Training and professional development of employees of the water basin authorities are of the utmost importance, to enable them to implement the assigned tasks and be better positioned for advancing implementation of Target 6.5 of the 2030 Agenda for Sustainable Development (By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate).

*Recommendation 9.4:*
*The Ministry of Environment and Tourism should:*

*(a) Provide training and professional development in order to improve the water resources management capacity of the river basin authorities' staff;*
*(b) Seek assistance from international organizations and other governments that have adequate experience and knowledge in IWRM plans;*
*(c) Ensure the operational consistency of the water databases for data collection, data quality and data exchange between data holders and organizations;*
*(d) Create and maintain the national water database and subdatabase of water basin information.*

**Chapter 10: Waste management**

*Assessment*

Waste management in Mongolia has started to change from the practice of cleaning the city/area and dumping waste beyond city/area limits to organized, planned and regular waste collection and disposal to designated places. Regulation of waste practices is becoming stricter and the legislative base has been strengthened step by step. There is a risk to implementation of the national Waste Management Improvement Programme, because its goal and objectives are defined on a national level, but implementation and enforcement are mainly on the aimag and soum levels. The result is that MSW management is improving, as this is in the interest of aimag and soum authorities, but industrial waste management is not progressing.

*Conclusions and recommendations*

Institutional capacity for waste management

The current capacity of the Ministry of Environment and Tourism in waste management is limited and cannot ensure a national approach to waste management. This can be achieved by introducing a waste management department in the structure of the Ministry, which would ensure the fulfilment of all the tasks defined in the Law on Waste Management and coordinate the actions of other ministries in waste management improvement. Another option is to establish a waste management agency, which would assist the waste management expert in the Ministry, concentrate technical knowledge and distribute it among ministries, aimag and soum authorities and industries, and also coordinate international assistance in waste management.

*Recommendation 10.1:*
*The Ministry of Environment and Tourism should consider strengthening its capacity in waste management by establishing a waste management department or a waste management agency, which would act as a centre of excellence and be a driver of waste management improvement.*

Strategic documents

The priorities in waste management during the last decade were the improvement of MSW management and healthcare waste management. These improvements were a response to immediate needs and development of critical infrastructure. However, achieving change in the management of waste, and especially of hazardous waste generated by manufacturing, mining and agriculture, requires close cooperation with other ministries. Sectoral strategies or sectoral waste management plans are not in place.

*Recommendation 10.2:*
*The Government should:*

*(a) Ensure that sectoral ministries develop and implement waste management strategies, as applicable;*
*(b) Approve the new national waste management strategy and prepare a financing plan for this strategy;*
*(c) Ensure that waste management plans are developed and implemented at the municipal level, to avoid inadequate waste disposal systems, such as large dumping sites around cities.*

Waste management data

Data on generation and management of waste are crucial information for effective decision-making. Although waste data have been collected for more than a decade, their quality is low. A list of hazardous waste derived from the EU Waste Classification was adopted in Mongolia, but it is not used in practice. Other waste-management-related data exist, but they are not aggregated at the national level (e.g. rehabilitation of mining areas, tailing ponds in the mining and energy sector). The lack of waste management data impedes the development of projects and provision of information to the public. It does not provide an adequate picture of achievements in the waste sector. In addition, data verification is not formally done to ensure that published data reflect the real situation as exactly as possible. Cooperation with the NSO is limited in regard to the inclusion of waste data in Statistical Yearbooks.

Due to the low quality of data on waste and chemicals, Mongolia is not able to measure its progress towards SDG Target 11.6 (By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management) in relation to municipal and other waste management, and SDG Target 12.4 (By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment) in relation to environmentally sound management of chemicals and all wastes throughout their life cycle.

The 2017 Law on Waste Management envisages the implementation of a waste database and training of waste producers in the identification and classification of waste and hazardous waste.

*Recommendation 10.3:*
*The Ministry of Environment and Tourism, through the Environmental Information Centre, and the National Statistics Office should develop and implement the national waste database and metadatabase on waste data, introduce data verification procedures and publish annual statistical reports on waste management.*

Radioactive waste

Although radioactive waste is not considered an immediate priority, a basic legal framework and strategic documents and action plans that would ensure its safe management are lacking. Mongolia is not a party to the Joint Convention on the Safety of Spent Fuel Management and the Safety of Radioactive Waste Management, which provides the basic framework for safe management of radioactive waste. Participation in this Convention would allow Mongolia to benefit from international cooperation and achieve international standards in the management of radioactive waste.

*Recommendation 10.4:*
*The Nuclear Energy Commission, in cooperation with the Ministry of Environment and Tourism, should:*

*(a) Consider participation in the Joint Convention on the Safety of Spent Fuel Management and the Safety of Radioactive Waste Management;*
*(b) Develop specific strategy, plans and legislation for radioactive waste management.*

Recycling

Separation of recyclables from municipal waste is well developed, with a system of buy-out points. However, most recyclables are exported because Mongolia lacks recycling capacities. This situation will change with the development of EcoPark, which is planned by the National Association of Waste Recycling Industries. Enhancing recycling capacities will have positive effects on the reduction of disposed waste, creation of green jobs and sustainable use of natural resources.

*Recommendation 10.5:*
*The Government, through the Ministry of Environment and Tourism and the Ministry of Finance, should support the development of EcoPark as a modern waste management centre.*

**Chapter 11: Biodiversity and protected areas**

*Assessment*

Mongolia has managed to preserve its pristine natural ecosystems and is still one of the last wildlife species refuges of East Asia. This was possible not only due to the considerable size of the sparsely populated territory but also to the Mongolian culture and ethics, evolved throughout the centuries, of living in harmony with nature and using the scarce natural resources in a sustainable manner.

