GOVERNMENT OF MONGOLIA

MONGOLIA VOLUNTARY NATIONAL REVIEW REPORT 2019

IMPLEMENTATION OF THE SUSTAINABLE DEVELOPMENT GOALS

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ULAANBAATAR
2019

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The 2019 meeting of the High-level Political Forum (HLPF) on Sustainable Development is being held from Tuesday, 9 July to Thursday, 18 July 2019. The four-day ministerial meeting of the forum will be from Tuesday, 15 July to Thursday 18 July 2019. Mongolia will be presenting its Voluntary National Review Report at this meeting.

The HLPF is convened under the auspices of the Economic and Social Council. It is the central platform of the United Nations for follow-up and review of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals. The HLPF provides for the full and effective participation of all Member States of the UN and of the specialized agencies.

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Cover photo (yaks in the countryside of Mongolia) credit: www.mpa.mn

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CONTENTS

FIGURES

ABBREVIATIONS

CSO	Civil Society Organization
FDI	Foreign Direct Investment
GDI	Gender Development Index
GDP	Gross Domestic Product
GHG	Greenhouse Gases
GII	Gender Inequality Index
GoM	Government of Mongolia
HDI	Human Development Index
HLPF	High-Level Political Forum
INFF	Integrated National Financing Framework
LTE	Long-Term Evolution
MDG	Millennium Development Goals
MET	Ministry of Environment and Tourism
MMR	Maternal Mortality Ratio
MOH	Ministry of Health
MSDV	Mongolia's Sustainable Development Vision-2030
NDA	National Development Agency
NDC	Nationally Determined Contributions
NEET	Not in employment, not in training
NGO	Non-Governmental Organisation
NSO	National Statistics Office
ODA	Official Development Aid
PPP	Public and Private Partnerships
PWD	People With Disabilities
SDG	Sustainable Development Goals
SME	Small and Medium Size Enterprise
SPA	Special Protected Area
UN	United Nations
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
VNR	Voluntary National Review
₮	Mongolian Togrog
$	United States Dollar

FOREWORD

Recognizing our collective duty towards present and future generations, nations around the globe are jointly striving for sustainable development. This is a comprehensive endeavour by global leaders and stakeholders to ensure a better life for all people, and that human rights, and healthy, secure and decent living conditions are upheld on a sustainable basis for all.

The tradition of hearings at the UN High-Level Political Forum has been established in order to assess and evaluate Sustainable Development Goal implementation efforts.

I am delighted to launch Mongolia's first Voluntary National Review on the implementation of the Sustainable Development Goals.

Following the adoption of the Sustainable Development Goals, the Parliament of Mongolia approved its own long-term development strategy (Mongolia's Sustainable Development Vision 2030) in 2016 reflecting the 2030 Agenda. By 2030, Mongolia aspires to have in place stable and democratic governance, preserve ecological balance, eradicate poverty, and be amongst the world's leading middle-income countries.

Mongolia's past economic growth places it amongst medium-to-low ranking countries, despite being in the high human development category on the Human Development Index since 2015. This sets a sound foundation for ensuring future sustainable development.

Mongolia's primary, extractive sector-dominant economy is not resilient to external shocks from global commodity price fluctuations. In addition, its agricultural industry is not resilient to natural disasters.

The frequency of natural disasters induced by climate change is not only directly affecting the livelihoods of people, but also exacerbating environmental degradation and, as a result also impacting economic growth.

In addressing these development challenges, sound development policy planning that incorporates sustainability will be critical. In light of this, Mongolia is using the Sustainable Development Goals as a compass to strengthen consensus around coherent, coordinated actions within Government and among different stakeholders.

Because of the comprehensiveness and interconnectedness of the Sustainable Development Goals, future actions will need to focus on ensuring the comprehensive and coherent nature of policies by acknowledging the importance of both a “whole of government” and a “whole of society” approach.

Apex level national structures have been put in place, future directions need to include stakeholders at multiple levels.

One of the aims of this Report is to develop an analytical model in the context of a specific issue that is also applicable to overcome other development challenges in the country.

It features the issue of "Air pollution" as an example of a complex, multifaceted development challenge that would benefit from cross-sectoral coordination and multi-stakeholder partnerships through a sustainable development lens to develop effective solutions.

Key bottlenecks are identified to inform more integrated and coordinated policy interventions to address it.

I would like to take this opportunity to express my sincere gratitude to the management of the UN in Mongolia for their support in Mongolia's efforts towards achieving sustainable development, and look forward to continued and fruitful future cooperation.

I would also like to thank the government and non-government organizations, as well as the team of experts and researchers who have actively participated in preparing this Report.

KHURELSUKH UKHNAA

PRIME MINISTER OF MONGOLIA

PREFACE

The Government of Mongolia is pleased to present its Voluntary National Review (VNR) Report 2019, sharing a snapshot of progress on the Sustainable Development Goals in the country.

The VNR is one of the main national tools to assess progress towards the SDGs. Since 2016, UN member states have presented national reviews on SDG progress at the United Nations High-Level Political Forum on Sustainable Development (HLPF) organized annually by the Economic and Social Council. To date, a total of 115 reports have been discussed at the HLPF, between 2016-2018 and some countries have reported a second time. In 2019, 47 countries have applied to report on their VNRs, including Mongolia.

The 17 Sustainable Development Goals and 169 targets represent aspirations to end poverty and hunger, protect the planet, promote justice, eliminate disparities and inequalities, and bring prosperity by 2030. In line with these global goals, the Parliament of Mongolia adopted its Sustainable Development Vision-2030 (MSDV-2030) in 2016, a strategic policy document on the country's development priorities for the next 15 years. This makes Mongolia one of the early adopters of the SDGs.

Three years have passed since the adoption and implementation of the Mongolian long-term sustainable development policy.

This Report provides insights on the SDGs in Mongolia, the challenges faced by the country and a forward-looking agenda for accelerating progress towards sustainable development.

This review does not intend to undertake a detailed assessment of the implementation of the full range of SDG targets as the corresponding SDG indicators have not been fully defined yet. It recognizes the importance of strengthening the collection and use of relevant monitoring data, and highlights the importance of building consensus among stakeholders and strengthening partcipation and oversight to advance sustainable development policy.

Mongolia's VNR Report consists of five chapters. Chapter 1 introduces Mongolia's VNR and its preparation process and methods, while Chapter 2 presents a snapshot of where Mongolia stands on the SDGs. Chapter 3 analyses Mongolia's SDG-enabling policy environment. In Chapter 4, the Report takes up the example of air pollution as a pressing development issue and demonstrates how a single sustainable development challenge cuts across sectors and stakeholders. Chapter 5 presents the main conclusions and recommendations with proposed forward-looking actions. The main purpose of the Report is to present a snapshot of the applications of the SDGs in Mongolia and enhance the mechanisms and approaches to build consensus within society on critical development issues, discuss them from the different perspectives, and propose the joint solutions.

SUMMARY

The First National Voluntary Review (VNR) Report has been prepared based on a decision by the National Committee for Sustainable Development led by the Prime Minister of Mongolia. The process was undertaken over a one year period from 30 May 2018. The Report describes how localization of the SDGs is underway in the country, and how they will be achieved through development policy planning processes, ensuring policy integration, comprehensiveness, coherence, rationalization, and multi-stakeholder participation. The Report also highlights actions taken to identify population groups that are at risk of being left behind in the local context, incorporating their needs and requirements under the principle of "Leaving No One Behind".

Mongolia's VNR Report provides an excellent platform to deepen the awareness of the Sustainable Development Goals (SDG) among stakeholders and strengthen consensus around the importance of coherent and coordinated actions across sectors. During the VNR preparation process, the Government of Mongolia organized a series of multi-sectoral consultations, discussions, and trainings with the representatives of the central government, local administration, academia, private sector, civil society and international organizations. Such multi-stakeholder interactions help in building a shared understanding, and deepening knowledge about sustainable development. They also contribute to the review of the whole of national development policy and planning system and mechanism, and identification of key development challenges and bottlenecks.

The Report features the issue of "Air pollution", a much-discussed topic in Mongolia, arising from a pre-existing policy focus on aggregate economic growth per se, without ensuring inclusion and environmental protection. This problem is best tackled by applying a multi-SDG lens. Treating it as a narrow Ulaanbaatar problem caused by overcrowding will not lead to cleaner air. Air pollution serves as an example of a complex, multifaceted development challenge, that would benefit from a comprehensive sustainable development analysis in order to develop effective solutions. Thus, in this report, a systems model is applied. The analysis recognizes that siloed actions will always be incomplete. Moreover, policies undertaken without a comprehensive analysis of the underlying economic and social causes of air pollution, as well as the limitations of available funding, ineffective resource allocation, and weak monitoring, will not deliver results. As such, the recommended solutions for this challenge must incorporate cross-sectorial coherence and coordination, multi-stakeholder participation and cooperation. The systemic approach used for the analysis of air pollution serves as a model that can be adapted and applied to other multi-sectoral development challenges.

The current policies and programmes are focused on ensuring economic growth, which is a major challenge for inclusive and sustainable development.

Mongolia's past rapid economic growth has not sustained, due to world commodity price fluctuations and the country's heavy dependence on environment. Annual GDP growth declined from 7.9 percent in 2014 to 2.4 percent in 2015, and to 1.2 percent in 2016. The country slipped from a "medium-high income" status to a "medium-low income" according to World Bank ratings. During the last two years, the economy has grown, due to improvements in world commodity prices, an increase of production in manufacturing and services, and strong investment in mining. In terms of the competitiveness index, Mongolia is ranked 104th (2015/2016) out of 140 countries, and 101th (2017/18) out of 137 countries, resulting in no change over time.

Despite Mongolia's progress placing it among "high" human development countries, its persisting poverty, longstanding unemployment, and deepening inequality, are hindering the country's further progress. From 2000-2017, the country's Human Development Index improved by 20.5 percent, increasing from 0.589 to 0.741[1]. However, the Inequality-adjusted Human Development Index was 0.639 in 2017, which is lower than the overall index, reflecting a loss of 13.7 percent due to inequality in education, health and income levels. Although the 2017 female HDI value for Mongolia was 0.750, the male HDI value was 0.733, resulting in a Gender Development Index value of 1.023, and placing it in Group 1 (higher index), women are still not represented equally at higher levels of decision-making and gender-based violence remains a concern. Over the past 20 years, the poverty rate did not fall below 20 percent, and currently one out of three individuals is considered poor. This indicates that poverty may be an entrenched, persistent problem.

The benefits of economic growth have not translated into better livelihood options, and employment opportunities have not expanded. Even during the years of rapid Gross Domestic Product (GDP) growth, the unemplyment rate has not come down significantly. In particular, the unemployment rate among young people is still high.

Mongolia is one of the countries most vulnerable to climate change. An increased number of hot days and more frequent occurrence of drought and dzuds[2] is expected in the future. Due to climate change and other factors caused by human activities, the country's ecosystems are changing, leading to dryness of lakes, ponds, and rivers, degradation of land, and overall desertification. The increased frequency of droughts and dzuds, higher livestock mortality rates, and decreased productivity have adversely affected livelihoods of herders in remote areas, which, in turn, has led to an increase in migration to urban areas. This one-way migration is putting an increasing pressure on the capital city and other major urban centers, and contributing to increased air and environmental pollution.

The deepening of inequality and increased prevalence of population groups at "risk of being left behind" are important development challenges for the future. Mongolia's poverty rate varies between urban (27.1 percent) and rural (34.9 percent) areas. The poverty level is highest in the western (36 percent) and eastern (43.9 percent) regions, which have 1.5-1.8 times[3] more poverty than Ulaanbaatar. Unequal opportunities have contributed to significant one-way internal migration to Ulaanbaatar and other urban areas. There is a growing spread of "ger"[4] areas over the past three decades as people move for better opportunities. However, this has caused decreased access to services and increase in environmental pollution, violence and crime. Due to inequalities in opportunities, young people also tend to move to urban centers for better education.

Food supply and consumption also varies across rural and urban populations. Micro nutrient deficiencies are widespread among both rural and urban residents, and found to be particularly prominent among children and women. This is a key public health challenge.

Only 20 percent[5] of people with disabilities are employed and employers' perceptions of and attitudes toward people with disabilities are generally negative. School enrolment of children with disabilities has not increased for a number of reasons, including lack of infrastructure.

The policy and legal framework for ensuring gender equality is adequate, but the implementation is weak. This is largely due to a lack of gender sensitivity in policies and programs, weak governance capacity, a lack of gender-disaggregated data, or poor use of gender-related data and inadequate mainstreaming of gender issues in the policy planning and budget allocations.

The gap in life expectancy between men (65.9) and women (75.4) is 10 years which is twice the world average (4.6). Although

women's participation in economic, social and political life has improved, and women make up 37% of senior managers overall, but just 17.1% of elected parlamentarians. This trend has continued for the last ten years. Although, the education level of women is high, the labor force participation rate of women is lower (55.2 percent) than that of men (67.5 percent). The male-female salary gap is 11.4 percent. Gender-based violence remains a challenge for Mongolia's development.

It is essential for Mongolia to adopt "all-of-government" and "all-of-society" approaches for shaping and implementing development policies and creating an institutional framework. The adoption of "Mongolia's Sustainable Development Vision-2030" (MSDV-2030) in 2016, in accordance with the global principles of sustainable development has become the starting point for ensuring SDG localization.

Currently, there are over 200 policy documents in force. Some of them were adopted prior to the passage of the Law on Development Policy and Planning, which tend to contain duplications and contradictions. Policy integration has not been ensured for a number of reasons, including: scientifically unsound policy-making methodologies and implementation processes, inadequate situation analysis, a lack of thorough study of challenges, unrealistic estimations of economic and industrial potential and resources, lack of prioritization of the most immediate issues, uncertainties in financing sources, clear division of responsibilities, expected results and timeframes, and inadequate involvement of technical experts and other stakeholders in the process.

An insufficient legal environment for development policy and planning system also contributed to the lack of an integrated policy environment, consistency, coordination and weak monitoring mechanisms.

Although Mongolia has successfully initiated the process of SDG localization, it needs to undertake critical reforms to further improve its institutional framework. A weak regulatory framework and processes in relation to the SDGs contributes to inconsistency between long, medium, sectoral, and local development policies. This, in turn, adversely affects the continuity, integration and comprehensiveness of development policies and effective step-by-step implementation of the SDGs. In order to improve the country's policy planning and implementation mechanisms, and clarify roles and responsibilities, there is need to ammend the Law on Development Policy and Planning.

A progressive improvement in SDG indicators, strengthening of capacities, data methodologies, and establishment of data floors are key priority areas for monitoring, recognizing that what is not measured is often not done. Disaggregation of data by regions, urban-rural, gender, and other population groups, will help identify and better include disadvantaged groups, and ensure their participation so that no one is left behind. The National Statistics Office has carried out data readiness assessment on SDG monitoring four times. The assessment defined indicators, methodology, and information sources for calculating 50 percent of the globally recommended 244 SDG indicators.

It is important to develop and improve methodologies, data sources, and information flow for the collection, dissemination and estimation of SDG indicators, jointly with respective ministries, international organizations, NGOs, private sector, professional associations, and research institutions.

It is important to focus on the following six issues to successfully implement the SDGs in Mongolia:

Ensuring comprehensiveness, coherence, continuity and sustainability of policies. The main reasons for inadequate policy implementation lie with unscientific policy-making methodologies, lack of research

and evidence-based implementation processes,and setting "wish-list" type goals and targets.

It is possible to localize SDGs by incorporating them into long-term policies and ensuring their step-by-step implementation in the medium and short-term. This can be done by reducing the many incoherent and unfeasible policy documents, ensuring coherence between long and medium-term policies, and eliminating policy gaps.

Strengthening the institutional framework. Political instability as a result of frequent changes in the government has been a major obstacle in ensuring institutional excellence. Over the last 28 years, the average term of a government was one and half years, which affects policy stability and loss of institutional memory. Civil service reforms to address this are underway.

At present, policy planning in Mongolia is typically undertaken by Councils or Working Groups (in many cases temporary type) mandated to ensure policy coherence and coordination and maintain monitoring or oversight. This process needs to be reviewed. To overcome these limitations, the Law on Development Policy Planning needs to be amended with provisions to establish a central agency in-charge for policy development and coordination.

Establishing the coordination mechanism for SDG implementation. SDG implementation is slow at both national and sub-national levels. This needs to be accelerated by institutionalizing coordination mechanisms with clear roles and responsibilities and performance-based monitoring and evaluation systems. Major bottlenecks in development policy implementation are the availability of resources and capacities, public awareness and the extent of multi-stakeholder participation, especially of the most disadvantaged population groups.

Strengthening the monitoring and evaluation system. While the SDGs have been adopted, monitoring indicators and targets have not been fully defined. Despite some progress in the process of improving indicators for SDG monitoring, full SDG localization and the definition of local level indicators are still pending. Indicators for the MSDV-2030 and SDGs need to be aligned. Both quantitative and qualitative data can be used to strengthen the SDG evidence base, ensuring appropriate transparency standardization and quality control of these data inputs.

Making information more transparent leads not only to improved oversight, but also contributes to changing public perception and awareness.

Developing a financing strategy for the implementation the priority objectives towards achieving SDGs. A sound financing strategy is critical. It needs to include not only the estimated financing needs, but also allocations aligned with policy priorities, sources of funding from public and private stakeholders, and resource mobilization strategies. Three years have passed since the adoption of Mongolia's long-term policy but a financing strategy has not yet been developed. This is another example of a gap between policy intent and implementation, revealing silos in policy planning and budgeting.

Ensuring multi-stakeholders participation and partnerships. Inadequate awareness and knowledge about development policies and the absence of a legal environment can be impediments for policy implementation, monitoring, accountability and transparency. Transparency of information not only helps better monitoring but also contributes to raising awareness among the public.

CHAPTER 1

VOLUNTARY NATIONAL REVIEW REPORT: PROCESS AND METHODOLOGY

1.1. Voluntary National Review Report Preparation Process

The Government of Mongolia initiated and prepared its Voluntary National Review Report for SDG implementation. The Voluntary National Review (VNR) Report preparation process took place under the Prime Minister's guidance, starting on 30 May 2018 and continuing over a one year period. The National Council for Sustainable Development, under the Prime Minister, took the decision to prepare Mongolia's VNR report in the meeting held on the 30th of May, 2018. The National Development Agency was mandated to lead this process.

As per the Prime Minister's Order No. 165 dated 28 September 2018, a Working Group headed by the National Development Agency (NDA) was established. The Working Group consisted of representatives from the government, non-government organizations, academia, and private sector. In addition, an Advocacy Team created under the Working Group was mandated to raise public awareness of the SDGs and VNRs.

The VNR is an outcome of a multi-stakeholder participatory process. Mongolia's VNR preparation process involved over 10 consultations, and the entire process was highly participatory (Figure 1.1.).

At the first national-level discussion organized in October of 2018, over 100 participants together determined the content and scope of the Report. A systems analysis approach was introduced during these discussions. At the second national consultation in April 2019, 160 participants discussed the draft Report and provided their feedback in order to reach a consensus on the issues for the review.

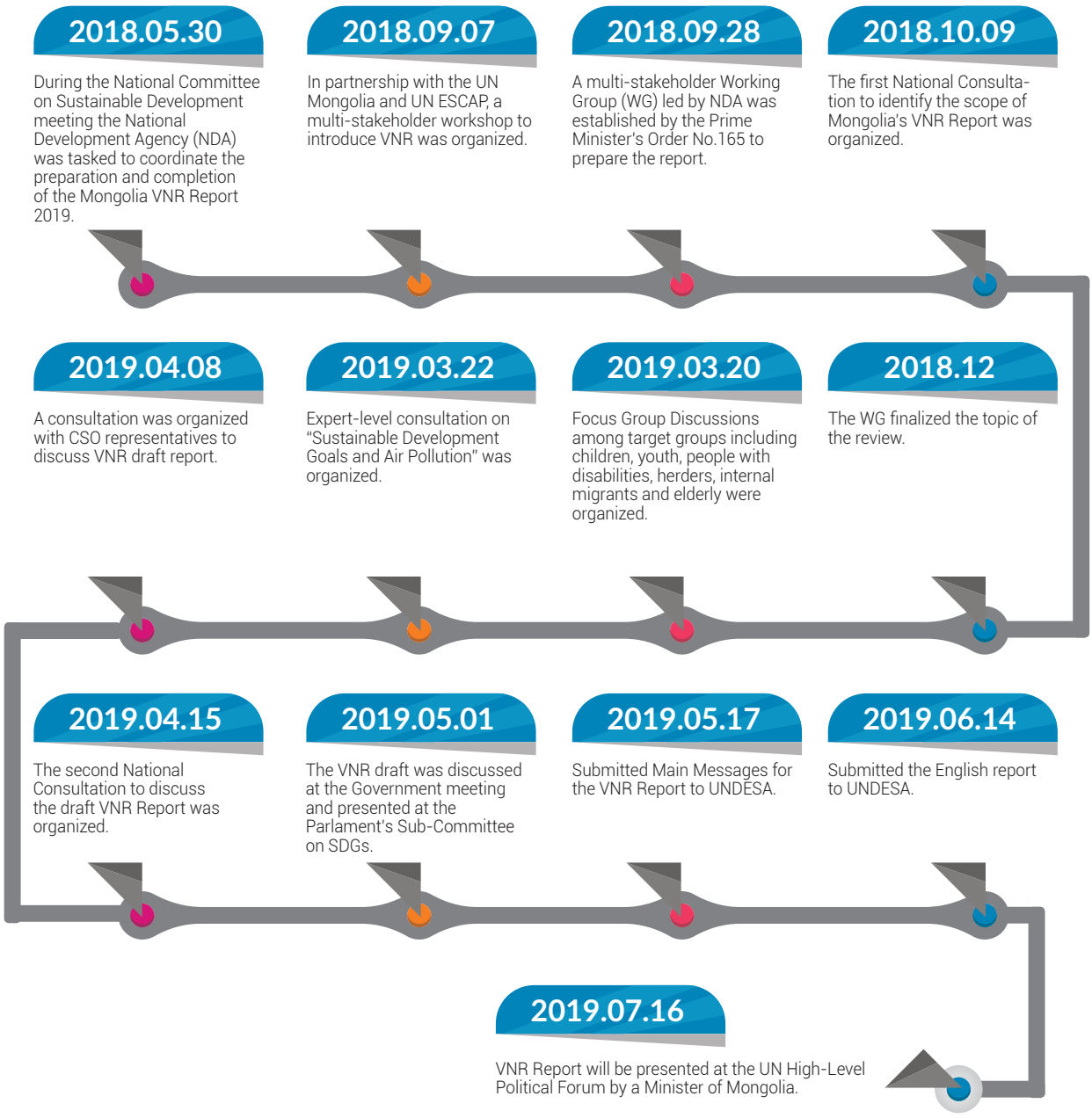
An important principle guiding the VNR work was "Leaving No One Behind". Key population groups at-risk of being left behind[6] were specifically identified for focused dialogue - children, people with disabilities (PWD), youth of age 15-24 years old, herders, internal migrants living in *ger* areas of the city, and the elderly (detailed discussions in Section 3.3.). In March 2019, focus group discussions among these six population groups at-risk of being left behind were organized, during which participants provided information on issues they faced, their concerns, and interests, which helped to reflect their perspectives in the VNR. In April, the first Forum on "Children – SDGs" was organized and forum findings reflecting children's concerns were reflected in the review.

The Report takes up the example of air pollution as a development challenge of the country that cuts across SDGs, and discussed its causes, impacts and bottlenecks. This development challenge was analyzed through a systems lens. In March 2019, a consultation among sectoral experts, researchers, and development partners was organized, where the status of air pollution and adequacy of actions to reduce it were discussed. Participants recognized the importance of cross-sectoral coherence and coordination, and multi-stakeholder partcipation and collaboration.

During the VNR preparation process government organizations collaborated with the Civil Society Organizations Network by

exchanging information and organizing joint discussions and meetings. Government and civil society representatives agreed that the institutional structures for SDG implementation need to be improved, particularly the mechanisms to align the medium-to-short term and long term policies, strengthening the information transparency and oversight, which will result in better performance and accountability at all levels.

Figure 1.1. Mapping the VNR Preparation and Presentation Process



1.2. Voluntary National Review Report Preparation Methodology

A combination of methods and approaches were applied to prepare the VNR Report. The methodology included document reviews, policy analysis, focus group discussions, individual interviews, analysis of official statistics and administrative records, review of the various surveys, accessing, both, qualitative and quantitative data.

The VNR also explored data from the SDG dashboard, which shows all available data for 233 out of 244 globally recommended SDG indicators. The baseline for comparisons covered the years of 2015-2017 for 118 available indicators in Mongolia. Where possible, other relevant historic data series were also to carry out comparative analyses.

In analysing the example of air-pollution, the VNR applies a systems approach – an approach that can be easily applied to other complex multi-sectoral challenges. The analysis presents drivers/contributors of air pollution on the one hand, and identifies its immediate and secondary consequences on the other – both of which cut across different sectors and several SDGs. It documents steps currently being taken, and recognizes that actions in silos will always be insufficient.

The VNR finds that a major overarching bottleneck that hinders progress is the lack of coherence and coordination across sectors and stakeholders, with direct implications for policy. The way forward includes long-to-medium term actions at the national and sub-national levels required across stakeholders. The Report provides broad recommendations on strengthening the coherence of policies and actions to reduce the air pollution, ensuring the institutional coordination, improving the roles of the actors and promoting participation and knowledge of all stakeholders. The approach then identifies important bottlenecks that come in the way of progress which lead to key solution recommendations to overcome them.

The VNR experience yielded a number of lessons:

- It contributed to improving multi-stakeholder dialogue and building consensus among policy-makers, academia and civil society on development issues, their drivers, impacts, bottlenecks, inter-sectoral coordination, development policy planning mechanisms, institutional structures, and integrated solutions to overcome the bottlenecks;
- It strengthened participation of all relevant stakeholders, using a variety of tools suitable for the different audiences – working groups, consultations, meetings, focus group discussions.
- It boosted the capacity of participants on the MSDV-2030, SDGs and their awareness of prevailing policies and plans which can contribute to a shared understanding on sustainable development among a wider audience.
- It established platforms for participation, involving sub-national government representatives in national dialogue, to address regional concerns and inequalities and exchange ideas across sub-national entities.

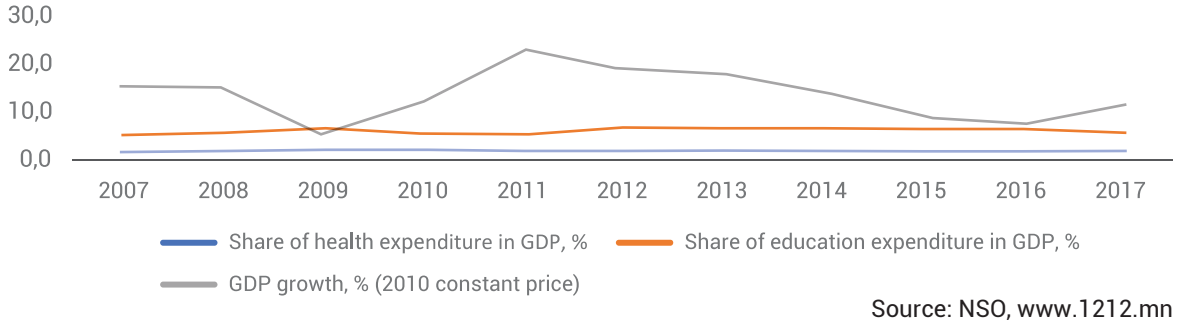
CHAPTER 2

WHERE MONGOLIA STANDS ON THE SDGS

Overview of sustainable development. This chapter reviews where Mongolia stands on the SDGs. The SDGs constitute 17 goals, 169 targets and 244 indicators for monitoring progress (Annex 1). Out of the 244 indicators, Mongolia has methodologies and information sources for 118 indicators. Currently, to strengthen the SDG evidence base, eight Sub-Working Groups consisting of representatives from different sectors have been established by the Chief of the Cabinet Secretariat's Order No. 29 dated February 2019 and are working to identify national SDG targets, indicators, and map the need for required data methodologies and sources.

Mongolia has made significant progress in the first three years of the implementation of the Sustainable Development Goals, but there are many issues to consider in future. For instance, although, Mongolia is globally ranked amongst countries with "high" human development by the Human Development Index, the country's worsening unemployment situation, persistent poverty and deepening inequality have shown that economic growth has not contributed adequately to social investment and improved living standards for all. Even during the years of high economic growth, budgetary allocations for health and education sectors have not increased sufficiently, as seen in Figure 2.1.

Figure 2.1. Trends in GDP Growth and the Share of Health and Education Expenditure in GDP, 2007-2017



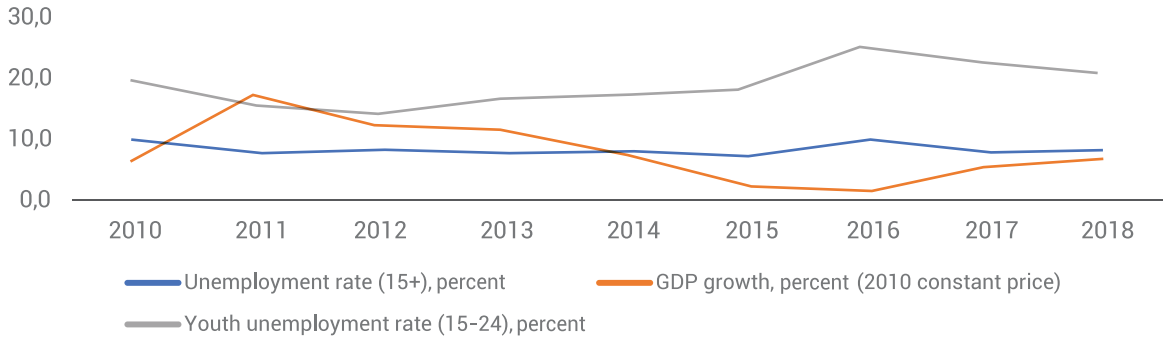
Source: NSO, www.1212.mn

Moreover, economic growth has not been inclusive, contributing to a significant widening of disparities, the most visible across rural-urban areas. The quality of and access to basic services is much better in urban areas, where there are significant deficits in rural areas, contributing to inequalities in people's health and education status, as well as in their overall quality of life.

The limited economic prospects and market opportunities in rural areas and inadequate availability of jobs, together with inequalities in overall living standards, are contributing to migration to urban areas.

The benefits of economic growth have not been well-reflected in improved livelihoods for the population; the number of people living in poverty has not decreased and opportunities for employment have not expanded. Even when GDP is increasing, the unemployment rate has not dropped significantly and, the youth unemployment rate in particular remains high (Figure 2.2.).

Figure 2.2. Economic Growth and Unemployment Level, Percent, 2010-2018



Source: NSO www.1212.mn

Along with poverty and inequality, certain groups of people are systematically excluded from being able to benefit from overall development. Specific groups at risk of being left behind are children, youth, elderly, people with disabilities, herders and internal migrants to urban areas that require the government's prioritized social policy.

The main economic sectors of the country are mining and animal husbandry, which are highly dependent on the environment and natural resources. Therefore, it is imperative for Mongolia to adopt capacity strengthening policies to promote environmental protection, disaster resilience, and disaster risk reduction in parallel with policies on economic development.

Several laws, policies and procedures conducive to SDG acceleration are in place, but their implementation is insufficient. Moreover, due to data gaps, the monitoring and evaluation of the implementationof the SDGs is hindered. Therefore, there is a need for substantial support to build capacity to monitor SDGs and strenghen the accountability framework.

Mongolia is committed to the successful implementation of the SDGs through appropriate development policy and planning processes. For this, it is necessary to improve the development policy and planning framework, strengthen coordination between long, medium and short-term policies, develop a financing strategy, expand development finance, successfully implement public service reforms and ensure the stability and integrity of policies.

The SDGs cannot be achieved by actions of the government alone – a "whole of government" approach will have to be complemented by a "whole of society" approach-drawing in contributions not just from all levels within government, but also from businesses, civil society, academia and especially disadvantaged groups.

Goal 1. End Poverty in All Its Forms Everywhere

Inequality has deepened and poverty rate has increased. The country's economic growth driven by the mining sector was not inclusive and stable. Moreover, growth was uneven across sectors and regions. The share of people in poverty increased by eight percentage points, in recent years from 21.6 percent in 2014 to 29.6 percent in 2016, revealing that one third of the population now lives below the national poverty line. People living close to the national poverty line are at risk of falling into a poverty trap.

Regional, urban and rural variations in poverty are stark. The poverty share in rural areas (34.9 percent) exceeds urban poverty (27 percent). The poverty rate is highest in the Eastern region (43.9 percent) followed by the Western (36 percent) region. This is 1.5-1.8 times the rate in Ulaanbaatar, which is home to 46 percent of country's population but accounts for 24.8 percent (2016) of Mongolia's poor[7] population.

Moreover, rural people, spread over vast territories, face isolation, confront extreme weather, as well as poor infrastructure and social services.

Ten percent of the population are identified as multidimensionally poor. The Multidimensional Poverty Index for Mongolia was 0.043 in 2016, and these people suffer simultaneously from lacking income, health and education. The understanding and measuring of multidimensionality of poverty of causes need to be improved and strengthened.

Ulaanbaatar is the destination of choice, along with other urban centres, for better opportunities. The spread of *ger* areas in Ulaanbaatar over the past three decades is visible. About 38 percent of people living in *ger* areas are living in poverty and large number of households with unemployed or less educated household heads, or which are dependent on social transfers and reliant on informal sector wages are many.

The development of labour intensive sectors, youth employment promotion and gender mainstreaming into government policies are key strategies to reduce poverty.

The country recognizes that improving social protection is an effective complement to countering poverty and making economic growth more inclusive. It can strengthen the reach of essential social services, guaranteeing access to essential health services, education, care and nutrition for children, and income security especially for working age, older people and people with disabilities. In 2017, 88.9 percent of children, 97.5 percent of the elderly, and 44.7 percent of the unemployed were covered by social protection floor[8].

Goal 2. End Hunger, Achieve Food Security and Improved Nutrition and Promote Sustainable Agriculture

Domestic production of the majority of essential food items is adequate, but dependence on imports of some food products remains. Food supply has been enough to satisfy 98.8 percent of the standard annual demand for meat and meat products, 99.6 percent of potatoes, 82.0 percent of flour and flour products. However in 2018, only 42 percent of the total demand for vegetables were met through domestic production[9]. Importantly, most of the supply of foods like fish, poultry meat, various rice, legumes, fruits, vegetable oils and butter is imported[10].

Micronutrient deficiencies are widespread and are particularly notable among children and pregnant women[11]. 90 percent of children under 5 years of age, 95 percent of pregnant women, and 82 percent of men have insufficient vitamin D levels. The prevalence of vitamin A deficiency in children under 5 years was 9.5 percent with an additional 60.1 percent of the same age children are at risk of falling into vitamin A insufficiency.

Exclusive breastfeeding of infants has declined. Among infants of 0-5 months of age, the decrease was from 65.7 percent in 2012 to 50.2 percent in 2018[12].

In Mongolia, the prevalence of obesity is high and increasing. This is seen in all regions and population groups. Overall, 46.2 percent of mothers with children under 5 years and 48.8 percent of men 15-49 years of age are overweight. The prevalence of overweight increased most dramatically in school-age children from 4.3 percent (2010) to 28.6 percent (2017) and one in three school age children are overweight in Ulaanbaatar (34 percent). This may adversely affect health in the future[13].

Goal 3. Ensure Healthy Lives and Promote Wellbeing for All at All Ages

Mongolians are living longer. Life expectancy at birth rose steadily from 63.2 years in 2000 to 69.9[14] years in 2017, up by 6.7 years. Female life expectancy (75.4 years) is almost 10 years more than males (65.9 years), which is twice the world average of 4.6 years. The lower growth in overall male life expectancy may be associated with factors specific to men, such as health risks from alcohol and tobacco use, unbalanced diets, and a lack of physical activity[15]. This phenomenon needs further analysis.

Mongolia was one of nine countries to meet the MDG's maternal mortality target. However, the maternal mortality ratio increased almost two-fold since then reaching 48.6 per 100,000 live births in 2016[16], indicating the fragility of Mongolia's health system and its vulnerability to external shocks, including economic difficulties. Early detection and surveillance measures on reproductive health, including compulsory testing for genetic problems, contributed to lowering the maternal mortality rate (MMR) to 26.9 in 2017. The MMR is still high in rural areas. The main direct cause of maternal mortality were identified as septic conditions (24.2 percent), hemorrhages (17.7 percent,) and preeclampsia (17.7 percent)[17].

Mortality among children has decreased. From 2010 to 2017, the child mortality rate for children under five years of age dropped to 16.7 from 25.6 per 1000 live births, and infant mortality rate dropped to 13.6 from 20.2 per 1000 live births.

Mongolia has done well in ensuring skilled birth attendance. During the period 2015-2017, over 95 to 99 percent of live births were assisted by skilled health personnel. However, the fertility rate among adolescent girls (aged 15-19) is high, increasing from 40.4 (2013) to 42.6 per 1,000 women in 2018[18]. Limited access to reproductive health services and poor awareness is leading to unwanted pregnancies among adolescent girls.

Infectious diseases and non-communicable diseases remain areas of concern. Although, there are many laws and policies on communicable diseases, people are still suffering from preventable illnesses. They are suffering needlessly from preventable diseases and too many are dying prematurely. Despite high immunization coverage (98 percent), there are still outbreaks of communicable diseases. Measles increased in 2015-2016, contributing to infant mortality.

The highest number of tuberculosis cases were detected among the people aged 15-34 years, and 65 years and above; moreover, 55.1 percent of tuberculosis patients are male, while 44.9 percent are women[19]. Of HIV/AIDS positive people, 61 percent are youths between the ages 25-39[20]. As of 2018, sexually transmitted infections account for 34.7 (2017) percent of total communicable diseases[21], and 42 percent of sexually transmitted disease cases were recorded among the population aged 15-24 years[22].

Nevertheless, the country's major concern remains non-communicable diseases[23], which constitutes 85.9 percent of mortality. Pollution, especially air pollution, is a growing contributor to premature deaths and morbidity, more so in urban areas. There are high rates of drug related crime among young people. Among them, 40.9 percent are unemployed and 76.3 percent are youth between the ages of 18-35[24].

Goal 4. Ensure Inclusive and Equitable Quality Education and Promote Lifelong Learning Opportunities for All

More than 98 percent of Mongolia's population 15 years old and above are literate. According to current data, nine years of compulsory education is nearly universal. In 2017-2018, primary, secondary and high school[25] enrollment rates reached over 98.6 percent. At the same time, 682 children aged 6-14 years old have dropped out of schools. Children aged 2-5 years old attend kindergarten and other pre-educational institutions on a voluntary basis.

Photo Credit: www.mpa.mn

The quality of and access to education, human resources and training programs vary across urban and rural settlements, regional and district levels. The quality of education offered by private and public schools differs. Poor education quality and limited access to education for herders' children, children with disabilities, children from poor families, adolescent girls and young mothers remains a future challenge.

Educational facilities do not always meet required standards. Many schools lack space, training and learning materials, or adequate textbooks. Frequent changes occur in school curriculums related to instable government policies. Classrooms at public schools in Ulaanbaatar are operating over its capacity by 1.5-2.0 times the national standard[26] mainly because of population concentration. Due to high classroom overload, the burden on the teacher increases and the quality of

education is adversely affected. In the 2018-19 school year, 28 schools ran 3 shifts a day in UB. This can have a negative impact on the cognitive development of young children.

There are 798 schools operational in Mongolia, and the survey of 770 schools reveal that 54 percent are connected to centralized water and sanitation facilities, while 11 percent still use water from unsecure water sources. As of 2017, 96.6 percent of schools are connected to electricity, 94.8 percent are supplied with training computers, and 67.8 percent have internet access.

Since 2015[28], sustainable development education concepts have been adapted and included in pre-school, primary, secondary, secondary and tertiary educational curriculums. The updated curricula is in the implementation stage; in the future, sustainable development issues should be reflected in teachers' as well as students' performance assessments.