However, throughout the last three decades, Mongolia has experienced rapid declines of numerous species, including those globally threatened by extinction, as well as those abundant in other regions but recently becoming rare or almost extinct. Simultaneously, the integrity of almost all natural ecosystems in each of the four ecoregions of Mongolia is currently threatened, partly due to ongoing climatic changes, but mostly due to growing anthropogenic pressures.

The above means that the current legislation, institutional framework and protected area network do not provide for effective biodiversity conservation, and that undertaking additional efforts is urgently required.

The globally agreed SDGs indicate a number of targets that can serve as guidance in these endeavours (in particular, Targets 15.1, 15.4 and 15.5, but also 11.4). Moreover, as a party to the CBD, Mongolia committed to implement the CBD Strategic Plan for Biodiversity 2011–2020 and reach corresponding Aichi Targets, which are well incorporated into the country's current National Biodiversity Programme for the period 2015–2025.

*Conclusions and recommendations*

Biodiversity monitoring and data availability

Information on biodiversity is neither regularly collected nor verified and updated, due to the absence of complex biodiversity monitoring and information systems. Lack of funding resulted in discontinuation (if not abandonment) of nationwide biodiversity research programmes. The few available data are dispersed among different authorities, agencies, research institutes and environmental organizations. Communication and data exchange among different data owners and different administrative levels is lacking.

Lack of access to reliable and updated information on biodiversity may lead to the duplication of research efforts, and impedes the development of national, regional or local policies, species conservation action plans, protected area management plans and the setting of hunting quotas. Ultimately, the lack of access to reliable and updated information on biodiversity is an impediment for progress in achieving SDG Target 15.5 (Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species).

*Recommendation 11.1:*
*The Ministry of Environment and Tourism should:*

*(a) Support, in cooperation with the Ministry of Education, Culture, Science and Sports, nationwide biodiversity monitoring and research programmes, in particular those targeted at threatened ecosystems and endangered species of fauna and flora;*
*(b) Update the Red Lists and elaborate the second part of the Red List of Plants;*
*(c) Establish, in cooperation with the National Statistics Office, Mongolian Academy of Sciences, National University of Mongolia and other related institutions, an efficient biodiversity information system, utilizing contemporary techniques for digitalized data acquisition, storage, retrieval, processing and dataset harmonization, with the objective to gather, store and share results of biodiversity monitoring, research programmes and projects carried out with the support of public funding, and provide access to this system (with differentiated access and data administration levels) for all relevant stakeholders involved in nature conservation initiatives, and also promote retrieval of primary data, with particular focus on retired scientists of the Mongolian Academy of Sciences and universities through dedicated programmes;*
*(d) Establish and maintain a metadatabase on biodiversity.*

Rare and endangered species

The decline in numerous species populations and loss and degradation of their natural habitats are currently progressing at an alarming pace. The current scope of protective measures targeted at rare and/or endangered wild species of flora and fauna is not sufficient to mitigate the above processes and achieve progress under SDG Target 15.5. Furthermore, a considerable part of wildlife habitats and migration corridors of wide-ranging and globally significant species remains outside protected areas, in the "non-protected" 70 per cent of the country's territory.

*Recommendation 11.2:*
*The Ministry of Environment and Tourism should:*

*(a) Evaluate the effectiveness of national action plans and programmes for the protection of rare and/or endangered species and, if necessary, consider their modification or adjustment;*
*(b) Identify other rare and/or endangered species in urgent need of enhanced conservation and develop and implement relevant national action plans and programmes for their protection.*

Zoning of protected areas

Since the beginning of the 1990s, Mongolia has developed a national system of protected areas, which, in 2017, covers almost 30 per cent of the country's territory. However, the protected area network does not yet adequately safeguard the biodiversity values, as some natural ecosystems are underrepresented. Furthermore, the current zoning pattern in some protected areas does not provide for sufficient protection of important wildlife habitats. Addressing these challenges is important for Mongolia's progress in achieving SDG Targets 15.1 (By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements) and 15.4 (By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development).

*Recommendation 11.3:*
*The Ministry of Environment and Tourism should:*

*(a) Evaluate the current internal zoning pattern of strictly protected areas and national parks, for the purpose of improving their conservation efficiency, in particular for the protection of mainstays, important habitats and migration routes of rare or endangered wild species;*
*(b) Revise protected area zoning, prepare zoning maps based on GIS technology, make these available to protected area administrations and the public and modify the management plans of protected areas accordingly;*
*(c) Extend the protected area network to include at least 30 per cent of each main ecosystem representative for Mongolia, and sites important for mountain biodiversity;*
*(d) Introduce utilization of spatial planning tools in selection and expansion of the protected area network.*

Capacity for biodiversity conservation

The current human, technical and operational capacities for carrying out regular biodiversity monitoring, efficient protected area management and implementation of biodiversity conservation measures in the field are insufficient. Capacity-building becomes an urgent task in the light of both the planned extension of the protected area network and growing tourist pressures on protected areas. Through the provision of professional training and education on tourism facilities management, the negative impacts on biodiversity can be minimized and the quality of the visitor experience can be enhanced. Without enhancement of the current human, technical and operational capacities, the implementation of state policies and strategies related to biodiversity and protected areas, as well as the related achievement of SDG Targets 15.1, 15.4 and 15.5, might simply not be feasible.