Young graduates often face difficulties finding jobs at the labor market. As of 2018, 18.1 percent of the total unemployed were graduates from technical and vocational schools whose 29.7 percent were graduates from universities and those with bachelor degrees[29]. This shows that higher education does not always provide transformable and necessary skills to meet labour market requirements.

Goal 5. Achieve Gender Equality and Empower All Women and Girls

Mongolia is ahead of most Asia-Pacific countries on gender equality, but challenges remain. Gender equality needs to be boosted in Mongolia's specific context. Good legislation, high female education and health achievements have not translated into equal opportunities in work or decision-making and gender-based violence remains a concern.

The fact that the female HDI value for Mongolia is 0.750, placing it higher than the value for males (0.733), resulted in Gender Development Index (GDI)[30], greater than one (1.023), placing Mongolia's into Group 1 in terms of the GDI. However, Mongolia's Gender Inequality Index (GII)[31] is 0.301 placing it at 65 among 160 countries worldwide (2017). This is higher, by 0.012 points than countries in the "high" HDI category (0.289) and lower by 0.011 points than the average of the Asia-Pacific region (0.312).

Women are better educated but participate less in paid work, on average. Although 91.2 percent of women compared to 86.3 percent of men aged 25 years and above have secondary education and higher, women's labor force participation is only 52.2 precent while men's is 67.5 percent[32]. Moreover, the average wage difference between men and women is 11.4[33] percent and employed women are more likely than men to be additionally responsible for unpaid housework and care.

Women's participation in higher decision-making roles remain low. Although women's participation in economic, social and political life has improved, and women's share at the "expert" level is nearly double that of men, their share in higher decision-making positions remains lower than men's. At the senior management level, women constitute 36.7 percent (2016) while their share of parliamentary seats is 17.1[34] percent (2016). This trend has continued for the past ten years.

Gender-based violence remains a challenge. From the age of 15, 17.3 percent of women have experienced non-partner physical violence during their lifetime and 4.5 percent experienced it during the last 12 months[35]. In respect to child sexual abuse, 1 in 10 females experienced it before the age of 15

and one in seven have experienced (child) non-partner sexual abuse. During the last 12 months, about a quarter of women (23.6 percent) experienced physical, sexual and psychological violence. The proportion of women aged 30-34 who experienced violence was higher (32.5 percent), while the proportion of women aged 55-59 who experienced violence was least (10.1 percent)[36].

Goal 6. Ensure Availability and Sustainable Management of Water and Sanitation for All

Access to safe drinking water and sanitary facilities is inadequate. Access to safe drinking water and sanitation is a human right. The share of population with access to safe drinking water was 84 percent in 2015, while the share with access to sanitation and hygiene was lower at 59[37] percent. However, evidence on the population's access to these services is still uncertain due to gaps in available data and information from different sources. This is related to the lack of an integrated approach and methodology to collect data and information. For instance, some organizations follow 14 categories to collect data, while another entity applies a classification system with less categories in regards to safe drinking water sources. Some Mongolians are not connected to centralized sewerage systems, and more than half of the people use a open pit latrines. This is an indication of human right violation.

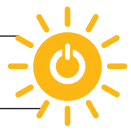
Photo Credit: A boy at the well @ Unicef Mongolia /2017 Mungunkhishig

Access to safe drinking water and sanitation is unequal across urban and rural areas. As of 2015, 94 percent of the urban population and only half of the rural population have access to safe drinking water[38]. In terms of sanitation, 66 percent of the urban and 41 percent of the rural population respectively use basic facilities (pit latrines). As of 2016, 27 percent of the urban population and 18 percent of the rural population are connected to sewerage. Only 20 (about 6 percent) of total 334 *soums*[39] have a centralized water supply network. Residents of the remaining 300 *soums* provide their water from public and private ground water wells built by state, corporate or private funds. Besides this, the drinking water quality in 10 percent (34) of *soums* does not comply with the national water standards – posing a very high health risk to people in these areas. In Ulaanbaatar, nearly 45 percent of residents are connected to a centralized water distribution system, while residents of *ger* districts have access to their drinking water from wells connected to the central water supply network or private ground water wells[40].

Water pollution of the rivers close to urban settlements is increasing. Water consumption per capita is increasing due to a growing population, mining activities, industrial use, urbanization, and changing lifestyles[41]. Alongside this trend, water pollution is increasing too. For instance, the Tuul river is being significantly polluted by industrial' operations such as leather and wool processing plants, and the central sewerage facility which disposes waste water into the river. The Tuul River Basin, one of 29 river basins that covers 3.2 percent of the country's territory, provides water for the capital city, home for 46.2 percent of the total population. As a consequence, its ecosystem is degrading, causing adverse impacts on people and livestock along the river basin[42]. In addition, the demand for water supply and sanitation services continues to increase as the population of Ulaanbaatar expands due to ongoing migration from rural areas. As a result of this phenomena, the central waste water treatment plant with a capacity of 170,000 m^3 per day, receives a large volume of wastewater that far exceeds its capacity and discharges 170,000 to 190,000 m^3 of improperly treated wastewater into the Tuul River daily[43].

There is a need to improve water resource management. Although Mongolia has a number of effective legal and policy documents in force governing water resources management and their sustainable usage, there are multiple ministries and agencies responsible for water management and sanitation, which creates duplications or gaps. For instance, the basis for successful implementation of Integrated Water Resource Management is stakeholder participation, however, different stakeholders have not been able to adhere to mutual agreements in addressing trade-offs. There are challenges in improving the understanding the value of water, improving payment mechanisms for water usage under the Law on Natural Resources Use Fees within current institutional mechanisms. Thus, there is an emerging need for ongoing cross-sectoral coordination, establishing water architecture and enhancing good water governance[44].

Goal 7. Ensure Access to Affordable, Reliable, Sustainable and Modern Energy for All



Increasing access to electricity remains a major issue. As of 2017, almost 96.7[45] percent of all households have access to electricity, while 31 percent (numbering 276,565 households) are connected to the central heating system, of which 74 percent are in the capital city[46]. Unfortunately, energy is overwhelmingly coal-based.

Although progress has been made to provide electricity to *aimag*[47] and soum centers, most *bagh*[48] centers still have limited access to electricity. The majority of *aimag* and *soum* centers outside of Ulaanbaatar still have limited access to heating services, and use outdated and inefficient firing stoves. The main source of thermal energy in *ger* district households is raw coal. Rural herders use traditional methods like wood (in some regions), bushes, and dry dung for fuel.

The current thermal power plants are not meeting the growing demand for energy. From the total electricity generated in 2017, 95.7 percent was from thermal sources, 2.86 percent from wind and solar power, 1.38 percent from hydroelectric power plants and 0.1 percent from other sources[49]. Overall, 80 percent of electricity supply is from domestic energy production[50] and 20 percent is imported.

Energy consumption in Mongolia is primarily concentrated in Ulaanbaatar. The government made a decision to double the capacity of coal fired thermal power plants to meet the growing demand for energy in the city. Considering current circumstances, these thermal power plants will be based on raw coal. In the future, it is important to focus on increasing the use of renewable energy.

Mongolia has enormous unutilized renewable energy opportunities, which have not been tapped in the interest of sustainable growth. Evidence shows that although wind power generation produces more costly energy than coal fired power plants, it can prevent 180 thousand tons of carbon dioxide emission annually and can save 122 thousand tons of coal[51], and protect 1.6 million tons of clean water.

Photo Credit: www.mpa.mn

Private sector solar and wind energy projects are located in conjunction with the overhead electric power transmission lines in the Central region. However, these transmission lines have reached their technical capacity and it is impossible to link new sources until they are expanded. A considerable amount of time and money will be required to expand, renovate, and increase the capacity of the main transmission lines and substations.

Maintaining consistent energy unit prices with legal backing and energy purchase agreements will help to mitigate risks associated with the high cost investments in the renewable energy sector.

There is need for increased efficiency in the energy sector and price rationalization. Consumers face differential tariffs for energy. The national average unit price is ₮ 145.85 while *ger* district energy is charged at a relatively low rate of ₮ 112[52]. The heating tariffs for consumers are 2-3 times lower than the actual cost in Mongolia. The government is responsible for the losses incurred in providing consumers with cheaper energy supply. While progressive pricing policies and state regulation of tariffs can be an important tool to counter inequality and address poverty, it also increases financial losses in the energy sector. Hence, efficiencies become very important.

Renewable energy pricing and tariff difference is regulated by "feed-in tariff" (tariffs on energy prices to support renewable energy), which is consistent with the principle of providing consumers with cheap and reliable energy supply[53]. However, the feed in tariff is 77.81 ₮/kWh, after which the license holder produces renewable energy and supplies to the central system. This situation creates an increase in electricity prices for consumers.

Goal 8. Promote Sustained, Inclusive and Sustainable Economic Growth, Full and Productive Employment and Decent work for All

Mongolia's rapid economic growth was not sustained over time. Due to fluctuations in world commodity prices and excessive dependence on the mining sector, Mongolia's economic growth has been unstable. The country's GDP reached its highest peak of 17.3 percent in 2011. However, in just five years time, it declined to 1.2 percent in 2016. At the time, the World Bank assessed Mongolia as "medium-high income" status, but only a year later the country slipped to a "medium-low income" status. However, in the last two years, declining growth trends have reversed, increasing to 5.3 percent in 2017 and 6.9 percent in 2018[54], due to an increase of productivity in manufacturing and services and strong investment in mining[55]. This positive trend is expected to continue until 2020, but care will be needed to take account of global economic development trends and Mongolia's 2021 debt repayment obligations. There is no change in the country's competitiveness – Mongolia ranked 104th rank out of 140 countries (2015/2016) and 101th out of 137 countries (2017/18) on the competitiveness index[56].

The country's economic growth has not translated into employment opportunities. In last decade (2007-2018), the overall national unemployment rate dropped slightly from 9.2 percent to 7.8 percent while a larger decline was observed among women, from 9 percent to 7.1 percent. But about a quarter of all employed persons were "working poor", and one-third of the working age youth (aged 15-24 years) were poor[57].

Photo Credit: @ILO/Byamba-Ochir Byambakhuu

The unemployment rate among youth aged 15-24 years (25.3 percent in 2018) is three times higher than the national average. This rate is significantly higher among young women, in *aimag* centers and Ulaanbaatar. Young people migrate to urban settlements for better opportunities, which increases urban unemployment. The unemployment rate among urban youth (aged 15-24) is 17.9 points higher than the national average[58]. Almost all unemployed 15-24 year olds are looking for work for the first time, indicating that they face more challenges in accessing or re-entering the labor market. For instance, more than half of all youth in the 25-34 age-group are still looking for stable work, and another 40 percent have not yet undertaken the school-to-work transition. This is due to their interest to attain more education, and mismatches between their skills and expectations from employers, which results in on average 2.9 years taken to find their first jobs.[59] This not only leads to lost opportunities for youth, but also for the country as whole.

Traditionally, youth issues have always been at the center of policy. But youth-related policies and programs remain as stand-alone interventions that are poorly linked with the national development policies and programs, which constrains full partcipation of young people in the development process.

Decent work is also a challenge. There is high demand for decent employment to overcome low productivity and widespread informal employment. Over the past decade, 2006 to 2016, the share of persons engaged in informal employment more than doubled from 12.7 to 26.3 percent, thus one out of four persons employed in non-agricultural activities in Mongolia was in informal employment[60].

People are working long hours with less pay. Virtually every fourth person in paid employment works for low pay. More than 41.2 percent of persons (49.1 percent of men, 36.2 percent of women) employed in Mongolia worked excessive hours (more than 48 hours per week) in 2016. About 18.2 percent worked 49-59 hours, 23.2 percent worked more than 60 hours per week[61].

Although, the government has implemented extensive measures towards eliminate child labor, the number of working children is increasing, requiring urgent action. The number of working children between the first survey (2002-03) and the latest survey (2011-12) increased from 10.1 to 16 percent or by 6 points over the decade. In particular, this figure has risen among 10-14 year olds. In 2011-2012, one in five children aged 15-17 years old were engaged in child labor. More in-depth investigations on forced labor and the worst forms of child labor are required.

Goal 9. Build Resilient Infrastructure, Promote Inclusive and Sustainable Industrialization and Foster Innovation

Developing infrastructure will contribute to more equal delivery of social services and expansion of businesses at local levels. Because Mongolia is a landlocked country, infrastructure development, especially the expansion of transport networks, will provide the basis for promoting equality in social service delivery to all parts of the population. It can also build local businesses, international trade, and tourism. The length of improved roads reached 10.6 thousand kilometers by 2017, and most *aimag* centers are connected with the capital city by paved roads. In addition, conventional and improved road length reached 102.6 thousand kilometers, significanlty increasing passenger and freight turnover, accounting for 57.8 percent of total freight and 98.4 percent of all passengers.[62] In recent years, measures have been taken to develop other transport sectors, including the step-by-step introduction of competition in the aviation market, improvement of aviation safety, increased international flight routes, and renovation of airports. The number of transit passengers increased by 11.8 percent in 2017, based on Mongolian airspace. Works to gradually expand railway transportation and establish logistic centers have been initiated.

Although the expansion of the transport sector has contributed to investment promotion and on increase in the availability of food supply and services in remote areas, there is still a lack of an integrated logistics network that meets regional social needs and that provides safe and convenient services leveraging information technology. In particular, infrastructure development within *aimags* and inter-*aimags* remains weak. In addition, road quality deterioration due to climatic and geographical factors, requires additional funding for maintenance. Inequality due to geographical location can be reduced by strengthening the

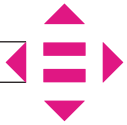
coordination and regulation of policies relating to the transport sector, building better assets, improving utilization, boosting the capacity of human resources and by enhancing cooperation among stakeholders.

The industrial sector base remains narrow and largely low-tech in Mongolia. In 2018, around 70 percent of total industrial production was from the mining sector, approximately 20 percent from manufacturing, and 8 percent from other sectors[63]. In terms of exports, only 10.7 percent of total exports are from the manufacturing sector, while low technology products occupy 97 percent of export products[64]. Manufacturing value added per capita is $ 215, and the proportion of medium and high-tech in the total manufacturing is 6.66 percent (it is 55.34 percent in Japan, Singapore - 80.38 percent in Singapore, and 41.38 percent in China)[65]. This indicates that production lines and technology are not renewed and the knowledge-based economy base is still weak. Lack of funding for science has become one of the factors negatively affecting the development of production based on high technology and innovation. The share of expenditure on research and development sector was 0.04[66] percent of GDP in 2017, only.[67]

There is potential for new technologies and innovation to increase SME productivity, however it is constrained by lack of funds. In 2016, out of total registered entities in the business registry database, 78 percent are small and medium-sized enterprises. The SMEs play an important role in accelerating economic growth, while they contributing to an increase in jobs and competition in goods and services. SMEs spend over 10 percent of total revenue on accessing credit - interest, fees and commission expenses - which limits the opportunities for funds to be used to introduce technology and innovation[68].

Despite rapid growth in information and communication networks, there are still differences between urban and rural areas. The number of Internet users reached 2.9 million in 2017, which is 4.5 times higher than the past five years, with 94[69] percent of the population using the Internet. Mongolia is one of the 10 countries[70] that have the cheapest internet and data usage has increased steadily in recent years. Eight out of ten people between the ages of 15-60 years, or 1.7 million people, use some type of social network[71]. As a result of a number of projects related to transferring public services to electronic form (such as a kiosks, Khur system, electronic tax system), individuals have timely access to many government services, and the workload of public organizations has reduced. While cellular telecommunications and Internet services have penetrated extensively to *aimags* and *soums*, their availability for rural people remains less than urban. For example, there are 26 *soums* nationwide that are not yet connected to cable. In 2017, the number of mobile users per 100 people was 127.6 in Ulaanbaatar while there were less than 80 users in Bayan-Ulgii and Bulgan *aimags*. The number of LTE or 4G users per 100 population in Ulaanbaatar were 26 while there were around 5[72] users in the *aimags* mentioned above. There is a lack of cyber security and its application.

Goal 10. Reduce Inequality within and Among Countries



Inequality is recognized as a serious challenge. Key human development indicators have improved since 2000, but inequality is a concern. During 2000-2017 the country's HDI value improved by 20.5 percent[73], up from 0.589 to 0.741, but the Inequality-adjusted HDI was lower at 0.639, losing 13.7 percent due to inequalities in

education, health and incomes. The Gini coefficient in consumption was 0.32 (2016), with the highest level of 0.34 in Ulaanbaatar, followed by 0.30-0.32 for *aimag* centers. The average consumption of the richest 10 percent of the population is 7.7 times higher than the poorest 10 percent (8.3 in urban and 6.3 in rural areas), indicating high inequality[74].

During the past 20 years of relatively high economic growth, the living standards of people with lowest 20 percent of consumption have changed very little, which indicates that inequality has not been affected[75].

These disparities are directly linked to extreme climatic conditions, distance from city centers, and insufficient infrastructure and social services. Regional disparities lead to people moving from rural to urban areas to look for better opportunities. This has increased the pressure on social services, urban planning, and contributed to air pollution. For example, most tertiary educational institutions (94.7 percent) are concentrated in Ulaanbaatar, and the rest located in other *aimags*, namely, in Arkhangai, Bayankhongor, Darkhan-Uul, Dornod, Zavkhan, Orkhon, Khovd and Khuvsgul *aimags*, which limits education opportunities for rural youth. These spatial disparities can be reduced to some extent through advanced tools for e-learning to benefit local communities. However, this will require several improvements including strengthening of curricula, learning conditions, and training of specialists.

There is a risk of losing the domestic labor force (out-migration) due to a lack of satisfactory employment opportunities. If the country keeps losing its labor force, it will negatively affect the growth of domestic companies and their competitiveness.

The adverse consequences of inequality are felt more keenly by people at-risk of being left behind. During the VNR preparation, population groups at-risk of being systematically left behind, who need better targeted policy attention and wider recognition in society were identified. These groups include: children, youth, disabled people, elderly, herders and domestic migrants. Policies are being put in place to ensure that these groups get focused attention. For instance, in 2018, some progress has been made regarding the adoption of education programs for children with disabilities, ensuring their right to quality of and access to education services. However, these efforts will succeed better when people's attitudes towards persons with disabilities change. Attitudinal changes need time, effort, and investment. This is discussed further in Chapter 3.

Goal 11. Make Cities and Human Settlement Inclusive, Safe, Resilient and Sustainable

It is possible to reduce urban concentration through more equal regional development. Around 65 percent of Mongolia's economic production is concentrated in Ulaanbaatar, with up to 60 percent of total manufacturing products, up to 90 percent of construction, up to 85 percent of wholesale and retail trade, and up to 98 percent of information and telecommunications are produced in the capital. Also, as of 2017, 124 thousand enterprises operated in Ulaanbaatar, accounting for 75 percent of the total number of enterprises in the country.

Photo Credit: Naranbayar Sukhbaatar

Ulaanbaatar, planned for half million people, is today home to 1.5 million people. If population growth in Ulaanbaatar continues at this rate, the city's population may reach 2 million in 2030 and 3 million in 2040. One in every three people living in Ulaanbaatar migrated between 1990-2015, and on average the city's population has increased 6 percent annually, which is 3.2 times higher than the national average. Although labour force and asset resources are concentrated and technological and innovation capacity is advanced due to increased population density and intensified urbanization, there are many negative impacts such as polluted urban environment, worsening of people's living conditions and widening of gaps in people's living standards.

Urban infrastructure is overloaded. There are around 386.2 thousand households in Ulaanbaatar as of 2017, of which 44.3 percent or 171 thousand households live in apartments and the remaining 55.7 percent or 215 thousand households live in *ger* districts with accommodation in traditional *gers* and private houses[76]. The human right to safe drinking water and sanitation is being violated for those in *ger* areas. This presents a major challenge for the city - the fact that there is a lack of clean water supply, central heating system, and social services in *ger* districts, which account for around 75 percent of the total city area. Moreover, unsystematic expansion of *ger* districts, regardless of land slope levels, is increasing the risk of people being adversely affected by natural disasters.

Ulaanbaatar alone produces 1.1 million tons of solid waste annually. There are 45 thousand households living in 1077 blocks of prefabricated apartments in 14 mini-districts constructed during 1965 – 2000 in Ulaanbaatar[77]. Due to delays in heating technology updates, the number of buildings with unmaintained facilities and outdated buildings have increased 3.5 times over ten years. As a result, there is unfulfilled demand for expansion of the capacity of power plants, while the quality and safety of buildings has also deteriorated significantly.