*Recommendation 11.4:*
*The Ministry of Environment and Tourism, in cooperation with the Ministry of Education, Culture, Science and Sports, should support human and technical capacity-building of state agencies, research institutions and protected area administrations, in particular, but not limited to:*

*(a) By provision of consistent professional training on, for example, population census of wildlife species, use of best practices and modern technology;*
*(b) By provision of modern biodiversity-monitoring equipment, outdoor equipment and uniforms, off-road and specialized vehicles;*
*(c) By increasing budgets and raising staff remunerations to a level attractive for skilled professionals, university graduates, young scientists and rangers, encouraging them to seek employment in the biodiversity conservation sector.*

Protected area management plans

Management plans for protected areas, based on scientific research and nature inventories, are indispensable tools for identifying and analysing threats to key species and ecosystems, defining conservation objectives and prescribing adequate protective measures to be applied in response to threats and pressures. In a situation where financial resources are limited or scarce, long-term planning is necessary for prioritizing the most urgent management challenges, and developing cost-effective annual conservation action plans and corresponding business plans, fundraising strategies and campaigns. Last, but not least, protected area management plans (especially if developed through a participatory process involving local stakeholders, and therefore supported by local communities) are a sound argument and convincing justification for requests for the allocation of budgetary resources and applications for financial support, from both available national and local funding sources and the international community and potential donors. The development of protected area management plans is also a tool contributing to achievement of SDG Targets 15.1, 15.4 and 15.5.

*Recommendation 11.5:*
*The Ministry of Environment and Tourism should support the development and/or revision of protected area management plans, in particular by involving the relevant international expertise, and ensure further implementation of protected area management plans.*

Policy framework and financing of protected areas

Due to a considerable number of gaps and shortcomings, and several contradictions, the 1994 Law on Special Protected Areas is currently under revision, together with the 1997 Law on Buffer Zones of Special Protected Areas. The revision process has continued for more than a decade, and the current thinking is to merge both Laws. Also, a new programme on special protected areas is to be developed in place of the 1998 National Programme on Special Protected Areas. Among other aspects, the new programme is to address the planned expansion of the state network of protected areas and improve the management of protected areas.

Budgetary constraints are common in State-funded PAAs that cannot retain and use revenues from entrance fees. There is no legal requirement for land fees to be allocated for the maintenance and management of protected areas. In some NPs, the impact of vehicles that transport tourists are clearly felt.

*Recommendation 11.6:*
*The Government should:*

*(a) Finalize the revision of the 1994 Law on Special Protected Areas to enable the Ministry of Environment and Tourism to address problems of the overlapped land use licenses, and adopt the revised Law;*
*(b) Finalize and adopt the new programme on special protected areas foreseeing a roadmap on the planned increase of the special protected areas system, including the enhancement of its management capacity and budget;*

*(c) Consider increasing entrance fees and provide that the revenues from entrance fees are returned to the collecting protected area, in order to enhance the management capacity of strictly protected areas and national parks;*
*(d) Provide that land use fees from tourist facilities accrue to the protected area and are used to enhance the management capacity of strictly protected areas and national parks;*
*(e) Provide that tourism facilities within the protected areas pay a percentage of gross income to the protected area in recognition of their privilege in being able to operate a private business in a strictly protected area or national park;*
*(f) Ensure that tourism facilities within protected areas such as Khuvsgul and Gorkhi-Terelj National Parks provide their own transportation within the protected area in a sustainable way, to minimize the impact of driving on the land and habitat disturbance.*

## Chapter 12: Land management

*Assessment*

Rangeland accounts for most of the total land area of Mongolia, followed by land for special needs and land with forest resources. In recent years, the areas of rangeland, land with forest resources and land with water resources have decreased, while the area of land for special needs has increased dramatically. This is mainly because more and more ecologically fragile land was transformed into SPAs. With rapid urbanization and road construction, more land was used for urban and transport construction.

The most important and obvious environmental problem relating to land resources is land degradation and desertification. Most land degradation occurs on rangeland, followed by forest resources land and cultivated areas. Both climate change and human activities contribute to the degradation of rangeland. The pressures on rangeland from human activities include overgrazing, mining, unpaved multitrack roads and urbanization. The pressures on forest resources land are from illegal logging, forest fires and insect infestations. The degradation of arable land is mainly due to abandonment of cropland. Land degradation has adverse effects on soil and water resources, causes decline in land productivity and eventually impairs the development and well-being of local communities. However, there is still no systematic assessment on these negative externalities of land degradation in Mongolia.

Mongolia has set ambitious targets to restore not less than 70 per cent of degraded land and decrease the area of desertified land to 60 per cent of total territory by 2030. These targets represent the country's national commitments under Target 15.3 of the 2030 Agenda for Sustainable Development (By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world). Mongolia has taken steps to advance its legal and policymaking framework to prevent land degradation and combat desertification, through the adoption of the 2012 Law on Soil Protection and Desertification Prevention and the 2010 National Action Programme to Combat Desertification, covering the period 2010–2020. Nonetheless, practical implementation of the envisaged policies faces challenges in view of the limited financial resources and inadequate level of institutional coordination.

*Conclusions and recommendations*

<u>Legal framework and planning</u>

The legal framework for land resources management is relatively complete in Mongolia, with the revised 2002 Law on Land as an overarching framework and the 2012 Law on Soil Protection and Desertification Prevention specifically targeted at prevention of desertification and land degradation. A process to revise the 2002 Law on Land is under way; it is expected to touch upon the entire package of land-related legislation.

The 1994 Law on Special Protected Areas and the 1997 Law on Buffer Zones of Special Protected Areas regulate land for special needs, the 2012 Law on Forests regulates land with forest resources and the 2016 Law on Crop Production regulates the use of agricultural land for crop production. However, Mongolia lacks a law for regulating the use of rangeland, which has remained in a draft version for a number of years. The adoption of a law on rangeland is important, because rangeland accounts for more than 70 per cent of the total territory of the country and because most land degradation occurs on rangeland. Such a law would enable sustainable management of rangeland. Besides, some of the recently adopted laws, especially the Law on Crop Production, are not effectively implemented due to the lack of subsidiary legislation to guide their implementation.

More than 60 per cent of Ulaanbaatar's population lives in peri-urban informal settlements, known as ger districts, which lack access to modern infrastructure. Unplanned expansion of the capital city and rapid migration from rural areas have brought many challenges, including unemployment, traffic congestion, air pollution, soil pollution and the extension of the ger districts.