During the cold season, air pollution in Ulaanbaatar increases mainly due to the use of coal for *ger* heating and operation of coal-based thermal power plants, which results in continuous and substantial escalation of pollution levels. In order to reduce air pollution, a number of programs and projects have been implemented since 2010, such as providing improved stoves and fuels to *ger* district residents, improving energy efficiency, providing energy subsidies, enforcing construction standards, introducing green development and clean technology and re-planning of *ger* districts. As a result of the efforts to tackle air pollution, the 24-hour average particulate matter (PM_{10}) in 2012 decreased from 836 µg/m3 (reached highest level in January 2012) to 220 µg/m3, but it still remains higher than the national and WHO standards[78].

Goal 12. Responsible Consumption and Production

Mongolia does not have a stand-alone national policy commitment on Sustainable Consumption and Production (SCP). However, main activities in the 10-Year Framework of Programmes on Sustainable Consumption and Production[79] include introducing sustainable consumption and production into business operations; promoting environmentally sound practices among citizens and measures for waste management. These are reflected in policy documents such as the National Green Development Policy (2014), its implementation action plan (2016-2030), and the National Programme for Sustainable Development Education (2018).

The country needs to strengthen the efficient use of resources in production, as the country's economy is highly dependent on natural resources. The domestic material consumption (DMC) per unit GDP and DMC per capita are both high in Mongolia. For instance, the country's DMC per capita is much higher than some other countries with low natural resources. Its economy is heavily based on natural resource extraction and traditional pastoral animal husbandry, while and exports of mineral resources such as coal and copper concentrate are economically important. Improvements can lower the DMC. For example, the country produced ₮ 1.0 million of GDP by 7.9 tons of materials in 2016, while this ratio fell to 7.1 tons of materials per ₮ 1.0 million of GDP in 2017. However, as of 2017, domestic material consumption is estimated at 42.9 million tons in export products and 3.4 million tons in imported products, indicating that the country is exporting more material than its importing[80].

Urban pollution is increasing. There are many challenges due to increased amount of waste, new types of hazardous waste and limited capacity of the city waste management system.

Waste management is receiving policy attention. The volume of urban solid waste has grown in recent years. In 2018, 3.4 million tons of waste were removed from 390 centralized waste points nationwide. 91.8 percent of total waste disposal is household waste and 8.2 percent is industrial waste. Less than 10 percent of waste is being recycled, even though 50 percent of the total ordinary waste is recyclable. According to the preliminary inventory of hazardous waste (2018), 99 percent of the country's total hazardous waste is generated from the mining and heavy industry sectors[81]. In Ulaanbaatar, with almost half the country's population, 3000-3500 tons of waste on average is received at the three centralized waste points per day and removed by landfill technology. In 2009, the city generated 425.3 thousand tons of waste, which increased to 197 thousand tons in 2016. In terms of the waste sources, 14 percent of waste is originates from residential apartment areas, 38.9 percent from *ger* districts and 25.2 percent from business entities[82]. In order to improve waste management and increase waste recycling, the Law on Waste was amended in 2017. Measures were instituted to reduce the negative impacts of waste on human and environmental health, mitigate these risks and nurture responsible behaviour towards waste management among the population[83].

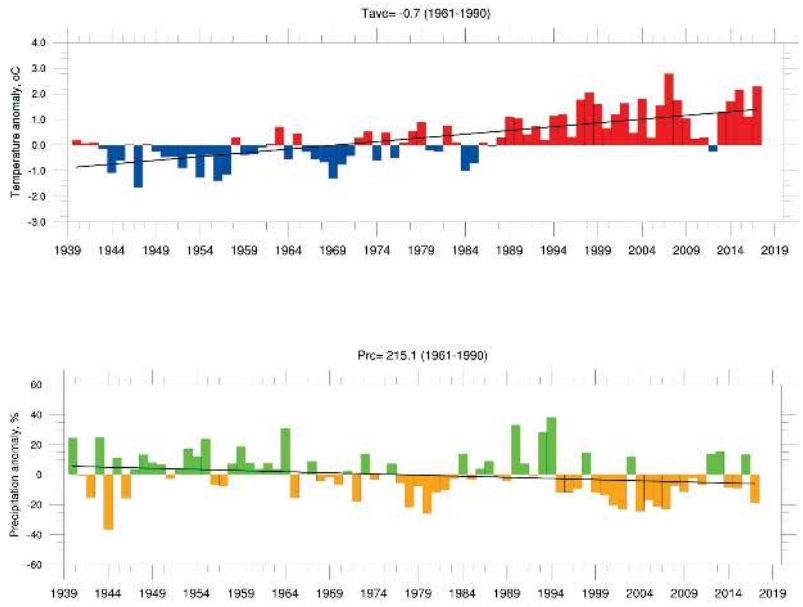
Attention is needed to promote credible sustainability reports by companies. There is an opportunity for the government to make a realistic commitment to institutionalize transparency of sustainability reports by companies, including evidence-based monitoring and reporting practices. In this regard, the following actions should be initiated immediately: encourage sustainability reporting by companies based on global principles and good practices as applicable to Mongolia; improve public

access to environmental management plans for all organizations with annual reporting on their implementation on both company and government websites; introduce reporting standards for the government; and develop indicators to be included in the reporting data in consultation with the business sector, including business and trade associations.

Goal 13. Take Urgent Action to Combat Climate Change and Its Impacts

Mongolia is one of the most vulnerable countries to long term impacts of climate change. Over the last 70 years, Mongolia's annual average temperature has increased by 2.24^{0}C[84], which is three times more than the global average increase. In the last 45 years, the number of cold days has fallen by 15 days and hot days have increased by 24 days[85]. Moreover, the proportion of land under permafrost was 63 percent in 1971, but decreased to 29.3 percent in 2016. From 2000 to 2015 21 percent of lakes, 12 percent of rivers and 15 percent of springs have dried out. However, because glaciers and permafrost is melting, some of these are being re-generated. The degradation is transforming to land desertification, and as of 2015, 23.1 percent of total territory has severely degraded[86].

Figure 2.3. Annual Temperature and Precipitation Change Over the Last 70 Years

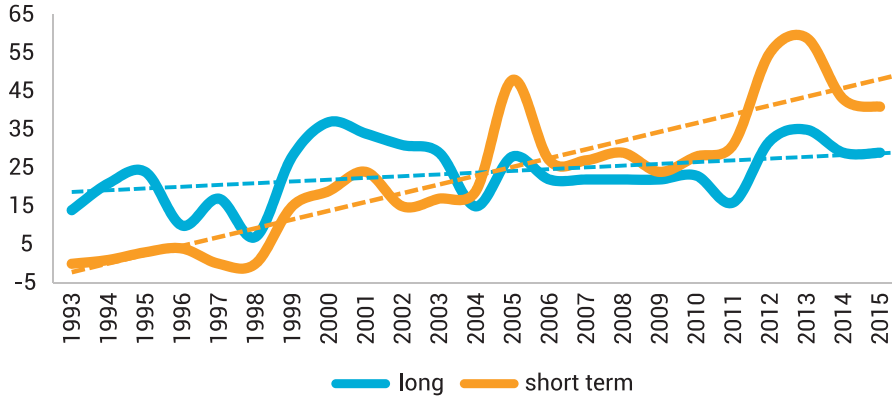


Note: The annual average temperature increased by 2.2°C (2.6° C in winter and 1.4 ° C in summer), while precipitation decreased by 7.3 percent (winter - 24 percent, summer - 7 percent). Warming in Central areas has intensified, causing decreased precipitation.

Source: MET, Environment and Climate Fund, 2018

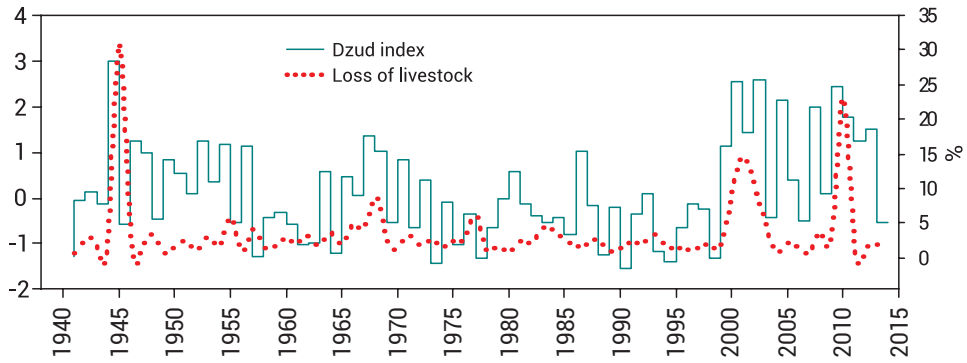
Climate change is affecting lives and livelihoods of the population. The frequency of extreme weather events (droughts, dzuds, floods, dust and snow storms) has doubled in the last two decades, and is expected to increase even further. The dzud in 2009-2010, which was one of 12 major dzuds over the last 70 years, caused are loss of 22 percent of national herds and impacted over 200 thousand households, including 8.7 thousand herder households who fell below the poverty line. In Mongolia, over 60 percent of the land is considered degraded because of a combination of pasture overgrazing and climate change[87].

Figure 2.4. Long-Term Variation of Short and Long Lasting Extreme Events in Mongolia



Source: MET, Environment and Climate Fund, 2018

Figure 2.5. Relation Between the Dzud Index and Loss of Livestock



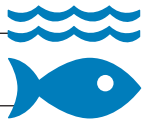
Source: MET, Environment and Climate Fund, 2018

The pattern of seasons has changed with increased winter precipitation and lower summer precipitation, coupled with more evaporation. This poses problems such as not enough water for pasture, crops, and livestock in summer; and deeper snow cover in winter, making it harder for livestock to graze.

Per capita GHG emissions are high in Mongolia. The country's high energy needs because of its long heating season,make Mongolia one of the most energy-intensive countries in the world. Energy sources are overwhelmingly coal-based with old technologies. Hence, the country has very high per capita emissions nearly 2.7 times greater than the global average, even though the country's total emissions are relatively small. These coal-based emissions are more concentrated in urban areas where population density is higher and the adverse impacts on health are greater. Moreover, there is high probability that particulate matter ($PM_{2.5}$ and PM_{10}) in the air is increasing pollution on plant and water surfaces after being passed along by the wind. More detailed research in this area is still needed.

To fulfill its UNFCCC commitments, Mongolia has to contribute to the global actions for climate change mitigation and adaptation. Hence, this issue is reflected in the country's national policy document as a specific objective. For instance, the "Nationally Determined Contribution" (NDC) is being developed in cooperation with partner countries with recommendations on the key ways to respond to climate change, identify opportunities to reduce emissions and increase CO_2 absorption and draw from all available financing mechanisms. In addition, the mid-term strategy to implement the Sendai Framework for Disaster Risk Reduction has been approved nationally and is being implemented based on a collaborative approach.

Goal 14. Conserve and Sustainably Use the Oceans, Seas and Marine Resources for Sustainable Development



As a landlocked country, SDG 14 is not directly relevant for Mongolia. However, its freshwater sources do need better management. Water is the basis of people's lives and livelihoods. Headwaters and other water resources serve not only domestic but also international needs for consumption and production, as well as providing the natural habitats of 74 species of fish. Hence, the government is working on identifying national targets and indicators under this Goal in accordance with specifics of the country.

Goal 15. Protect, Restore and Promote Sustainable Use of Terrestrial Ecosystems, Sustainably Manage Forests, Combat Desertification, and Halt and Reverse Land Degradation and Halt Biodiversity Loss

Mongolia fulfills its obligation in the environmental sector. The country has ratified 11 environmental conventions and three protocols[88] and reflected their respective provisions in sectoral policies and programmes, in line with the implementation of the SDGs. For instance, the revised and approved National Biodiversity Action Plan (2015-2025), which is the main document of the Convention on Biodiversity in 2015, is fully compatible with the strategic goals of the convention for 2011-2020, as well as Aichi targets[89]. The country is also committed to defining its long-term goals and indicators on conservation at national and local levels, and to ensuring their implementation. The State Special Protected Area (SPAs) network, responsible for maintainance and conservation of biological diversity, is designated to cover 30 percent of the total area by 2030, and as of 2017, 27.6 million ha or 17.8 percent of total territory are classified as SPAs. A total of 7.9 percent of the total territory or 12.28 million hectares of land is covered by forest, and the target is set to reach 9 percent by 2030[90].

Maintaining a balance between conservation and utilization in the environmental ecosystem is a serious concern. The territory of Mongolia is located in the transition zone of the Siberian Taiga forest and the Central Asian Steppes; a classic example of a landlocked dryland ecosystem. This ecosystem, with specific ecological and geographical features, contains over 400 different sub-ecosystems within 14 natural zones that come under extreme weather conditions with four seasons[91], harboring a large number of animal and plant species. However, the ecosystem has altered due to climate change and and an excess of other human activities (overgrazing, fire, illegal logging, poaching). There is degradation of 76.9 percent of the total territory, including loss of soil fertility and degradation of over 60 percent of total rangeland[92]. Moreover, the number of vegetation species are declining; numerous rivers, springs, lakes and ponds are drying up; and from 2005 to 2015, 1.400.000 ha of forest has degraded, and 52.000 ha has decreased[93]. Also, 41 native species are endangered[94].

There is an increased trend in environmental crime over the past two decades, with poaching, illegal mining and logging constituting a majority of cases[95]. To solve these issues, the government has reflected the national policy and programs such as the State Policy on Forest, the National Programme for Combatting Desertification, the National Programme on Biodiversity in the annual social-economic development

guidelines, and allocated funding for this under the annual budget. Moreover, multisectoral collaboration and cooperation was promoted, which helped to increase the financing to the sector.

Revenue from natural resource use is not properly spent on environmental protection and rehabilitation[96]. Although during past 5 years, revenue from natural resource use have increased by 1.5 times, expenditure on environmental protection and rehabilitation has increased by just 6 percent. The share of funds spent on environmental conservation and rehabilitation in the state budget is still low, and often inconsistent. For instance, the amount spent for environmental protection and rehabilitation was 37 percent in 2013, but decreased to 27 percent in 2017. In addition, capital investment has been used for other purposes, with only 14 percent used for environment protection and rehabilitation in 2017. Hence, it is necessary to increase funding and ensure revenue is used for intended purposes only.

Goal 16. Promote Peaceful and Inclusive Societies for Sustainable Development, Provide Access to Justice for All and Build Effective, Accountable and Inclusive Institutions at All Levels

Policies and strategies are directed towards human rights. Mongolia is in the process of reforming its national legislation in line with international norms and standards on human rights protection. This reform is aimed at promoting the active participation of civil society and enhancing institutional capacity to create and to improve human rights protection mechanisms at the national level. Focusing on the vulnerable groups at risk of being left behind will be beneficial to society and will help the parents, guardians and caregivers to be more productive in society. This will not only help the vulnerable groups, but will also help others as well. For example, the Law on Child Rights and Law on Child Protection have been adopted and implementation has begun. A child and youth development agency has been established at national and local levels and funding for child protection issues has increased from ₮ 0.4 billion[97] in 2016 to 5 billion in 2018 and 8 billion in 2019[98].

There are considerable challenges in implementing legal reforms for ensuring human rights. There are challenges related to law enforcement due to lack of citizen participation, common understanding and consensus at all levels, and building a shared understanding. In recent years, the rights of under-age children have been violated, and child abuse and domestic violence have shifted to hidden forms. Women who suffered from domestic violence tripled between 2012 and 2016[99]. Crime rate has dropped by 9.7 percent between 2007 and 2011, but increased by 41.5 percent between 2011 and 2016. The last decade average indicates that the number of crimes has increased by 655 cases each year[100]. Out of total recorded crimes, 41.3 percent were committed in rural areas and 58.7 percent in the capital city. Moreover, 42 percent of criminals and 48 percent of victims are youth of age 18 - 35 years old. Over the past 10 years, 27 percent of victims of crime were women, 6 percent were children. Overall, 5 percent are estimated to have died from the crimes committed.

Multistakeholder participation is important for eliminating human rights violation. Although improvements have been made to encourage civil society and citizens' participation in the delivery of public services and monitoring, not all sectors are equally involved. Further, the process has been slow. Civil society organizations have pointed out the numerous human rights violations such as violation of the rights of detained people by the police; restrictions on public media by the state; limitations on rights to hold meetings and gatherings; violation of

protection of children and victims; human trafficking; and discrimination against disabled people and other minorities. Therefore, there is a need to review these issues, to improve data and information collection, to detect and eliminate violations, to upgrade the process of combating crimes, to review crime investigation techniques, to change people's attitudes, and to improve cooperation between the state and CSOs.

Public trust towards law enforcement organizations has deteriorated. Deterioration in public trust is due to corruption cases and weak accountability and transparency in public institutions. Studies show that corruption is also committed in hidden forms at the public service is most vulnerable to corruption, that there is a low trust between businesses and the government and that the legal system is inadequate in the fight against corruption[101]. In addition, the public is disappointed in the government's inability to pursue charges against high ranking public servants involved in corruption[102].

However, as a result of government's measures, there is progress in corruption indicators. Mongolia has been continuously unsuccessful in improving its ranking on corruption, moving from 72nd in the corruption perceptions index in 2015 to 87th in 2016 and 103rd in 2017. However, in 2018, Mongolia ranked at 93rd, which was an improvement by 10 ranks compared to the previous year[103].

The issues mentioned above are all important, but there is specific need to strengthen the legal system, ensure enforcement of laws, improve the quality of services provided to citizens, ensure the transparency of public activities and extend information access.

Goal 17. Strengthen the Means of Implementation and Revitalize the Global Partnership for Sustainable Development

Mongolia is strengthening multi-stakeholder partnerships for sustainable development. Mongolia maintains diplomatic relations with 192 countries of which 190 are members of the United Nations and joined as a member state on October 27th 1961. Since 1990, the country has promoted active cooperation with development partners and other organizations.

In order to implement the country's development policy priorities and to finance the budget deficit, Mongolia receives foreign loans and grants on concessional terms from the international organizations and foreign countries. This Official Development Assistance (ODA) has decreased over the past 10 years. The ODA share in GDP, which was 8 percent in 2007, fell to 4 percent in 2016, and ODA per capita, which was $ 164 in 2007, dropped to $ 117 in 2014.

ODA disbursement by sectors shows that during 2011-2015, 50 percent of total ODA was spent on infrastructure sectors (roads, urban development, energy, and communications), while and 25 percent was invested in human development. Of the total ODA, 12 percent was spent on production (agriculture, mining, industry and trade), 8 percent on governance and economic reform, and 2 percent on the environment.

Mongolia's Defense and Military Force participation in the United Nations peacekeeping aimed at maintaining peace and sustainability, thus contributing indirectly to the country's economic sustainable development and expansion of the multi-stakeholder partnerships an cooperation with other nations.

The importance of managing private investment, foreign direct investment (FDI),

is crucial in the implementation of SDGs. Mongolia ranked 62nd out of 190 countries in the Ease of Doing Business rankings, which indicates improving foreign trust in the investment environment[104]. As a result, the total foreign trade turnover of $ 1584.7 million with only a small number of countries in 1990 has increased to trading with 163 countries and a turnover of $ 10.5 billion, while the number of Mongolia's export destinations reached 63 countries in 2017[105].

While it is important to localize innovative technologies within the partnership framework, there is still a limited environment conducive for knowledge exchange, including in newer areas such as artificial intelligence, big data, and other scientific innovations. This is indicated by a 2-4 times increase in the proportion of imports in GDP compared to other lower-middle income countries. The proportion of exported goods and services with low technology was 45 percent in 2017[106]. In respect of intellectual property, like the number of patents, the numbers have been insignificant and their application insufficient. Therefore, there is a need to improve the policy and legal environment for innovation and intellectual property, to build capacity, to increase funding for science, and to strengthen the link between the government, science, and the private sector.

It is necessary to ensure better alignment between financing and long-term development policy goals and to improve efficiency of spending and monitoring. There is a lack of monitoring and reporting of capital flows, and tracking the financing for implementing SDGs is unclear. Although the ODA received per capita is similar to other developing countries[107], its mobilization, allocation, use, monitoring, registering, and reporting are inadequate. Currently, 97 percent of foreign loans are fully registered, while only 40 percent of grants are registered[108].

Recently, a Development Financing Assessment was carried out, but no specific financial mechanisms linked to sustainable development has been introduced yet. There are many opportunities to mobilize additional funding for the implementation of SDGs, but these are not fully utilized and capacity remains weak.

It is very important to enhance budget efficiency by improving spending and allocate efficiency. At the same time, there is a need to define the National Integrated Financing Framework to support the mobilization of domestic and foreign financial funds, and align public and private financial resources towards MSDV-2030 and SDG implementation.

Monitoring policy implementation using data from various sources and with the involvement of the public will contribute to tracking and monitoring disparities and inequalities in regional development and ensuring that 'no one is left behind'. Data collected from official statistics and administrative records are reliable. However, SDG implementation monitoring requires wider coverage, better quality, and the need to incorporate other sources of data conducive to provide sufficient evidence.

CHAPTER 3

MONGOLIA'S SUSTAINABLE DEVELOPMENT-ENABLING POLICY ENVIRONMENT

Photo Credit: Mario Carvajal, 2008

3.1. Localising the Sustainable Development Goals

Mongolia is one of the first countries to incorporate the SDGs in its long-term development policy. The State Great Khural (Parliament) adopted the Law on Development Policy and Planning on 26 November of 2015. This law is the legal basis for establishing an integrated system of development policy and planning. It regulates the development, adoption, implementation, monitoring and evaluation processes of sectorial, national, sub-national level development policy documents.

The adoption of this law enabled policy-makers to re-assess and systemize the process of policy planning for the first time since the 1990s. It creates the legal basis for policy implementation such that policy outcomes are results-oriented and development benefits are accessible nationwide.

Following this, the adoption of the Mongolia's Sustainable Development Vision-2030 (MSDV-2030) in 2016 in accordance with the Law on Development Policy and Planning, was an important step torwards ensuring SDG localization and alignment of national policies with SDGs. The MSDV-2030 was developed considering the interdependent and comprehensive nature of economic, social and environmental pillars of sustainable development.

While the MSDV-2030 was intended to align

with the SDGs, the SDGs have not been fully incorporated. The coherence assessment between the MSDV-2030 and the SDGs carried out by National Development Agency (NDA) found that approximately 50-60 percent of the SDGs were reflected in the MSDV-2030. Thus, to strengthen alignment and to eliminate policy gaps, the government is currently undertaking a systematic review of all effective medium and short-term policies, assessing their alignment with the SDGs.

3.2. Ensuring "All-of-Government" Principle, Policy Coherence and Coordination

It is important to adhere to the "all-of-government" and "all-of-society" principles in the formulation and implementation of development policies in Mongolia. The SDGs require development policies to be holistic, scientifically sound, integrated, and incorporate multi-stakeholder participation. There are challenges to achieving a shared understanding of the interdependent nature of economic, social, and environmental issues for sustainable development, as there are to strengthening government capacity at all levels in assessing the impacts of policy interventions.

In the past, Mongolia has implemented several long-term policies such as the Development Vision of Mongolia (1996), Sustainable Development Program of Mongolia for 21st Century (1998), and the MDG-based Comprehensive National Development Policy (2008). During the past 28 years of transition from a centrally planned to a market-oriented economy, Mongolia adopted over 550 national policy documents, many of which have not achieved expected results and some of which have not been implemented.

In the past, a weak legal environment for development policy and planning has contributed to bottlenecks in delivering development benefits to everyone, resulting in unsustainable growth, a vulnerable economy, increased inequality in wealth and incomes, citizens' lack of trust in the state, and lack of common understanding on the country's development across stakeholders[109].

Currently, there are over 200 effective policy documents, and majority of them are not compliant with the Law on Development Policy and Planning. Consequently, these documents have tended to be marked by duplication, contradictions, and gaps. Many are not consistent with the country's development need on the ground and policy integration has not been ensured due to a number of factors. Some of the key drawbacks include scientifically unsound policy making and implementation processes, inadequate situation analysis, lack of thorough studies on development challenges, unrealistic estimation of economic and industrial potential and resources, lack of prioritization of the most immediate issues, uncertainties in financing sources, unclear division of responsibilities, lack of clarity about expected results and timeframe and inadequate involvement of technical experts and stakeholders in the process.

An insufficient legal setting for development policy and planning in Mongolia has contributed to a disjointed policy environment, policy inconsistency, lack of coordination, and weak monitoring mechanisms. Moreover, political instability has also been a significant factor. Over the past 28 years, the average operational duration of the government was just 1.5 years, which undermines policy continuity and consistency. Frequent changes in government policies and priorities have resulted in the preparation of too many policy documents without ensuring their consistency and coherence, which in turn, has negatively affected policy implementation and its results[110].

A review of the coherence and integration of medium and short-term policy documents for consistency across the spectrum of policies, with the development vision, and, thereby redefining development priorities, has been initiated.

In order to strengthen policy and planning mechanisms, the government has developed a methodology for ensuring policy coherence and identifying policy targets. This methodology has approved and amended into the Regulation for Developing Development Policies by Government Resolution No.294 of 2018. This amendment enables policy-makers to strengthen policy coherence of newly formulated policies.

But it is also necessary to review all policy documents approved prior the passage of the Law using the same methodology in order to improve coherence between the long and medium-term policies.

Furthermore, to systematically ensure coherence of policies approved prior to the adoption of the above-mentioned methodology with long and medium-term goals, including the SDGs, a Working Group including all state organizations with a mandate to formulate policies was established by the Prime Minister's Order No. 2 of 2019. While the Cabinet Secretariat is in charge of the overall management, the NDA is responsible for providing technical guidance to this Working Group.

Figure 3.1. Roadmap for Aligning Mongolia's Long Development Policy with the SDGs

While the coherence of the long-term development policy with the SDGs is being strengthened, medium-term policies and programs also need to be aligned with short-term policies and budgets.

The implementation of development policies consistent with the SDGs can be boosted through identifying policy targets, making the implementation mechanisms precise, developing a financing strategy based on detailed financial analysis of needs and financing sources, creating an evidence-based monitoring and evaluation system, and ensuring multi-stakeholder participation at all levels, along with policy coherence review and setting priorities.

For Mongolia, there is need for a Five-Year Medium-Term Development Program aligned with long-term sustainable development objectives of the country, which could become a significant step towards sequencing medium-term development policy targets to meet the country's development vision.

3.3. Directing Development Financing Towards Sustainable Development

It is necessary to develop financing mechanisms conducive to achieving sustainable development. It is important to mobilize additional resources for achieving long-term sustainable development goals, integrate planning and budgeting processes, and build capacity for identifying additional financing sources.

Recognizing the importance of financing for the SDGs and the need for the mobilization of substantial financing sources, Mongolia supports the implementation of the Addis Ababa Action Agenda adopted in

2015. This Action Plan reflects concrete measures on the mobilization of public and private funding from both domestic and external sources. It seeks to identify the priority investments needed to address economic, social and environmental challenges. Mongolia initiated the process of Development Finance Assessment[111] in 2018. The assessment has recommended introducing an Integrated National Financing Framework (INFF) for setting up a broad-based integrated management system to support the achievement of future long-term development. The example of the health sector (Box 3.1.) provides forward-looking directions for strengthening the alignment between policies, program classification and budgets with the SDGs.

Box 3.1. Aligning policies, program classification, and budgets with the SDGs: An example of the health sector in Mongolia

There is a fair amount of coherence between program classifications used by the Ministry of Health (MOH) and health sector policy priorities, which makes it easier to link with SDG indicators and goals. This classification is policy-based and furthermore, structurally much more suitable for budgeting for the SDGs.

The program structure used by the Ministry of Finance for this sector is similar to the classification of the health service expenditures of the classification of Government functions (COFOC). As this classification was created for statistical purposes rather than for budgeting, the challenge is to improve program classification to correspond with the budget as well. Thus an environment can be created for identifying the outputs needed to link SDG-related policies and targets with budgets and shifting to a program-based SDG budgeting, linking the budget classification with policies during the budgeting process itself. Proceeding to a new budgeting system such as this will lead to improvements in other elements of the budget cycle also, including strategic planning, monitoring, performance reporting and auditing.

Source: UNDP, Study on Ensuring coherence between medium and long term policies of Mongolia and SDGs and budget expenditures, pp. 5, 2018

Nevertheless, the government has not been able to develop an Integrated Financing Strategy on resource mobilization for MSDV-2030 and SDG implementation, mainly due to lack of coherence between medium-term planning and budgeting of sectorial ministries and the current practice of defining the Mid-term Fiscal Framework Statement based on short-term sectorial policy targets. Other reasons include lack of proper cost estimation, overly optimistic sectoral budgets proposed by ministries and not including opportunities in strategies to attract more funds from financing mechanisms such as public-private partnerships. Another bottleneck is the duplication of functions of the NDA and the Ministry of Finance as well as weak regulatory mechanisms to ensure consistency between planning and budgeting processes[112].

There are opportunities for increasing Official Development Assistance and tapping into other funding sources by identifying and implementing a sound financing strategy. It is, however, a challenge to assess the possibility of mobilizing additional public and private funding with current policy and budget planning processes, develop a resource mobilization plan according to integrated strategy and identify short, medium and long term measures required for SDG implementation.

There are possibilities to implement projects in specific sectors like the environment, renewable energy, infrastructure, reducing risks and increasing the efficiency of small and medium sized enterprises by mobilizing resources from new financing mechanisms such as global funds or support from other

international organizations. For this, it is necessary to improve the knowledge and understanding on accessing these funds, increase the local capacity for cooperation with these funds and raise resources in general.

The size and depth of domestic capital markets is still limited. There is a need to reduce loan interest rates by improving competitiveness in domestic capital markets, increasing financing opportunities for the private sector and especially SMEs, addressing challenges faced by SMEs to find financial resources for business expansion, improving the regulatory framework, strengthening supervision and ensuring transparency.

3.4. Creating Institutional Structures for Sustainable Development

Mongolia is working towards establishing the institutional framework for ensuring policy planning and regulatory mechanisms. There is strong political commitment towards achieving the SDGs. The Sub-Committee on Sustainable Development Goals under the Standing Committee on Social Policy, Education, Culture and Science of the State Great Khural was established in 2017 with the mandate to monitor the implementation of the MSDV-2030 and SDGs.

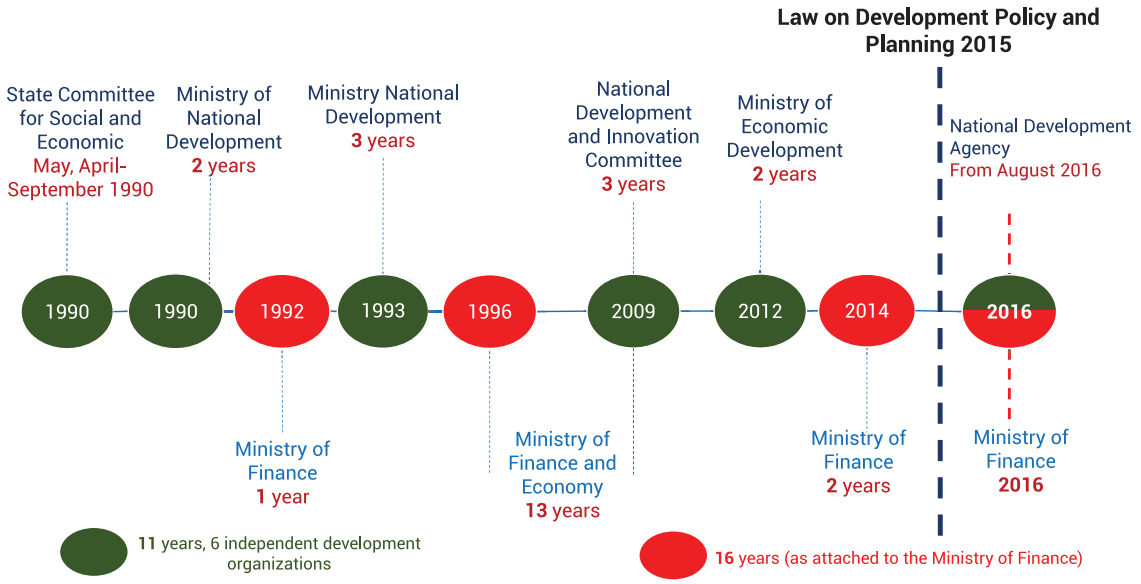
Furthermore, within the framework of creating appropriate institutional mechanisms, in 2017, National Council for Sustainable Development was established by the Prime Minister. The National Development Agency is mandated to provide technical policy support to the Government of Mongolia in mainstreaming the SDGs into long-term strategies and ensuring their coherent and coordinated implementation in the medium-to-short term. The task of strengthening SDG indicators and data collection is ensured by the National Statistics Office.

Undertaking critical reforms to further improve institutional framework is necessary. Amendments to the Law on Development Policy and Planning with respect to setting up a central state administrative body in-charge of development policy and planning, ensuring coherence and integration of sector, inter-sectoral, national, and local level policies and strengthening the roles and responsibilities of government agencies is required. It is also detrimental to establish a policy research institute in the form of a "Think-tank".

The main functions of this research institute would include review and assessment of stability and continuity of development policies, analysis of socio-economic policies pursued by the political parties including providing feedback on the extent of conformity of their platforms with national interests, making recommendations, and undertaking monitoring and evaluation of policy implementation[113].

The instability of institutional settings for development policy planning and operations is associated with the lack of planning methodology and tools, unclarity in roles of relevant agencies, duplications and gaps in functions[114].

Figure 3.2. Change in the Development Policy and Planning Mandate Within the Government



Source: National Development Agency, 2019

The above figure illustrates that over the past 28 years, the development policy functions related to policy coherence and coordination have transferred among nine institutions. Within these transformations the Ministry of Finance (MOF) was in charge for 16 years, while during remaining 12 years these responsibilities have moved in 6 different institutions. This frequent change of institutions has become one of the prime factors of loss of many trained and capable human resources.

A civil service reform process has been instituted. A start has been made by amending the Law on Civil Service in 2019, based on the principles of ensuring that the state interest is citizen-centered, accountable and stable. It aims to increase stability in the civil service and the accountability of civil servants.

A capable and efficient institutional structure is essential for SDG implementation. It is equally important to create a systemic mechanism to ensure multi-stakeholder participation for SDG implementation.

3.5. SDG Monitoring, Evaluation and Reporting

SDG progress monitoring, evaluation and reporting system is established. The review of MSDV-2030 on a two-yearly basis is the foundation for the monitoring and evaluation of SDG implementation. However, it would be impossible to assess SDG progress without approved national level SDG targets and indicators. Moreover, the creation of regular multi-stakeholder mechanisms for monitoring and evaluation is vital for the successful implementation of the SDGs. Some reports have concluded that the performance monitoring is weak and there is no system of independent evaluation established in Mongolia, although financial supervision has improved[115].

To address these challenges, eight government Sub-Working Groups were established to identify national SDG indicators and targets by the Chief of the Cabinet Secretariat's Decree No. 29 of 2019. This process sets the foundation for results-based monitoring of SDG targets and indicators.

Tapping into a range of information sources is of vital importance for effective monitoring of SDG implementation. In Mongolia, official statistical data and information collection mechanisms are relatively well-developed. In the future, to supplement official statistics, data sources need to be broadened, including non-traditional sources even where the

coverage and quality of official statistics are satisfactory. The National Statistical Office has conducted four readiness assessments on against the global SDG indicators. These findings are presented in the Table below.

Table 3.1. Readiness Assessment of SDG Indicators

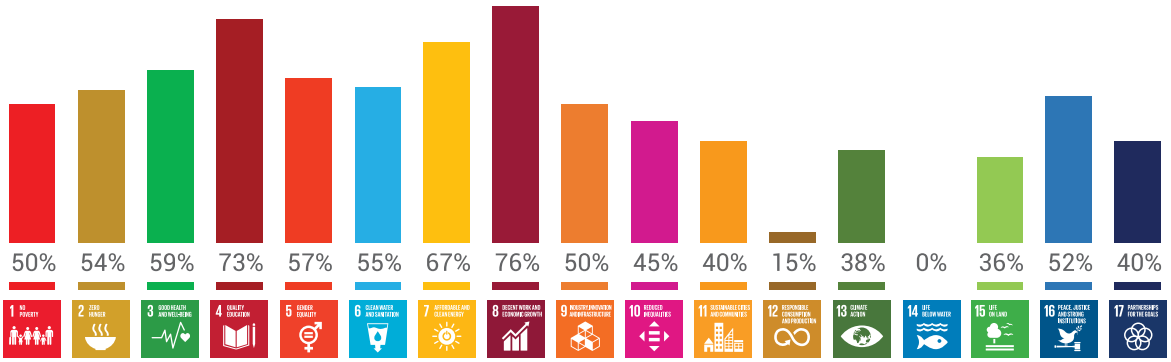
INDICATORS	Review date (year, month)			
	Nov. 2015	Mar. 2016	Oct. 2017	Dec. 2018
Not Applicable to Mongolia	13	13	11	11
Readily available	45	60	113	118
Available after additional estimation	92	11	0	0
Not available	43	157	120	115
Total number of global SDG indicators reviewed	**224**	**241**	**244**	**244**

Source: NSO, 2019, www.sdg.gov.mn

Out of the globally recommended 244 SDG indicators, 233 indicators are applicable to Mongolia, while 11 are not relevant to the country. By the end of 2018, 50.6 percent of the indicators (or 118 indicators) were available in Mongolia. According to the SDG data readiness assessment in Figure 3.3., existing data sources are insufficient for the following SDGs: (i) 62-76% data insufficiency for health (SDG-3), education (SDG-4), gender (SDG-5), energy (SDG-7), economy and employment (SDG-8) related SDGs; (ii) 45-55% data insufficiency is found for poverty (SDG-1), food supply and nutrition (SDG-2), water (SDG-6), infrastructure and innovation (SDG-9), inequality (SDG-10) and governance (SDG-16); (iii) Data is insufficient for urban development (SDG-11), accountable production and consumption (SDG-12), climate change (SDG-13), ecosystem (SDG-15), partnerships (SDG-17).

There is a need to increase national statistical capacity to estimate the remaining 115 indicators, introduce the other sources of data in a systematic way, including qualitative evidence and big data, with appropriate scrutiny and validation for credibility.

Figure 3.3. Readiness Assessment of SDG indicators

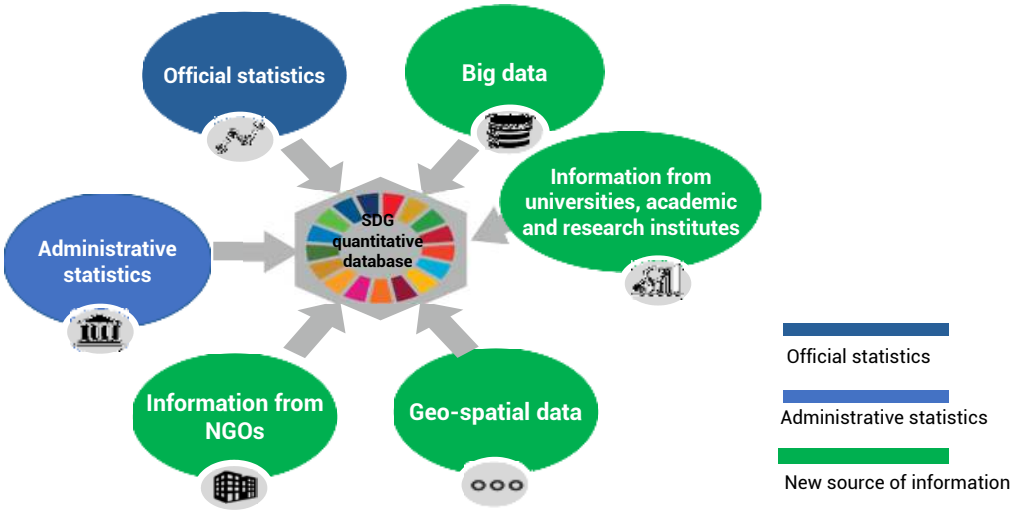


Source: NSO, 2019, www.sdg.gov.mn

It is important to draw in both quantitative and qualitative data to track SDG progress, with due care on methodology and quality. Results of thematic surveys, information and feedback received through structured consultations, meetings and focused discussions with different stakeholders, including business entities, trade unions, associations, research institutes, and vulnerable groups, can enrich the evidence-base.