*Recommendation 12.1:*
*The Government should:*

*(a) Finalize and adopt the law on rangeland;*
*(b) Revise the package of land-related legislation, including by bringing it into line with the 2016 Law on Crop Production;*
*(c) Improve the mechanism for development of land management plans to ensure cooperation between governmental agencies and organizations at different administrative levels;*
*(d) Promote the upgrading of existing ger districts by providing their inhabitants with access to modern infrastructure such as piped water, sanitation, paved roads and public transportation;*
*(e) Prevent unplanned extension of ger districts.*

Coordination and cooperation

The institutional framework for land resources management has improved since the early 1990s. ALAMGaC under the Ministry of Construction and Urban Development is responsible for dealing with most land-related issues. However, land planning and management issues are also regulated by and require close cooperation and coordination with several other ministries or agencies. The Ministry of Food, Agriculture and Light Industry is responsible for the management of agricultural land, including rangeland and cropland. The Ministry of Environment and Tourism is responsible for managing protected areas, forest and water resources. The Ministry of Mining and Heavy Industry is responsible for the mining licensing process and mining cadastre. The Ministry of Roads and Transport is responsible for roads, in particular for increasing the number and length of paved roads. There is a lack of overall cooperation and coordination mechanisms for land management among the relevant bodies.

*Recommendation 12.2:*
*The Government should establish overall coordination mechanisms for integrated land management among the relevant ministries and agencies, to ensure effective cooperation and practical action on:*

*(a) Sustainable management of rangeland and cropland;*
*(b) Protection of land with forest and water resources, as well as land for special needs;*
*(c) Mitigating land degradation from mining and from the use of unpaved roads, and supporting post-mining rehabilitation of degraded land;*
*(d) Applying international standards, such as e.g. CORINE land cover, to update and maintain land cover information and database.*

*See Recommendation 1.4(f).*

Resources and international cooperation

As a party to the UNCCD, Mongolia developed its first National Plan of Action to Combat Desertification in 1996, updated it in 2003 and is currently implementing the National Action Programme to Combat Desertification, covering the period 2010–2020. However, the first Plan was not effectively implemented, due to

limited financial resources, limited sources of knowledge and technology, weak coordination among the relevant sectors and limited capacity.

At the regional level, Mongolia, the People's Republic of China and the Republic of Korea co-founded the Northeast Asia Desertification, Land Degradation and Drought Network. Mongolia participates in all meetings and joint projects addressing regional issues related to land degradation, in order to contribute to achieving the goal of land degradation neutrality in northeastern Asia.

*Recommendation 12.3:*
*The Government should:*

*(a) Mobilize additional domestic and international financial resources and foster capacity-building for effective implementation of the 2010 National Action Programme to Combat Desertification, covering the period 2010–2020;*
*(b) Build capacity and benefit from learning and transfer of advanced knowledge and practical technologies of sustainable land management from its partner countries and by collaboration with international organizations.*

Land degradation neutrality indicators

Mongolia's network for monitoring land degradation and desertification consists of 1,500 points throughout the country. NAMEM, under the Ministry of Environment and Tourism, is responsible for conducting land degradation and desertification monitoring. The information on three land degradation neutrality (LDN) indicators (i.e. land cover and land cover change, land productivity, and carbon stocks above and below ground) is currently not collected. The operational capacity to produce information and data on these three subindicators, and thus to enable the country to effectively monitor its efforts and report under SDG Target 15.3, does not exist.

*Recommendation 12.4:*
*The Ministry of Environment and Tourism, in cooperation with the National Statistics Office, should initiate data collection for the three LDN indicators.*

Data

Apart from the lack of coordination mechanisms for integrated land management among the relevant ministries and agencies, the lack of a unified database on land and land use is an issue. The primary responsibility for maintaining a national information system on land and for providing land-related data to governmental institutions and the public lies with the Agency for Land Administration and Management, Geodesy and Cartography (ALAMGaC). However, to ensure the meaningful use of land-related information for policymaking and decision-making, a database on land and land use requires input from various governmental institutions at different levels.

*Recommendation 12.5:*
*The Agency for Land Administration and Management, Geodesy and Cartography (ALAMGaC), in collaboration with the Ministry of Food, Agriculture and Light Industry and the National Statistics Office, should establish a database on land and land use, including data on crop and hay yield production, which will be filled by relevant institutions while ensuring data quality, consistency, flow and interoperability.*

**Chapter 13: Forestry and environment**

*Assessment*

Until 1990, the forest industry developed rapidly and expansively and the forest sector was contributing 6 per cent of GDP. With the collapse of the system in the 1990s, State-owned wood processing factories were privatized and subsequently ceased their operations, due to a lack of investment and trained professional workers. Consequently, the domestic market for wood products has declined significantly and this has led to extensive illegal logging. The situation has been exacerbated by the overall economic situation in the country, with rampant

unemployment caused by the system change. In that context, the main management objective of the State has shifted from forest utilization to conservation.

Starting from the early 1990s, the Government has developed a comprehensive legal, policy and institutional framework for forest resource management. More recently, the 2015 State Policy on Forests has set the main objectives. Four of its eight objectives deal with forest conservation. Therefore, forest conservation remains the priority for the country, aiming to reduce timber harvesting, include as many forest areas as possible in protected areas and conduct reforestation. However, this policy fails to reflect the forest condition, as recently revealed by the Multi-Purpose National Forest Inventory (2014–2016), and the domestic need for timber and fuelwood. The results of the Inventory require a policy response to develop active forest management in the country.

Another priority area in forest policy is afforestation and reforestation. Most of the government funding in the forestry sector is allocated for tree planting and pest control. The government-funded Green Belt National Programme is the main example of major funding from the state budget to promote afforestation. However, the success and survival rate of the reforestation and afforestation practices are not carefully evaluated and reflected in long-term policy.