At the present, the two main data sources are official statistics the NSO and administrative records from ministries. It is necessary to broaden the data sources by including new information sources such as information from academia, research institutes, NGOs and geo-spatial data for tracking SDG progress (Figure 3.4.).

Figure 3.4. Data Sources for SDG Monitoring



Source: NSO, 2019, www.sdg.gov.mn

The creation of a data dashboard will enable policy-makers to access data disaggregated by regions, urban-rural, gender, other population groups, etc. This will help to identify and better include all population groups. Apart from quantitative and qualitative data, non-traditional sources are of particular relevence especially in the case of less visible groups, which also tend to be less visible in official statistics.

3.6. Building Multi-stakeholder Participation and Partnership

Participation is required at all levels of government. It is important to establish a permanent mechanism to ensure participation in the development process. Because line ministries and agencies have their own mandates, they tend to look at the three pillars of sustainable development in silos. There is a tendency to focus on their more limited mandates rather than paying attention to other linkages, including across levels of government, which requires coherence. Therefore, it is important to reach a common understanding on the broader scope of the SDGs and recognize that the SDGs are not just national-level responsibilities. Local participation is key, as SDG implementation will largely depend on activities to be carried out locally.

It is important to promote private sector participation. Private businesses have major roles too. Economic activities not only contribute to GDP, but also have implications for employment and ensuring more inclusive growth. Private financing should be much better aligned with sustainable development. It is becoming increasingly important to strengthen advocacy on mainstreaming sustainable development in the operations of entrepreneurs. Reforms are also needed

to ensure that regulation supports a level playing field so that positive social and environmental impacts are promoted and negative impacts are disincentivised. In doing so, it is vital to undertake a thorough situation analysis.

Improving public-private partnership is important. Recognizing that the development of local businesses is the foundation for sustainable investments, the Law on Concession was approved in 2010 and the state policy on Public and Private Partnerships (PPP) in 2009. Together, these have provided the legal environment for attracting private investment for infrastructure projects[116]. However, the conditions for PPP projects have still to catch-up with other countries (100 countries) in Asia and the Pacific. Mongolia was ranked as one of the the last countries in terms of "favorable investment climate for PPP" in 2015[117].

PPP arrangements are an important element of the GoM's development strategy. If adequately planned, structured and implemented, PPPs can provide effective and efficient means for financing, operating and maintaining important infrastructure projects that are socially and environmentally sound. To this end, the process of developing a new law on PPPs is currently underway.

Civil society organizations can contribute to addressing SDG challenges. There are instances of CSO cooperation with the government in providing public services through NGOs and professional associations, though it has not been common. The participation of NGOs in public advocacy on SDGs and independent evaluation of SDG implementation are important. A review of functions of ministries and agencies has begun within the framework of ongoing civil service reforms. This is expected to clarify which services could be transferred to NGOs or professional associations, strengthening the participation of civil society in SDG implementation.

Volunteers play an important role in achieving the SDGs. In 2018, 27312 volunteers have contributed 3823117 hours, which can be valued as ₮ 5.5 billion of benefits to the economy[118]. Cooperation with volunteers could be directed towards achieving the SDGs.

In order to promote principles of environmental and resource justice in consumption and production, there is a need to change behaviors, support civil society organisations as the agents of equitable development, and for a rights-based approach, community mobilization and capacity building.

External cooperation and partnerships play an important role. The number of development partners and foreign investors has increased over the years, reflecting Mongolia's commitment to fulfill all its internationally agreed obligations. At the same time, it shows Mongolia's capacity to be a trusted partner.

A review of the outcomes of external assistance that Mongolia received in the past 20 years is requires to improve database system, monitoring of allocation and spending and ensuring transparency is required. A rational determination of development policy and the establishment of an implementation mechanism for ensuring continuity and stability can provide a solid foundation for the use of external assistance to achieve development policy objectives.

3.7. Ensuring the "Leaving No One Behind" Principle

Mongolia recognizes human centered development policy and the principle of "No One Left Behind".

The first step in ensuring equal access to basic services for all is to identify the population groups at risks of being left behind. Based on the results of recent studies[119], reports, data and stakeholder consultations that took place during VNR Report preparation (Appendix 6), the groups at "risk of being left behind" were identified.

Based on the above information, people are at "risk of being left behind" from development for the following reasons[120]:

- *Discrimination and exclusion:* Limited opportunities for equal access to social services and benefits of economic growth based on age, sex, ethnicity, disability, sexual orientation and migration status.
- *Social and economic status:* Unequal access to essential social services, including income-earning opportunities, education, health, energy, social welfare and financial services.
- *Residential area:* Urban and rural development disparities, limited development of public services, transport, communication and other infrasrtructure.
- *Shocks and disasters*: The increased frequency of droughts and dzuds due to climate change negatively impact the economy, health of the population, social welfare and lifelihoods and further increased urban and rural disparities.
- *Governance:* The regulatory framework for development policy and planning, institutional settings and the coherence between national and sectorial policies are weak; the unequal distribution of the budget and limited opportunity of voices heard in decision-making.

Six vulnerable groups at risk of being left behind were identified for this VNR. While there are people who benefit disproportionally from the development process, others are systematically left behind. The following six population groups at risk of not fully benefitting from development were identified based on the above criteria:

- **Children** – It is evident that poverty is the main reason for stagnant child growth and poor health of children from households in poverty, especially young children. Mongolian children, irrespective of family wellbeing conditions, face many types of deprivations. Children in urban areas suffer from respiratory and other diseases caused by air pollution from the gestation period. Children live in difficult housing conditions, while suffering from poor nutrition and lack of access to acceptable quality health care and education.
- **Youth** – Lack of access to reproductive health services and poor awareness leads to high pregnancy rates among the adolescent girls. Due to lack of job opportunities, about one-third of working age youth are living in poverty. Due to unemployment and poverty, many youth are becoming the victims of crimes.
- **People with disabilities** – People with disabilities (PWD) have limited opportunities to receive health and education services, they face unemployment and are unable to earn enough income. There is no infrastructure and special devices required for them to be able travel and socialize.
- **Elderly** – As population life expectancy increases, the proportion of retired population has been grown steadily. Due to low retirement pensions, they often fall into poverty and require social assistance. For the elderly there is a need to prevent them from entering into poverty, ensure stable income and access to basic services to live in healthy, safe and peaceful environment. Creating social welfare conducive to their needs is becoming important for all women and men both in rural and urban areas.
- **Herders** – In addition, to living in severe weather conditions, herders have seasonal and unstable income sources. They are vulnerable to external shocks caused by climate changes and natural disasters such as dzud, dry summers and pasture degradation. As a result, many livestock die, and herders who lost their animals tend to migrate for better opportunities. Herders have limited access to timely health services due to remote locations.
- **Internal migrants** – Persistent disparities in urban and rural development

opportunities have been a trigger for population migration to urban settlements. This has resulted in a growing burden on social services and employment opportunities. Moreover, migrants who do not have the required registration are constrained from access to basic services, employment opportunities and engagements with local authorities. Migrant children tend to drop out of school and have no access to health services.

An increased policy focus on incorporating the specific needs and concerns of these groups in respective policies will help in addressing the challenges that they and their supporters (parents, guardians, and close relatives) face. Including vulnerable groups in the development process is important, which can also boost productivity and quality of life for society as a whole.

One of the immediate required actions is to generate detailed data and information on populations at risk of being left behind.

Even though some measures protecting the interests of these groups are reflected in policies and programs currently in force, the risks that they face and their vulnerability has not been fully addressed. There is a need to create a mechanism for regular discussions on the issue of vulnerable groups so that this can be addressed in a comprehensive manner. In this regard, not just "at risk" groups, but also the challenges faced by their caretakers need to be considered.

It is important to hear the voices of population groups excluded from the benefits of development. It is equally important to disseminate information and promote understanding in society by engaging other stakeholders like the business community and civil society. By including gender with the population groups at "risk of being left behind", policies can counter challenges like gender-based violence and support gender equality across the board, including in higher levels of decision-making.

CHAPTER 4

DEVELOPMENT CHALLENGE IN FOCUS: AIR POLLUTION

4.1. Air Pollution as a Key Development Challenge

The increase in air pollution violates citizens' fundamental rights to live in a safe and healthy environment stipulated by the Constitution of Mongolia. For some time now, the issue of air pollution has become a point for everyday discussion among citizens, civil society and decision-makers in Mongolia.

The country's geography and extreme weather conditions, the overwhelming reliance on coal for energy, combined with a narrow economic base, the lack of employment opportunities outside urban centres and unequal rural-urban living conditions triggering population concentration in a few locations, have together contributed to making Mongolia one of the most air polluted countries in the world.

In terms of outdoor pollution levels, Mongolia is ranked 6th out of 73 highly polluted countries and Ulaanbaatar was ranked 5th out of 62 capital cities assessed on ambient air quality[121] (PM2.5 concentration – 58.3µg/m³), in 2018. This makes Mongolia a country with a high risk of cardio-vascular and respiratory diseases. Air pollution is a multi-sectoral development issue, relevant for several SDGs – any intervention limited to one sector or area cannot address it. Since every person is affected by air pollution, every person needs to contribute to fighting it.

Therefore, this chapter takes up the example of air pollution, which cuts across SDGs and stakeholders. It demonstrates how a single sustainable development challenge can be analyzed using a systems approach. This analysis provides a model that can be applied to other SDG challenges as well.

In Mongolia, during the long winter period, temperatures drop to as low as -40° celsius on some days, necessitating indoor heating of homes and other buildings for almost eight months a year, resulting in an increased demand for energy. Coal has been the fuel of choice for indoor heating, even more so for the poorer residents in *ger* areas, due to its affordability and availability. Raw coal has a significant negative impact on people's health and the environment. In Mongolia, coal is the dominant source of energy, constituting a share of 74 percent[122] (in PRC it is 66 percent and Japan 22 percent).

Among thermal energy users, 93 percent of 653.5 thousand users constitute *ger* area households. Though high in numbers, they consume only 28 percent of total thermal energy produced in the country. On the other hand, business entities which constitute just 7 percent of energy users, consume 72 percent of the thermal energy produced.[123] Moreover, out of total households, 27.5 percent are connected to the central system, 0.6 percent use electricity for heating, 69.9 percent rely on stoves, and another 2 percent use generators[124] (refer to Annex 4, Figure 6.5.). This high level of energy use comes from the mining sector, which relies on coal for power and heating, benefitting mostly a few economic entities. For instance, Oyu Tolgoi mine located in South Gobi uses coal for central heating, site-based local boilers and the emergency diesel power station[125].

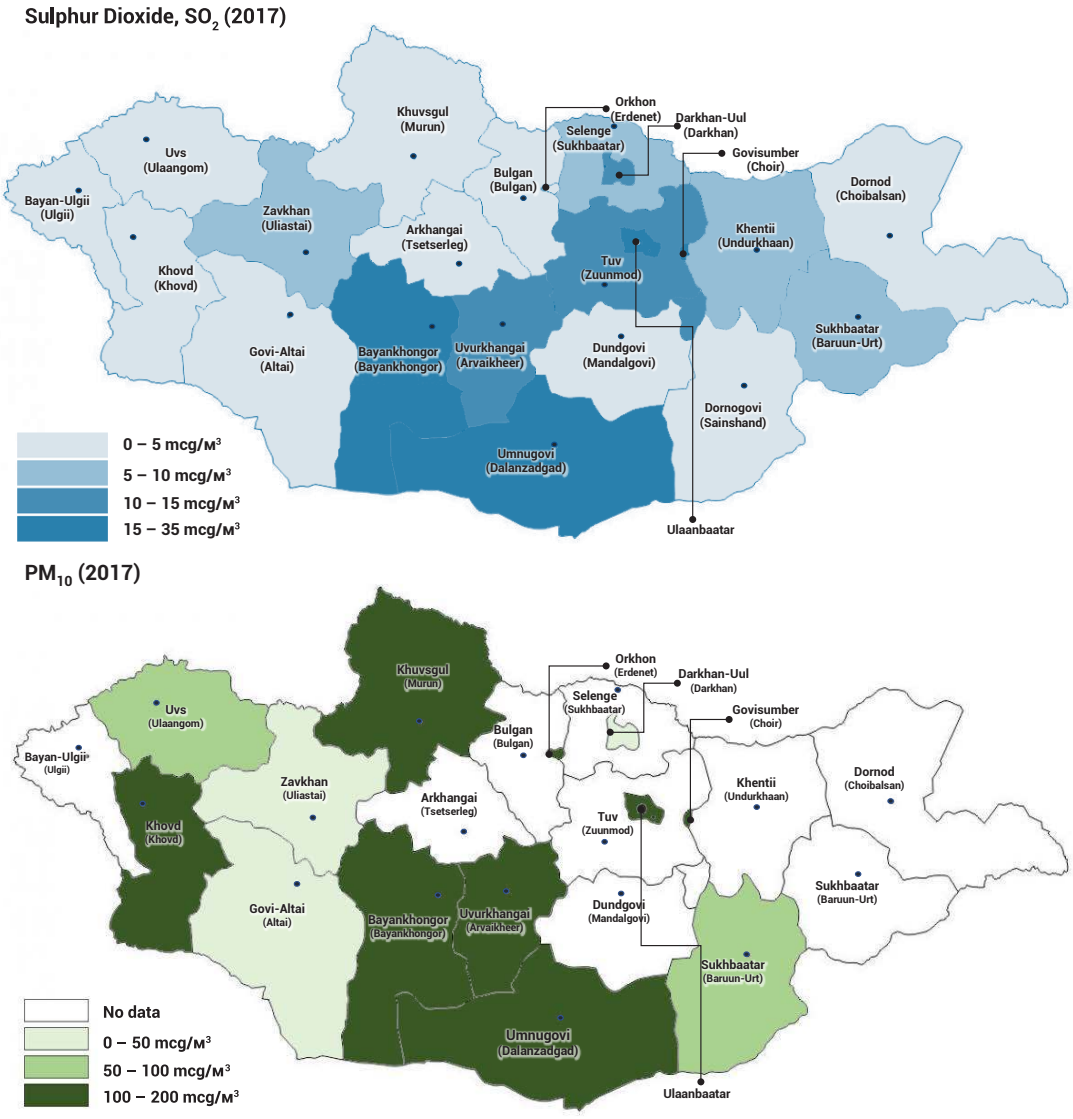
4.1.1. Air Pollution Operates Without Borders

Before 2009, to monitor air quality, measurements were taken place at four

different locations using two indicators. As the air quality deteriorated, the number of Air Quality Monitoring Stations (AQMS) increased. Currently, a total of 40 air quality sentinel monitoring stations are located in Mongolia, including 15 stations in Ulaanbaatar, 25 in *aimag* centers and other major towns. The AQMS cover all areas of Mongolia with differing levels of intensity, particularly for Ulaanbaatar one station covers 314 sq.km of area and serves 87,000 residents, while in rural areas, one covers 62,452 sq.km and serves 77,000 people respectively.

Currently, after Ulaanbaatar, Bayankhongor, Umnugovi and Erdenet are becoming the most polluted areas. However, the level and types of pollutants differ across *aimags* depending on the type of economic activities and other local factors. (Figure 4.1.)

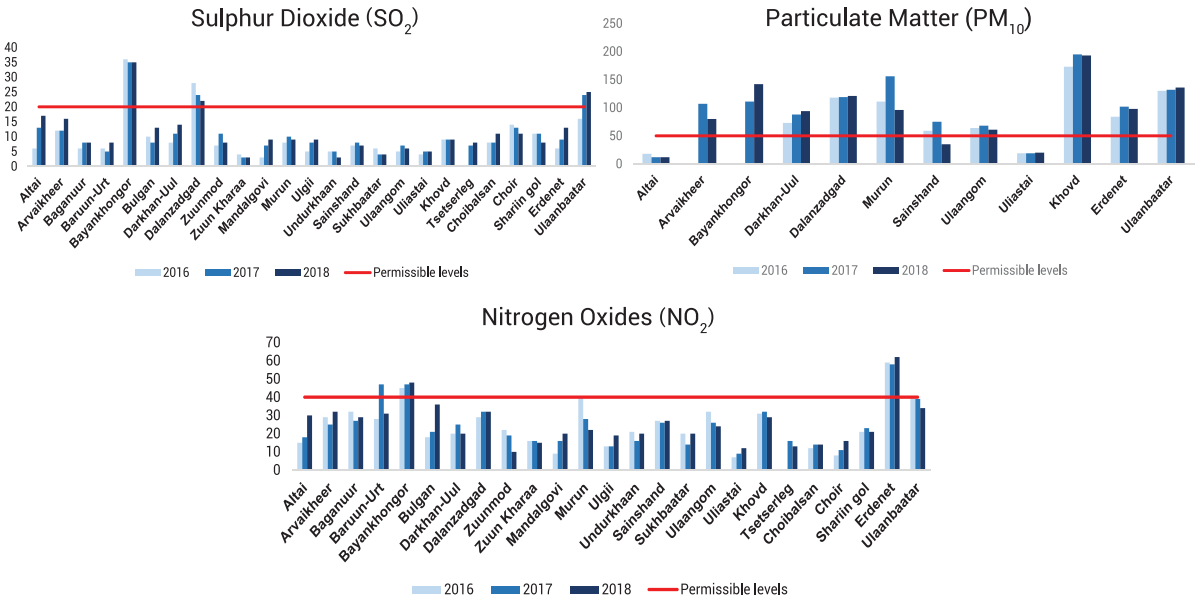
Figure 4.1. Air Quality, by Aimag Centers, 2018.



Source: Air and Environmental Pollution National Council, annual report, 2018

Particulate matter concentration is highest in Bayankhongor and Umnugovi, while nitrogen dioxide emissions exceed permissible levels in Bayankhongor and Erdenet town. Sulphur Dioxide emission exceed permissible levels in all *aimags* except Govi-Altai and Zavkhan (Figure 4.2.).

Figure 4.2. Levels of Annual Average Pollutants in Local Areas, 2016-2018



Source: Air and Environmental Pollution National Council, annual report, 2018

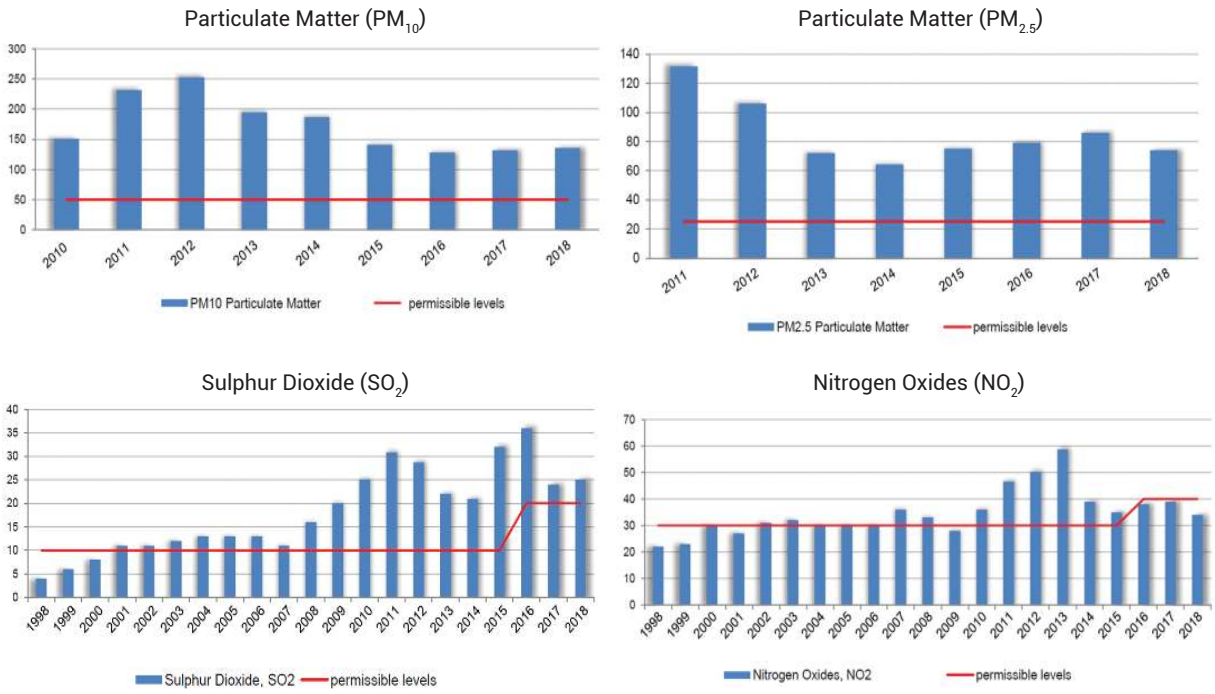
Air pollution overall is highest in Ulaanbaatar, which constitutes 0.3 percent of the country's territory but accommodates 46 percent of Mongolia's population. In Ulaanbaatar, sulphur dioxide (SO2), nitrogen dioxide (NO_2), particulate matter PM_{10} and $PM_{2.5}$, ozone (O_3) and carbon monoxide (CO) emission levels all exceed the Mongolian air quality standards. Among these, pollutants linked to coal burning from which PM_{10} and $M_{2.5}$ originate, have exceeded Mongolian standards by 12 times, and WHO requirements by 25 times. Thus, the situation is most critical in Ulaanbaatar where residents breathe highly polluted air for 7 months of the year (Annex 4, Figure 6.1).