Mongolia has made significant progress towards developing participatory forest management. The promotion of this concept is a government response to tackle the problem of illegal logging and provide better control of forest fires. The rationale behind this concept is that forest-dependent communities that directly benefit from forest resources for their livelihood, needs for timber, fuelwood and NTFPs would be the most interested in managing forest resources sustainably and preventing outsiders from using them illegally. However, despite recent positive developments with the adoption of the 2015 State Policy on Forests, forest user groups are still not regarded as key players in the sustainable management of the country's forests. Currently, the focus of involvement of the local population is more on protection than on actual management and resource use. The absence of legal status and security of tenure rights may lead to community demotivation and is likely to undermine community participation in forest management in the long run. Unless local people see tangible and significant benefits in improvement of their livelihoods, their participation and further engagement will be difficult to sustain.

*Conclusions and recommendations*

Sustainable forest management

The findings and results of the recently released Multi-Purpose National Forest Inventory (2014–2016) are a good basis for elaboration of future policy directions to achieve sustainable forest management in line with Target 15.2 of the 2030 Agenda for Sustainable Development. The Multi-Purpose National Forest Inventory has revealed that Mongolian boreal forests are largely overmature. Consequently, forests are not only less productive but also more prone to fires and pest attacks and less resilient to climate change. The result is forest degradation and, ultimately, deforestation. More active forest management of mature and overmature stands, which would not only improve overall forest condition but also create jobs and income in rural areas, is lacking. Mongolia also lacks national criteria and indicators of sustainable forest management, which are important for it to be able to measure progress towards Target 15.2. The country is working on the system of national certification, which is another tool for advancing sustainable forest management.

*Recommendation 13.1:*
*The Ministry of Environment and Tourism should:*

*(a) Revise the 2015 State Policy on Forests in light of the findings of the Multi-Purpose National Forest Inventory (2014–2016) to reflect the need for increasing the management and sustainable use of forest resources and to ensure evidence-based policy development;*
*(b) Develop national criteria and indicators of sustainable forest management;*
*(c) Develop a system of national certification for sustainable forest management and bring it closer to international certification systems such as the Programme for the Endorsement of Forest Certification (PEFC).*

Forestry institutions

Mongolia has a comprehensive legal and policy framework for forest management. However, the institutional set-up that would support the implementation of forest policy, in particular at the local level, is not sufficiently strong. The establishment of intersoum forest units, which started in 2012, is a good attempt to devolve considerable management responsibility to local levels. However, these units do not have the necessary equipment and resources to carry out their everyday work. They are understaffed and their staff do not possess the required qualifications. Forestry professional organizations also operate at the local level. As of 2016, 814 private entities were licensed as professional forestry organizations. However, these private companies are beset by many problems, such as a lack of trained staff, technical equipment and access to modern technologies. The quality of their work is not regularly assessed by the Ministry of Environment and Tourism or local governments.

*Recommendation 13.2:*
*In order to strengthen forestry institutions at the local level, the Ministry of Environment and Tourism should:*

*(a) Strengthen operations of the intersoum forest units through provision of equipment and training;*
*(b) Monitor the work of licensed professional forestry organizations and ensure that licences are issued/renewed to qualified organizations only.*

Participatory forest management

Mongolia has made a significant progress towards developing participatory forest management. However, the legal status of forest user groups is still unclear. Forest user groups cannot be awarded any logging permits. Therefore, they have to enter into partnerships with private enterprises and forestry professional organizations to obtain logging permits. Furthermore, due to their not having any legal status, they do not have access to financial services.

The revised 2012 Law on Forests provides concession rights to forest user groups for up to 60 years. Forest user groups enter into an agreement with the soum governor. However, the security of right holders and the legal status of their contracts are unclear and weak. Only mining concessions enjoy real tenure security. The Law on Forests and other relevant laws do not clearly prevent overlapping rights from being granted over a contracted forest area. This sometimes results in situations in which new concessions have been awarded to outsiders over forest that is already under the management of forest user groups on a contractual basis.

*Recommendation 13.3:*
*The Ministry of Environment and Tourism should develop proposals to amend the legislation in order to:*

*(a) Formalize the status of forest user groups to provide them with the legal rights to use forest resources sustainably;*
*(b) Ensure that forests under the management of forest user groups are not affected by mining or petroleum licences.*

Information for future decision-making

Recent statistics and the State of the Environment Report for 2015–2016 demonstrate that the condition of forests managed by forest user groups has improved, in particular, by preventing the occurrence of forest fires. Local communities have developed a sense of ownership over their resources. However, there is no information on the extent to which the management of forests by forest user groups has impacted on deforestation and forest degradation, and management of NTFPs, wildlife and plant resources, and has enhanced carbon sequestration. Such information is important for further developing community-based forest management.

*Recommendation 13.4:*
*The Ministry of Environment and Tourism should conduct a study on the impact of active forest management and use by forest user groups to address its impact on deforestation and forest degradation and the resulting carbon benefits through increased stand increment and avoidance of forest fires and other causes of forest degradation, with the support of spatial tools.*

Biofuel production and local livelihoods

The natural forests of Mongolia are in great need of tending and thinning to ensure healthy forest stands, increased growth and resilience to climate change. However, there is no concept on the rational use of residues from forest thinning and tending activities that could meet the costs of these operations and generate income to support local livelihoods. Few innovative trials have been tested by forestry projects that also include activities carried out by forest user groups.