The geography of Ulaanbaatar compounds the capital's pre-existing air quality challenge. Its low flat land (closed from major atmospheric flows) is surrounded by high mountains and affected by slight breeze and the phenomenon of inversion. The winter air in Ulaanbaatar is under the strong influence of anticyclone from the Siberian mainland. Cold air on the ground, covered by a layer of warm air, means that accumulated air pollution remains low to the ground, with smoke and dust unable to move away[126].

The country's air quality has deteriorated over time. The air quality deterioration is not a recent phenomena. The country's development path, powered largely by coal, combined with increased recurrence of natural disasters, has led to people's concentration in the capital city for better opportunities. This has resulted in increased air pollution levels, especially in densely populated areas.

In 2010, most major indicators of air quality exceeded permissible levels. In the early 2000's oxides emissions were initially at permissible levels but have increased gradually thereafter, reaching peak levels in the years of 2010-2012. Particulate matter was at its peak in 2011 and 2012 increasing to over 150 mg/m^3, which is three times higher than the national standards.

Figure 4.3. Air Pollution Level in Ulaanbaatar, by Pollutant Type



Source: MET, State of Environment Report, 2017-2018, page 133-137

4.1.2. Air pollution is a Multi-Sectoral Challenge in Mongolia

Deteriorating air quality has reached the point of becoming a development challenge that straddles multiple sectors in Mongolia.

Issues related to air pollution needs to be investigated within the economic, social and environmental dimensions of sustainable development. So far, linkages of actions covering polices and targets for air pollution reduction have been narrowly considered. They have not been assessed in combination poverty, inequality, incomes, jobs, serious concerns for human health, energy, infrastructure, urban development, responsible production and consumption, climate change, water, land and governance.

Poorly developed policies implemented in the past thirty years, an inability to diversify the economy, disparities in regional development, lack of employment opportunities in rural areas, and weak climate change adaptation have all contributed to the problem, but these connections have not been identified comprehensively.

Mining areas have also been prime locations for air pollution. While the rapid expansion of roads for automobile transportation is critical for livelihoods in remote areas, especially for herders and important for the country's development, there is a lack of compliance with official standards for local road routes. The impact is felt in mining areas where unmanaged traffic from heavy vehicles and machinery operating at just any place lead to dusty conditions, increasing air pollution[127]. In addition, land is degraded and pasture quality and access worsens. In most locations with extensive mining operations, air pollution and dust management remain inadequate.

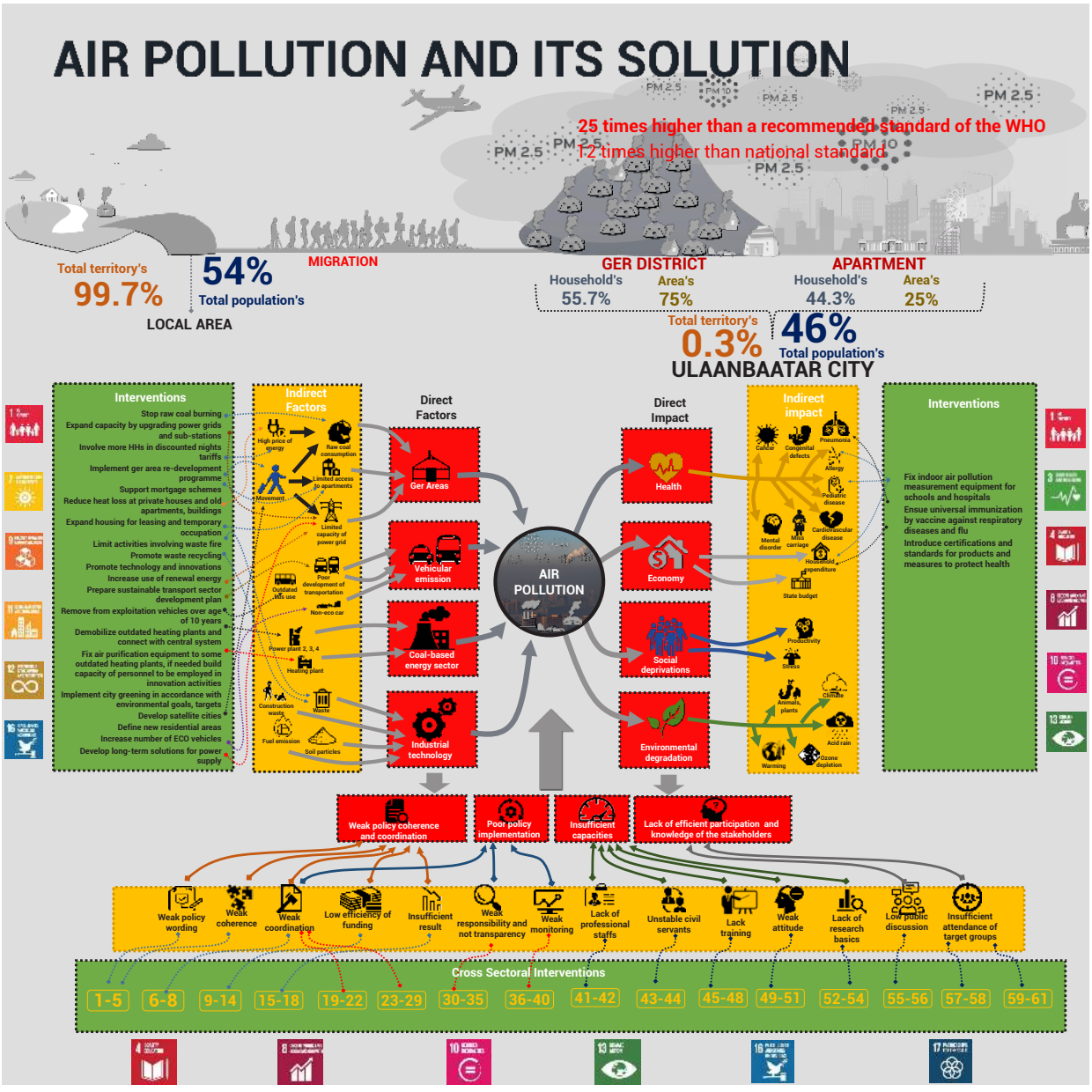
4.2. Systems Analysis: Air Pollution Drivers and Impacts

An application of a systems approach can help address complex challenges which have multiple interlinkages and involve multiple stakeholders. A systems model can identify the underlying contributors and causes in a holistic manner to provide a better understanding of the factors affecting

air pollution. Moreover, by clearly presenting its consequences on human lives and the environment, a systems approach can strengthen consensus around necessary actions. It can point to the bottlenecks that need to be overcome and the consequent mitigation measures, prioritization and sequencing of actions to be carried out.

This chapter proposes a systemic approach that can: (i) present the underlying contributors – drivers and causes; (ii) pull together the adverse human impacts that could motivate change and remain on course for the medium to long run; (iii) examine the major steps taken so far; and (iv) identify specific bottlenecks. Such an understanding can lead to exploring opportunities and identification of actions. Such a systemic analysis can be adapted for analysing other multi-dimensional development challenges.

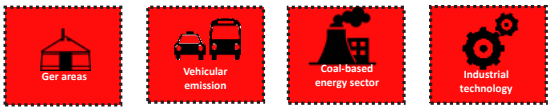
Figure 4.4. Air Pollution: Contributing Factors, Impacts, and Bottlenecks



Note: Actions for inter-sectoral coordination are shown in Annex 5.

The red color in Figure 4.4. depicts the contributing drivers and direct impacts, yellow color for secondary factors and indirect impacts. Green is used to highlight the major bottlenecks and solutions proposed. Taken together, this systems approach makes explicit the prospects for positive change.

4.2.1. Major Air Pollutants: Contributing Factors Can Be Identified



Air pollution has increased due to a variety of factors. The major pollution contributors include the use of fossil fuels for household heating, vehicular emissions, coal-based technologies of power plants for electricity generation, production waste, and other factors.

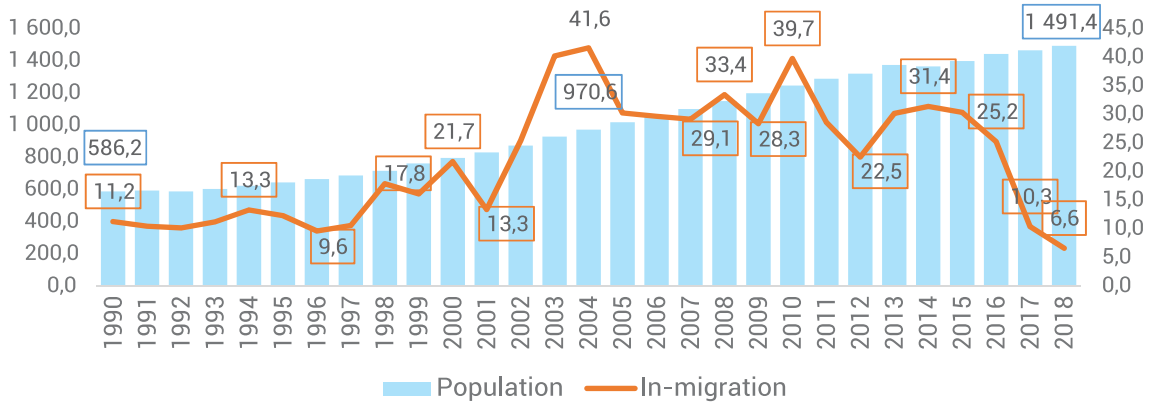
4.2.1.1. Coal Burning in Ger Areas is Significant

The *ger* districts of Ulaanbaatar cover 75 percent of the city's territory and accommodate 55 percent of the capital's residents[128]. Out of these residents, one-third are newcomers who have migrated from rural areas for better job opportunities, more incomes and better access to the basic services.

Initially, Ulaanbaatar was designed for just 500 thousand residents, but currently it accommodates 1.5 million people (2018). Due to poor rural development prospects, the number of Ulaanbaatar inhabitants has increased 1.2 times[129] over the last decade. Consecutive harsh winters, dzud, and droughts have caused many herders to lose their livestock and other resources. In particular, herders with fewer animals lost their entire means of livelihood. People were forced to move to the city. Particularly in 2000, 2010 – the years of dzud and drought – the number of migrants to the city increased drastically. Among the migrants, 40 percent belong to population groups who are at risk of being left behind, needing extensive social protection services.

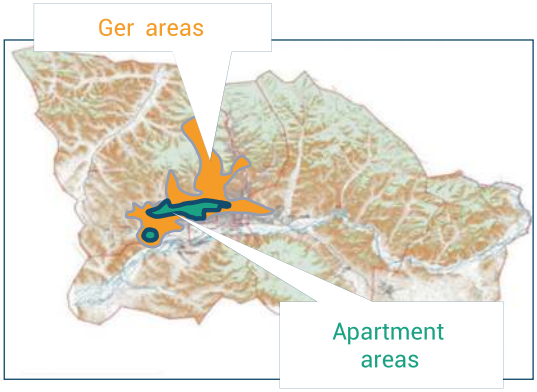
Poor urban planning has aggravated these challenges. Due to the lack of housing and electricity supply, almost all *ger* district households burn fossil fuel such as raw coal. Particularly, poor households tend to burn whatever is available – tyres, used oil, lubricants, old clothing and shoes, which have inevitable impact on air pollution. As of 2018, out of all city households, 55 percent use fire stoves for heating, and only 3 percent of six. Ulaanbaatar central districts heat their buildings and *ger* by electric power energy[130]. In addition, 90 percent of the private buildings in *ger* districts were built without proper engineering drawings with construction materials that did not meet standards, which results in large loss of heat and energy.

Figure 4.5. Number of Migrants from Rural Areas to Ulaanbaatar, 1983-2017



Source: NSO, 2019 and Ulaanbaatar Mayor's Office

Figure 4.6. Mapping of Ger and Apartment Districts



Source: NSO, 2019 and Ulaanbaatar Mayor's Office

From 2010-2018, the capital city *ger* area households used on average 708.9 thousand tons of coal per annum (Annex 4, Figure 6.5).

4.2.1.2. Vehicular Emission is Increasing

The poor development of public transportation has contributed to a 16.5-fold[131] increase in vehicles during the period 1995-2017 (Annex 4, Figure 6.7.). Out of all automobiles/cars in operation, 80 percent were over 10 years old on average[132]. Moreover, the city public transport runs 937 buses, which means that there is just one bus per 1561 persons. The total stock of vehicles used for public transport, almost half have plied for had long periods, and they will be withdrawn from the services in 2020[133]. These old vehicles are significant contributers of particulate matter, contributing to air pollution.

4.2.1.3. Power Generation Remains Largely Coal-Based

Power stations for Ulaanbaatar supply residents electricity generated through thermal sources which are all coal-based. In order to increase power supply the government decided to double their capacity. However, this decision confronts a trade-off: while more electricity is needed, more coal-based power further adds to air pollution. A tilt away from thermal power, progressively altering the energy mix towards a growing share of renewables, cleaner technologies and efficient techniques is the way forward.

Currently, in the interest of resident affordability, energy tariffs have been on the lower side. To make this affordable, the government provides subsidies to the coal industry, which disincentivizes investments into clean energy. In 2018, the government paid a sum of ₮ 17.1 billion as subsidies to the energy companies.

Domestic energy subsidies and tariffs favour those who are already better off. The subsidies provided to the energy companies benefit households connected to the central power grid and heating system. Urban and rural ger area residents and herders pay higher energy prices compared to users of the central system. In fact, and during the winter season they pay full market price for energy (except that the vulnerable households are entitled to a one time payment for coal per year from the Social Welfare Fund).

The energy tariffs do not cover the issues caused by burning fossil fuels. The prices paid for coal by consumers vary from a low of ₮ 8,800 ($ 3.63) per ton to a high of ₮ 72,900 ($ 30) per ton, which shows a 9-fold difference in the prices. The *ger* area households with the lowest incomes pay an even higher price ($ 50-60 per ton)[134] by buying coal by the bag. Therefore, there is need to set energy prices that recover the full costs of fuel plus the additional costs of other factors, such as air pollution and greenhouse gas emissions.

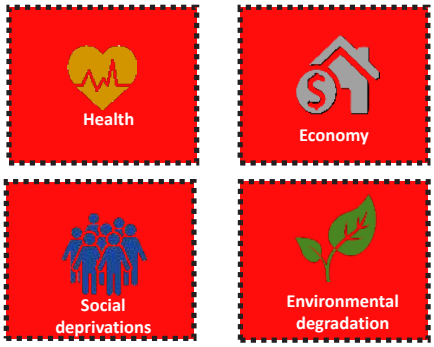
4.2.1.4. Other Contributors to Air Pollution

The major pollutant for Ulaanbaatar is the wide spread of particulate matter in the air. This includes dust generated from wind-blown open surfaces, soil pollution, burning around 3.4 million tons of waste[135], ash, particles from construction works and borrow pits and other industry-related activities contributing to air pollution. Open latrines have become another source of pollution by transmitting waste water to the water aquifers, which affects vegetation and plants[136].

By 2017, green plants and grass of the city increased by 27.7 percent compared to 1995, and by 20 percent compared to 2005[137]. Such urban vegetation helps to balance the

ecosystem by purifying outdoor air, reducing dust, lessening smog, and creating a more pleasant environment for people.

4.2.2. Air Quality has a Number of Adverse Consequences



There are both direct adverse impacts of air pollution and secondary impacts. Impacts are felt on people's health and education, by households and other entities. Adverse impacts are also observed on state revenues, expenditures, consumption behavior, and the environment. Identifying the range of adverse consequences helps to build consensus among the stakeholders on the possible solutions and further actions, which are discussed further below.

4.2.2.1. Air Pollution and Health

There is a wide spread of diseases among Ulaanbaatar residents, triggered by $PM_{2.5}$. One in ten deaths is estimated to have been caused by air pollution. At the national level, medical records from the last ten years indicate that the primary causes of people's morbidity are respiratory, intestinal, cardiovascular and mental disorders. The same situation is prevalent in Ulaanbaatar. During the period of 2008 to 2018, respiratory complications such as the incidence of acute bronchi and acute broncholith increased by 6.3 times, reaching 240 per 10,000 population. Last year, respiratory disorder incidence reached maximum levels in December and March.

Air pollution and child health. Among those affected by respiratory disorders, young children and youth are the most vulnerable – these are also the groups "at risk of being left behind". In Ulaanbaatar, the most common disease among children are acute respiratory diseases, including pneumonia, caused by air pollution (Annex 4. Figure 6.2.). For instance, young children and youths suffer more from respiratory diseases, face higher risk of death from lung-related complications, fetus disorders and miscarriages, which have adverse impacts in the long and short term[138].

In Mongolia, the infant and under-five mortality rate linked to air pollution has increased[139]. Within the under-five category, infant deaths constitutes 15 percent. Research shows that fetus disorders and loss vary across seasons, and are affected by outdoor air-pollution in Ulaanbaatar[140].

People incur additional expenses for health services. As many as 90 percent of all households spend 10 percent of their "other" expenditures on health services, apart from their basic consumption expenditures such as food, housing, etc.[141]. According to surveys "a household spends on additional ₮ 500 thousand during a winter season with high air pollution. This is caused by increased cases of respiratory diseases, attending the primary health service institution; and buying medicine, which cost ₮ 50,000 at a minimum and can go up to ₮ 150-200 thousand. If the cases require hospitalization it will cost even more. Caring for sick children limits the work opportunities, which also affects household income"[142].

4.2.2.2. Air Pollution and Education

Children spend 5-6 hours per day in a school environment[143]. The particulate matter $PM_{2.5}$ levels in school classrooms in Ulaanbaatar are 3-10 times higher than Mongolia's standards for air pollutants, which impacts negatively on students' health[144], impeding learning. Schools were supplied with air filters. This was a one-time intervention. Such interventions do mitigate some of the ill-effects among targeted groups in the short term, without having any long-lasting effect on reducing air pollution levels.

Box 4.1. Long breaks and long-term effects

This year [2018/2019] schools in Mongolia are closed for long stretches for coping with the extreme cold in winters and avoiding exposure on days when the air is very polluted. Minimizing exposure of school children to pollutants and risks of flu outbreaks shows concern, and may be a good short-term step, but does little to control pollution. More research is needed on the potential harm from loss of learning opportunities, school days lost. For instance, an additional break for a month each year over the ten years of schooling cause the students a loss of 10 school months – an academic year altogether – taking away from learning time and grade progression. So policy makers may carry out studies to identify alternate options that don't compromise education before making decisions that are not in the long term interest of students.

VNR preparation: Youth Group discussions

Although all Mongolians suffer from poor air quality, general awareness and knowledge on air pollution is low. People are not well aware of its sources, or its impacts on health and livelihoods. Nor are they familiar with measures to counter or mitigate air polllution. Awareness is particularly lacking among poorer groups and young people. Some advocacy activities have been implemented, but most were in silos.