*Recommendation 13.5:*
*The Ministry of Environment and Tourism, with relevant stakeholders, should:*

*(a) Conduct an economic and sustainability analysis on the possibility of using residues from thinning and tending operations to produce biofuels such as chips, briquettes, pellets and charcoal;*
*(b) Develop a comprehensive approach to promote biofuel production, using wood residues, tending and thinning products, for power generation, by building efficient wood-fired power plants and boilers at soum centres and briquetting for the Ulaanbaatar fuel market;*
*(c) Develop a concept for supporting small-scale forest enterprises based on forest user groups to create green jobs, provide sustainable wood supply for domestic consumption, heating and cooking and to improve local livelihoods.*

Funding

Currently, most of the government funding in the forestry sector is allocated to tree planting (reforestation and afforestation) and pest control. However, the success of tree planting activities is rather questionable. In addition to the harsh climate, several factors affect the low survival rate of trees, such as cattle grazing, forest fires and the quality of plantation operation. Ways to increase the effectiveness of tree planting efforts are to be explored in view of the Government's goal to increase the area of closed forest from the current 7.85 per cent to 8.3 per cent by 2020 and 9.0 per cent by 2030. The funding currently provided to the forestry sector is not sufficient to support more effective forest management with consideration of the potential of forestry to support rural livelihoods. Efforts to mobilize additional funding for these purposes would be in line with the Government's commitment under Target 15.b of the 2030 Agenda for Sustainable Development.

*Recommendation 13.6:*
*The Government should:*

*(a) Conduct an analysis to evaluate the effectiveness of reforestation and afforestation efforts;*
*(b) Make efforts to increase funding for more effective forest management with a consideration of the potential of forestry to support rural livelihoods and create green jobs.*

**Chapter 14: Risk management of natural and technological/anthropogenic hazards**

*Assessment*

Significant advances in DRR and DRM have been made over the last decade, largely driven by the lessons learned from droughts, dzuds, forest fires and other natural and human-induced disasters that occurred in the country. Response to the 2009–2010 dzud highlighted shortcomings in preparedness, communication and response that triggered stronger action to integrate DRR into national policies, including those on climate change adaption and sustainable development.

Government officials are well aware of the importance and interdependence of key international documents such as the Sendai Framework for Disaster Risk Reduction 2015–2030, the 2030 Agenda for Sustainable Development, and the Paris Agreement, which are seen as the drivers of the national development agenda. The Government progressively developed policies and plans for DRR and DRM in partnership with, and with the assistance of, many international organizations and as a result of national-level projects designed to build the country's capacities.

In the past, many development decisions have been made with little regard to their consequences for the vulnerability of the population and infrastructure. Some decisions have created risk internal to the development itself, such as through failure to consider seismic risk in building design or site selection. Some decisions have encouraged populations to move into hazard-sensitive areas by establishing public infrastructure and jobs in those locations. Many development actions currently under review by the Government may carry potential disaster risk, but they also provide opportunities to strengthen resilience. The integration of disaster risk concerns into Mongolia's national development actions should be at the heart of actions to strengthen the country's disaster resilience.

There is a wide range of measures that the Government, its development partners and civil society can take to strengthen disaster resilience. Significant resource constraints imply that available DRM resources need to be used as strategically and cost effectively as possible. By implication, there is an urgent need to focus more heavily on the root causes of disasters, seeking to tackle the issues that create disaster risk both through ex-ante risk reduction efforts and by building resilient communities in the aftermath of disasters.

*Conclusions and recommendations*

Policy framework for disaster risk management and climate change

Implementation of the 2011 State Policy and Programme on Disaster Protection is under way. The Government is now developing a new national strategy on disaster risk reduction for the period 2015–2030, to be aligned with the Sendai Framework and the relevant targets of the 2030 Agenda for Sustainable Development. At local level, three Mongolian cities (Darkhan, Erdenet and Ulaanbaatar) have officially joined the global campaign, "Making Cities Resilient: My City is Getting Ready", meaning that they have integrated DRR into local development policy and urban action plans and are working to ensure effective implementation. There is no information on other local governments that have adopted and implemented local DRR strategies. There is a good understanding of the interdependence of work on DRR, climate change adaptation and sustainable development, but practical implementation of these linkages and institutional coordination encounter difficulties.

*Recommendation 14.1:*
*The Government should enhance coherence and increase the effectiveness of national disaster risk management, climate change adaptation and sustainable development efforts by:*

*(a) Ensuring that future national and local strategic documents on disaster risk management are closely linked to and feed into the broader national sustainable development agenda;*
*(b) Mainstreaming and integrating disaster risk management and climate change adaptation into sectoral and local development plans and budgets;*
*(c) Exploring the opportunity of developing a joint work plan or alignment of the national disaster risk managment and climate change adaptation action plans.*

Urban infrastructure

Since the 1990s, Mongolia has been experiencing rapid rural-to-urban migration and urbanization. Such urbanization has largely been unplanned and has resulted in many development challenges, including a lack of access to basic services and high levels of air pollution during winter in some areas. Ger districts at the Ulaanbaatar City outskirts are often situated in flood pathways, where the residents have no protection from flash floods. Addressing these challenges is crucial for achieving progress with Targets 1.5, 11.5 and 11.b of the 2030 Agenda for Sustainable Development.

*Recommendation 14.2:*
*The Government should:*

*(a) Conduct inventory, vulnerability and risk assessment of infrastructure facilities in urban areas;*
*(b) Provide guidance and support for the redesign and retrofitting of urban infrastructure;*
*(c) Ensure the integration of disaster risk management and climate change adaptation aspects into construction, zoning and other relevant regulations.*

Capacity and coordination

There are multiple challenges faced by the DRM system as far as preparedness, response and recovery planning are concerned. Emergency preparedness and response capacities are more developed at the national level, although NEMA still lacks sufficient personnel and equipment. At the local level, international organizations and NGOs support government efforts and provide technical assistance with emergency response services, especially in regions frequently affected by disasters. Traditional early warning systems are present in communities that experience earthquakes and floods. In the most at-risk locations, people often use their indigenous knowledge to prevent the adverse effects of hazards, and self-manage their relocation when disaster strikes. Effective coordination of the activities of all DRM structures at national and local levels to optimize the use of available funds and resources is among the recurrent challenges.

*Recommendation 14.3:*
*The Government should enhance disaster preparedness, response, recovery, rehabilitation and reconstruction efforts by:*

*(a) Building the capacities of stakeholders in contingency planning through training in order to improve their state of preparedness in the face of different hazards;*
*(b) Developing, simulating and validating response plans at national and aimag levels to be better prepared and respond to disasters;*
*(c) Strengthening capacities (personnel, equipment) of the National Emergency Management Agency;*
*(d) Enhancing the coordination and monitoring of disaster response resources;*
*(e) Developing mechanisms to improve targeting of post-disaster assistance to the poor, limiting the use of informal disaster coping mechanisms, which can have detrimental consequences on long-term development.*

Understanding the disaster and climate risks

In Mongolia, the majority of institutions and professionals, at all levels of administration (from central to local) have a good understanding of disaster and climate risks and a fair understanding of what DRM means for their field of work. Various technical institutions are formally mandated for data collection and forecasting, such as NEMA's Disaster Research Institute, among others. However, risk assessment was eventually conducted only in a few sectors. Certain capacities are still required for systems to perform fully, including systems for data gathering and analysis, early warning and integrated information management.

*Recommendation 14.4:*
*The Government should increase the awareness and understanding of disaster risk management concepts and practices of all stakeholders involved in the disaster risk management system by:*

*(a) Conducting on a regular basis multi-hazard risk assessments;*
*(b) Developing and updating the national multi-hazard risk profile and integrating climate change scenario modelling into the national disaster risk profile;*
*(c) Setting up a coordination mechanism for data collection and information sharing between relevant entities;*
*(d) Raising awareness, educating and building capacities and skills for effective community and citizen engagement in disaster risk management activities.*

**Chapter 15: Health, food safety and environment**

*Assessment*

During the last two decades, the health status of the Mongolian population improved. Vaccination programmes, access to care and preventive actions have all contributed to this improvement. However, great differences in health indicators are observed between regions and aimags. Depending on the region, the livelihood and environment of the population differ strongly, inducing different health impacts. Improving access to healthcare for those living in remote areas is one of the key factors in reducing health inequalities. However, human health depends on several factors, including environmental, nutritional, social, educational and occupational factors.

Although a database for registration of health factors has been established, diseases such as asthma, asbestos-related diseases and legionelosis are not registered. The environmental factors related to the diseases cannot be identified. Environmental investigation of specific signals such as lead poisoning and CO intoxication are not carried out; identification of the origin of the exposure and its removal are not performed.

Several national research centres under the Ministry of Health are working on specific areas. The scientific work and data analysis capacity of teams is a major asset for the Government in its attempts to identify environmental health problems and build the appropriate policies in response.

Compared with other goals and targets of the 2030 Agenda for Sustainable Development, Mongolia is well placed for implementation of Goal 3, since data for many of its indicators are available and the national targets for the period until 2030 have already been set, primarily in the Mongolia Sustainable Development Vision 2030 – the most authoritative policy document in the country.

*Conclusions and recommendations*

Environmental health indicators

The Mongolian population is exposed to several pollutants via different environmental media – air, water and soil. The 2017 Government Resolution No. 259 defines the responsibilities of various organizations both within and outside the health sector for the submission of environmental health data to the National Centre for Public Health to enable it to perform environmental health research. In general, this resolution represents a step forward for strengthening surveillance and prevention, but it lacks detail on the exact environmental health indicators and frequency of submission of information.

*Recommendation 15.1:*
*The Ministry of Health, in cooperation with the National Statistics Office, should continue implementation of the 2017 Government Resolution No. 259 to define environmental health indicators, ensure collection of the data on environmental health indicators and make them publicly available.*

Studying the health impact of exposure to environmental factors

Databases on dangerous substances (chemicals, hazardous waste, asbestos, lead, radon) and on their emission and locations are not established, or data are not collected or not included in databases. Consequently, exposure of the population to these contaminants and their impact on health are not defined and it is difficult to prevent such exposure.

*Recommendation 15.2:*
*The Ministry of Health, in cooperation with academic institutions, should:*

*(a) Carry out studies on the health impact of environmental factors;*
*(b) Develop registration of diseases related to environmental exposure, such as those related to asbestos, arsenic, mercury, lead poisoning and legionelosis;*
*(c) Carry out in-depth investigations of cases of these diseases to determine and remove the exposure source.*

The need for an overarching strategy for environmental health

The Government has taken into account the disparities among the country's population and has set the environmental health goals. The 2017 National Environmental Health Programme designed for the period 2017–2020 prioritizes work to reduce health impacts from air, water and soil pollution, and from chemicals. Several other environmental-health-related programmes exist, but their implementation at the aimag and local levels and their final assessment are not available. Thus, the links between the different plans and programmes are not clear. The priorities and overarching strategy for environmental health are not defined. There is a lack of thematic action plans, such as action plans on asbestos, indoor air quality and environmental noise.

Knowledge of the impact of environmental factors on population health is limited to specific media, such as air pollution, but the impacts on health of asbestos, noise, chemicals and anthropogenic activities are not documented.

It is important to identify the main environmental factors that are detrimental to public health in order to determine appropriate actions and priorities.

*Recommendation 15.3:*
*The Government should:*

*(a) Develop and implement an overarching strategy for environmental health based on assessment of the implementation of policy documents related to environmental health;*
*(b) Develop and implement thematic national programmes on various environmental health components based on an overarching strategy for environmental health;*
*(c) Implement the environmental health action plan in cooperation with relevant stakeholders at all administrative levels.*

Water safety

Access to safe water and sanitation is an issue in rural and remote areas. Protection of water resources is not systematic, though it is one of the first steps needed to maintain water quality and prevent water contamination. A water safety profile was performed that underlined the risks facing drinking water quality, water sources and sanitation infrastructures. It highlighted the need for a comprehensive state policy on water quality, resource protection and water use.

Of all cases of infectious disease, 59.5 per cent were of preschool and school-age children. Access to good quality, safe drinking water in schools and kindergartens is an issue, especially in remote areas. Several local actions are performed by national and international organizations to ameliorate this situtation, but they are not replicated in all regions. Since 2012, the water safety plan initiative has been carried out in many urban and rural areas under the framework of the Australia/WHO water quality partnership, but this is not yet under governmental ownership.

*Recommendation 15.4:*
*The Ministry of Health, in cooperation with the Ministry of Environment and Tourism and the Ministry of Construction and Urban Development, should:*

*(a) Continue to implement the water safety plans based on the experience of the water safety plan initiative;*
*(b) Ensure access to safe drinking water and sanitation in all schools and kindergartens;*
*(c) Develop actions and policies to reduce water pollution;*
*(d) Implement drinking water desalination programmes in the southern region.*

Urban planning and environment and health impact assessments

Environmental stress is multifactoral and its cumulative effect has a deleterious effect on health. It is difficult to act specifically on each factor. However, by integrating the environmental health aspects into urban planning and development, it is possible to favour the development of a healthy environment. Urban planning and environment and health impact assessments are key tools for developing healthy cities, but are not yet used in Mongolia to reduce either urban pressure or detrimental environmental factors.

The Government has started to introduce environmental and health impact assessments. The recent introduction of health impact assessment is a good step forward in order to prevent population exposure to harmful environmental conditions and to develop a healthy environment.

*Recommendation 15.5:*
*The Government should:*

*(a) Ensure that environmental and health impact assessments are carried out and their conclusions are respected;*
*(b) Integrate environmental health aspects into urban planning and development in order to develop healthy cities.*

Health impact of air pollution

Air pollution is an issue, in particular in Ulaanbaatar, where the annual concentrations of $SO_2$ and $NO_2$ often exceed WHO guidelines. Industrial emissions have to be identified and regulated. Indoor air quality is an important health determinant, especially for babies and children who spend a lot of time inside, at home or at school. A report by UNICEF (2016) demonstrates the health impact of air pollution, and especially indoor air pollution, on children. The indoor air quality studies conducted focused on pollutants released by coal burning.

*Recommendation 15.6:*
*The Government should:*

*(a) Develop and implement actions to limit the emission of pollutants into air and to reduce population exposure to indoor and outdoor air pollution.*
*(b) Improve national standards on emission of air pollutants.*

Asbestos and lead

Asbestos is still in use in Mongolia. Several actions were implemented to tackle the use of asbestos; however, this work stopped and the objectives dealing with development of standards, regulations, a control system and disease registration were not implemented. There are currently no standards for asbestos exposure and no policy for detection of asbestos in buildings before demolition.

Leaded gasoline was banned in 2008. However, lead is released into air during coal combustion for heating in winter and for cooking. There is a lack of data concerning the different sources of lead exposure, such as lead in paint and toys, lead and occupational exposure and lead in dust and soil, and their impact on health.

The use of asbestos and paint containing lead is not regulated by law. No environmental investigations of specific signals such as lead poisoning are carried out.

Recommendation 15.7:
*The Government should:*

*(a) Collect information and carry out an inventory on the use and distribution of asbestos and lead;*
*(b) Carry out a study on asbestos exposure, including occupational exposure;*
*(c) Develop legislation and measures to eliminate the use of asbestos and lead in paint;*
*(d) Develop measures to reduce children's exposure to lead;*
*(e) Develop waste management for asbestos and lead.*

Mining and health

Mining activities have increased during the last two decades, which has had an impact on the environment and on the health of the workers, the general population and livestock. The population of mining areas is subject to the cumulative impact of mining activities on air, soil, water and animals (livestock) and, consequently, on their health. However, it is difficult to determine the extent to which there is an impact on public health. The Ministry of Health, the Ministry of Environment and Tourism and the Ministry of Mining and Heavy Industry, along with WHO, have jointly prepared a draft strategy on mining and health for the period 2015–2020. As of mid-2017, the draft is not yet adopted.

*Recommendation 15.8:*
*The Government should:*

*(a) Adopt the draft strategy on mining and health and implement it;*
*(b) Carry out a comprehensive survey on the impact of mining activities on health;*
*(c) Implement actions to reduce pollutant emission and exposure.*

Chemical safety and soil pollution

Anthropogenic activities result in soil pollution and, consequently, could be responsible for human exposure to pollutants. However, no database on polluted soils is available in Mongolia and no study has been performed on

their impact on health. Untreated industrial wastewater from factories, tanneries and mining sites pollute rivers. However, no data are available concerning compounds and volumes of industrial releases, and no evaluation of their impacts on the environment and health is performed.

*Recommendation 15.9:*
*The Government should:*

*(a) Establish a database and metadatabase on polluted soils;*
*(b) Carry out a survey on the impact on public health of chemicals (polluted soils, industrial emissions);*
*(c) Implement actions and a risk-reduction policy to reduce chemical exposure of the population.*

ILO conventions

Mongolia is a party to a number of ILO conventions related to environmental health issues. However, several ILO conventions on environmental health issues are not ratified by Mongolia. Among other matters, participation in these conventions would assist the country's efforts to promote safe and secure working environments for all workers, in line with Target 8.8 of the 2030 Agenda for Sustainable Development.

*Recommendation 15.10:*
*The Ministry of Social Welfare and Labour should consider accession to the ILO conventions on environmental health issues, viz.:*
*(a) 1947 Labour Inspection Convention (No. 81);*
*(b) 1969 Labour Inspection (Agriculture) Convention (No. 129);*
*(c) 1960 Radiation Protection Convention (No. 115);*
*(d) 1997 Working Environment (Air Pollution, Noise and Vibration) Convention (No. 148);*
*(e) 1979 Occupational Safety and Health Convention (No. 152);*
*(f) 1986 Asbestos Convention (No. 162);*
*(g) 1988 Safety and Health in Construction Convention (No. 167);*
*(h) 1990 Chemicals Convention (No. 170).*