4.2.2.3. Air Pollution and Income

Purchasing fuel is essential to overcome the long and harsh winters, and is a high economic burden for Ulaanbaatar's *ger* households. They spend around 20 percent of their average monthly income on fuel[145]. Poorer families[146] spend a higher proportion of income on fuel[147]. The cost of air pollution is around 18 to 28 percent of the city's GDP, which is much higher than the 8-13 percent of the national GDP for the country as a whole.

Public institutions bear the high cost of reducing indoor air pollution. For example, out of the total budget for kindergartens, 10 percent goes for current expenditures[148], of which most, as much as 75-78 percent is spent on heating. A pilot project introducing insulation for walls in buildings demonstrated that with insulation, air temperature within a building increases by 10 percent. Thus, insulation helps to reduce heating facility running costs, save heating and electricity bills, and reduce the overall power use in the country[149].

Despite these excessive costs at micro and macro levels, there can be positive economic gains by widening the economic base for Mongolia – new opportunities for businesses contributing to a "clean" economy, moving some of the subsidies in the direction of renewables, insulation of buildings and technology for energy efficiencies.

4.2.2.4. Air Pollution and the Environment

While there are many studies on air pollution, qualitative insights on air pollution and its broader environment linkages are inadequate. For example, there is a need to investigate the composition of $PM_{10.}$ The chemical elements of PM_{10} affect the overall environmental ecosystem when it is blown over long distances by winds and storms, settling down on distant land or water resources and affecting the water quality in rivers and lakes, the nutritient status of soil and degrading the land for specific plants or trees.

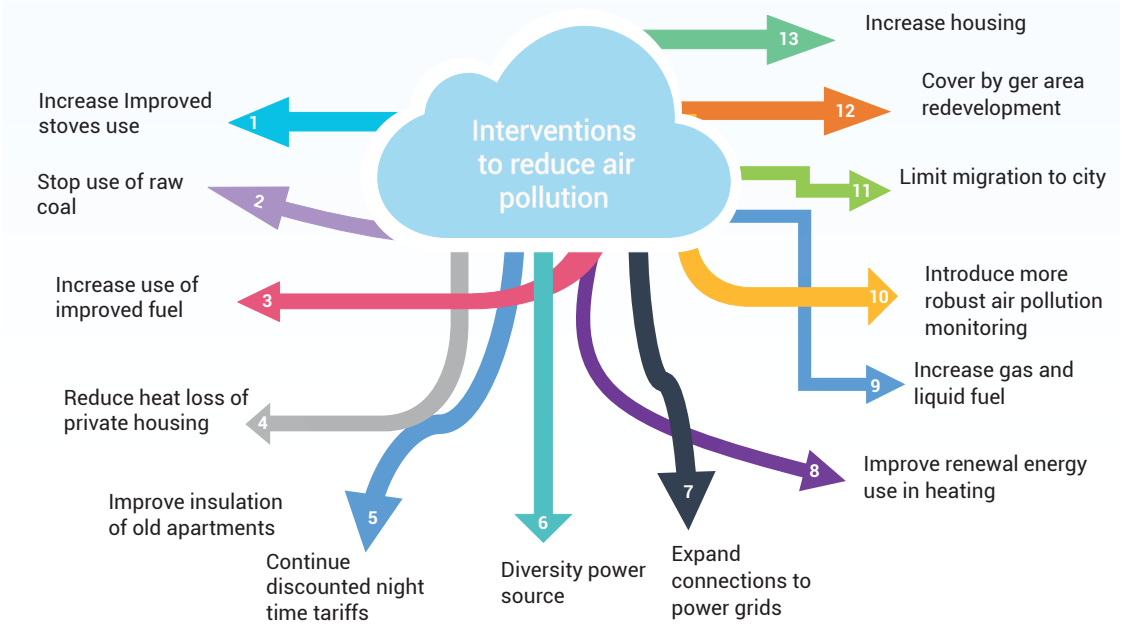
Global warming and climate change affect Mongolia with the country being a contributor, but also having to bear its impacts. Air pollutant emissions contribute to climate change. According to the Risk Index, in 2014 Mongolia, was ranked 8th among 10 countries with highest risk of being impacted by global climate change[150]. From 1940 to 2015, the average temperature in Mongolia has increased by 2.24^{0}C[151], with higher warming rates in the high mountain areas. Due to an overall decline in precipitation levels

by 0.1-2.0 mm, the frequency of natural disasters such as drought, dzud, storm, thunderstorm, and hailstones has increased drastically, leading to a destruction of people's livelihoods and extra expenditure on mitigation and recovery. These factors affect not only people's livelihoods, but also have adverse impacts on the society and economy more broadly.

4.3. National Efforts Undertaken to Reduce Air Pollution

Many steps were taken to reduce air pollution, but challenges remain. Mongolia has taken several steps to counter air pollution through policy and regulations. For instance, since the 2010, the government has implemented many policies, programs and projects like supplying residents with improved stoves and fuel, discounted electricity and heating. The government has also undertaken measures to strengthen construction standards, introduce clean technologies, and redevelop *ger* areas (Figure 4.7.). As a result, there was some reduction in PM levels. In particular, the 24-hour mean level concentration of PM_{10} of 836 µg/m3 (maximum level was in January 2012) declined to 220 µg/m3, which was still higher the national and WHO standards[152] (refer to Annex 4, Figure 6.1.).

Figure 4.7. Mapping the Actions Undertaken to Reduce Air Pollution



Source: VNR Report preparation team

During 2008-2016, Mongolia spent ₮ 260 billion (equivalent to $ 160 million) on air pollution reduction from external loans, $ 50 million from grants, and an additional ₮ 156 billion allocated from the state budget as current and investment expenditures. In total, 550 billion was spent on air pollution reducing efforts[153].

Despite implementing numerous policies, programs and projects, spending significant sums, but "not getting the expected results..." the "lack of a systems approach in policy coordination" is recognized.[154] Piecemeal actions like providing masks, or limiting the number of vehicles are only partial and short term solutions that focus on external symptoms without addressing underlying causes.

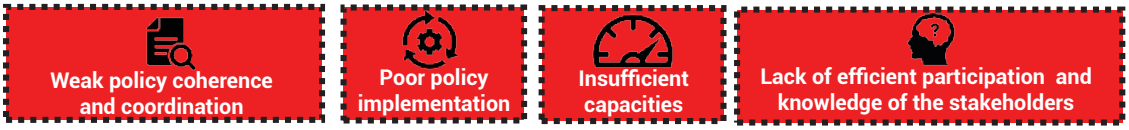
The challenge is not the responsibility of the environment sector alone - it requires multi-sectoral, coordinated actions, breaking out silos in economic, social and environmental sectors and guided by good governance principles. Except for producing improved stoves and fuel, the private sector's interventions towards cleaner energy or technology have not yet been visible.

Policymakers, informed citizens, researchers, and producers acknowledged the criticality of "all-of-government" and "all-of-society" approaches for policy and institutional governance during multiple consultations, discussions and public gatherings.

In 2017 the government approved the National Program on Air and Environmental Pollution. There is a focus on implementing this program according to the above requirements.

4.4. Bottlenecks from Weak Policy Coordination

Critical bottlenecks need to be identified and overcome



The systems approach developed in the process of the VNR report preparation has identified the following four categories of bottlenecks in tackling air-pollution:

(i) weak policy coherence and coordination;
(ii) poor policy implementation;
(iii) insufficient capacities; and
(iv) lack of effective participation and knowledge among stakeholders.

Since 2008, the government has implemented many actions to reduce air pollution, focusing on the Ulaanbaatar area. These include the creation of a legal environment and the implementation of programs and projects for direct air pollution harm containment and reduction interventions. Short-term interventions such as distribution of stoves, purifiers and masks, supplying cleaner fuels, and discounting tariffs, have had a minimal impact on improving air quality. Unless fundamental changes are made towards transforming the energy sector, reforms in energy pricing, reducing regional disparities, and improving urban planning, air pollution will remain as a major development challenge for the country. Implementing these reforms will require an evaluation of the overall development policy, stronger SDG-alignment with policy planning functions, and clearly defining the bottlenecks which have to be overcome.

Bottlenecks from Weak Policy Coherence and Coordination

- **Alignment of long-and-medium term policies.** Mongolia's Sustainable Development Vision-2030 includes many sustainable development priorities, however, strategies on air pollution reduction, which are inseparable from, and at the heart of "Leaving No One Behind", are only included as general principles. An underlying cause of the wide and rapid spread of air pollution is the inequalities and disparities causing one-directional migration. The issue of disparities and inequalities can be solved in the long-term with integrated efforts from all actors. A lack of air pollution policy coherence, prioritization and tradeoffs, and not reflecting these priorities in medium term plans and financing strategies for the SDGs, underestimation of required resources low efficiency of their utilization, weak accountability and monitoring, leave the fight against air pollution in an extremely weak situation.
- **Inter-sectoral policy coherence.** Generally, air pollution was perceived as a responsibility of the Ministry of the Environment and Tourism (MET), Ministry of Construction and Urban Development (MCUD), or the City Governor's Office. However, the challenge requires a coherent strategy that integrates all relevant sectors, including energy policy,

tariff and subsidy setting, regional development policy, awareness and education, and broad-based employment generation. Most efforts so far have been implemented in silos. The air pollution interventions were aimed at relieving the symptoms, rather than addressing the root causes. The reasons for population concentration, unequal regional development and industrial development widening disparities over the last 15 years were largely overlooked. In addition, inadequate attention to global trends such as conversion to renewal energy, adaptation to climate change and global warming and innovations in air pollution reduction prevented the systemic re-consideration of policies.

- **Coordination across public institutions involved in air pollution reduction.** The air pollution fight requires concerned efforts from the President, the Parliament, the Government, the city municipality, the sectoral ministries, NGOs, citizens and the private sector. Governor's Office of the capital city was in charge of coordinating multi-stakeholder efforts to reduce air pollution, and in 2018 the Environmental Pollution National Committee led by the Ministry of Environment and Tourism, consisted of representatives from all ministries and agencies was established with a mandate to ensure multi-sectoral coordination and management of all stakeholders. However, during the past decade, air pollution related mandates and functions on policy development coordination, and oversight have been passed between various institutions. Institutional arrangements became unstable with multiple shifts in leadership. This, combined with election-results initiated change in the civil servants in charge of the issues, resulted in uncoordinated activities. Although the air pollution reduction objective was included in the performance review of civil servants across ministries, due to a lack of systemic guidance and clear division of roles, the issue remained as both an MET and Ulaanbaatar Municipality function. Each new government has changed the institutional arrangement and composition of the Air Pollution National Council which contributed to instability and lack of continuity of initiatives that were already started. The Working groups for solving long-term development issues are not suitable institutional structures.
- **Lack of alignment between the policy and financing.** Any policy on air pollution needs to be linked with a corresponding financing strategy, with the medium-term expenditure allocations based on policy priorities. However, current practice does not allow ministries to allocate their real needs in the medium-term fiscal planning. There is no comprehensive study on assessing the efficiency of air pollution expenditures so far.

Policy Implementation Bottlenecks

The foundation for successful implementation of policies lie in ensuring coherence across vertical and horizontal systems of functioning and is strengthening accountability. Capacities also needs to be boosted, including platforms for exchange of knowledge and information among representatives of policymakers, business leaders, other decision makers and non-government organizations. The measures taken in the past, including the limitation of internal migration, assuming that the air pollution is a challenge only for the capital city and *ger* areas, making changes in the strategy based on interim results without implementing planned activities or even suspending them, weak monitoring and accountability systems and lack of an independent evaluation system, have all negatively affected the final results.

For example, the policy on improved fuel use was formulated 10 years ago with no resolution to date. No proper market analysis of improved fuel has been carried out. Projects on improved fuel could not meet the demand of consumers. Operations were suspended and no supply chain was created to link the price increase and production of improved fuel with the market. Producers

closed down due to the suspension of subsidies and no strategy was formulated to attract customers which led to a reduction in the number of households using improved fuel.

An attempt was made in the past to supply 80 thousand tons of improved fuel for twenty-six thousand households living in target zones with the highest level of air pollution in the capital city backed by financial incentives to improved fuel producers. However, only 10% of *ger* area households were covered under this scheme because of the limited capacity of producers, meaning that this attempt was not effective. Recognizing this, the government established "Tavan Tolgoi Fuel" SOE.Co.Ltd with an annual capacity of 200 thousand tons of improved fuel production in 2018, to increase the production of improved fuel.[155] The capital city allocated 10 hectares[156] of land in 6 locations[157] for improved fuel distribution and storage. The plan is to add two more production lines by 2019 to increase the production capacity to 600 thousand tons per year and to back up fuel of 600.000 tons by September 2019.

It is expected that the use of fuel will decrease by about 40%, coal moisture content will increase two times, energy consumption required for drying out coal moisture will decrease, and that the heat efficiency coefficient will increase. Thereby the volatile component which is the main air polluting substance of raw coal will be reduced from 38-42 percent to reach the maximum acceptable level of air pollution as per national standards. The use of improved fuel instead of raw coal will lead to a reduction of particulate matters /$PM_{2.5}$, PM_{10}/ by 50-60 percent and a corresponding reduction of air pollution in the city by 40-50 percent.

The government decided to ban raw coal consumption, except by entities with special licenses to generate electricity and power in 6 central districts of Ulaanbaatar starting from 15 May 2019. An Action Plan for implementation of this decision during 2018-2020 was adopted with the aim of reducing air pollution caused by coal burning in *ger* districts. It is possible to strengthen the successful implementation of this Action Plan through public awareness and advocacy on the advantages of using improved fuel, instead of raw coal. A decision was also made to promote of using energy efficient heaters, including introduction of tax incentive[158].

Box 4.2. Voice of the Prime Minister: A call to Action

It is said that we are living in the most dangerous city and hospitals beyond capacity to accommodate people who suffer from illness and sorrow and paying the price by the health of our children and their lives. This is the challenge of a smoke that we could not find proper solutions to resolve for many years. We shall not have a right doing nothing…

... Many of the world's cities have a history of not bypassing, but overcoming the same challenge. The participation of citizens and accountability have been the main for their success. I believe we can overcome this tragedy cooperatively.

Sincerely: Khurelsukh Ukhnaa, Prime Minister of Mongolia
Source: https://www.facebook.com/KhurelsukhUkhnaa/

Therefore, to succeed in implementing actions for improving air quality, it is essential to ensure the linkages between policy implementation with the MSDV-2030 process and broaden the scope by shifting governance, budgeting system and business processes to a results-based approach.

Institutional Capacity Bottlenecks

A sound foundation to sustainably reduce air pollution can be created by strengthening the capacity needed at all levels of the government to ensure policy implementation. The lack of human resources and capacity in

undertaking systematic analysis of complex issues like air pollution and frequent changes of professional civil servants, resulting in instability of institutional settings have led to capacity deficits. This creates serious challenges in developing and implementing evidence-based polices. Even though a clear methodology to ensure policy coherence is in place, Mongolia faces limited capacity in using the methodology in practice. Moreover, insufficient leadership and commitment of sector ministries to manage and implement MSDV-2030 also get in the way. There are also capacity gaps in gathering evidence. Strengthening the capacity for effective collection and analysis of data may help in developing robust policies and regulations that can ensure continuity of air pollution reduction efforts. Capacity and accountability can be improved through regular trainings, capacity strengthening, purchase of more suitable equipment, creation of electronic information management system and introduction of required technologies in an integrated manner.

Public Participation and Knowledge, Awareness Bottlenecks

Air pollution is not only an issue for Ulaanbaatar and the government alone. Better knowledge and capacities are necessary across all stakeholders. Actions require joint efforts from all, including development partners. Solutions for air pollution require public awareness and knowledge not only for air pollution per se, but also insights into related sectors such energy substitution technologies, new opportunities, using innovative solutions for heating, conservation and insulation, and promoting participation of the private sector and civil society at all levels of governance. There is also a lack of knowledge on responsible consumption and partcipation of the citizens. These knowlege and capacity bottlenecks need to be addressed.

4.5. Towards Better Air Quality: Way Forward

The following actions were identified as short-term air pollution reducing actions:

- Create an initiative led by stakeholders to oversee policy actions on pollution reduction;
- Strengthen analytical approach to understanding the impact of air pollution and mitigate its impacts and improve effective means avoidance;
- Restrict the households burning raw coal and solid waste;
- Strengthen institutional capacities; and
- Increase public awareness by improving communications about air pollution.

Create an initiative led by stakeholders to oversee policy actions on pollution reduction. The National Committee on Reduction of Air Pollution needs to have the power to push through key measures that will have a positive impact on air quality. Since reducing air pollution requires many years of sustainable, consistent and coordinated efforts, it is important for political parties to reach agreement based on a common understanding. Such an agreement will ensure a sustainable and consistent approach to fighting air pollution regardless of which political party is in-charge. Therefore, the government can monitor the National Committee's decisions in implementation and ensure coordination and control. To ensure policy coherence, the secretariat should also be charged with preserving the institutional memory of air pollution reduction efforts. The Office of the National Committee for Air Pollution Reduction structure needs to be strengthened and supported by multi-stakeholder representation, including policy makers, civil society organizations, journalists and the private sector, which will enable the Government to strengthen the accountability framework.

Strengthen the analytical approach to understand the impact of air pollution

and mitigate its impacts and improve effective means of avoidance. In Mongolia, there is no common understanding of the effectiveness of different policies that could be implemented to address air pollution. Assessment based on an analysis of potential policy measures will increase the scope for identifying the most cost-effective solutions and ensuring relevant budget allocations. Thus, extended air pollution impact research needs to be considered through the development of a policy-oriented research programs on air quality management. Research and information on health, education, income and environmental impacts should be improved.

Restrict burning raw coal and solid waste. The Government is pursuing a policy on promoting the use of environmentally friendly fuels. In May 2017, the decision on banning entry and use of raw coal in Ulaanbaatar city was passed, which was an important step to prevent the *ger* area household burning coal. Furthermore, private sector involvement and financial support in the clean coal market will be studied by creating mechanisms for clean coal procurement and distribution. In addition, the introduction of both improved and electric stoves could lead to greater impact.

Strengthen institutional capacities. Sustainably reducing air pollution in Mongolia requires an increase in the implementation and enforcement capacities at all levels of Government administration. It also requires strong monitoring capacity through improved data collection and data analysis, which are essential to formulating new policies and regulations to sustain pollution reduction efforts. Monitoring will be improved through the delivery of training, capacity building, purchasing better equipment and introducing technology required to create and operate online management system.

Increase public awareness by improving communications about air pollution. Accurate information on air pollution levels and its associated health impacts should be provided regularly to people throughout the country, and particularly in Ulaanbaatar. It is important to focus on organizing awareness raising activites, such as broadly disseminating information through reliable sources, providing regular warnings on air quality levels in different areas and regularly monitoring air pollution levels in public places, such as hospitals and schools, in accordance with specific plans. Awareness campaigns and public education should be enhanced to inform and improve public understanding of effective methods to mitigate the harms caused by air pollution. Improving the people's understanding of the links between indoor and outdoor air pollution is another important area that should be targeted through awareness campaigns.

The following actions were identified as long-term air pollution reducing solutions:

- Classify polluting products by levels of toxic substance emissions;
- Promote the introduction of new technologies and strategies;
- Re-plan urban areas and implement urban development with environmental targets;
- Promote living standards in rural areas to reduce migration pressure to cities;
- Plan for sustainable transportation sector; and
- Develop long-term energy solutions for urban areas.

Classify polluting products by levels of toxic substance emissions. Behavioral change is necessary to reduce air pollution and sustain success for the long-term. In order to do so, measures must be taken to encourage the use of clean fuel or lower-emitting stoves. The Government should therefore research and regulate the classification of pollution sources (stoves, fuels, etc.) by emission levels. For example, by disincentivising pollutant products, for example, through higher taxes for low-quality fuels and discounts for clean fuels in the transport sector. It is important for government

agencies to ensure the implementation of legislation on business operating licenses, permitted emission levels and the "polluter pays" principle.

Promote the introduction of new technologies and strategies. The identification and application of new technologies and proven strategies will support long-term solutions for air pollution reduction. These include increasing and improving affordable housing options, making electric heating infrastructure accessible, and reducing pollution through clean coal and electric stoves. It is important to reflect these solutions in long-term policies. It is also important to test strategies and technologies. This will ensure the implementation of housing and energy solutions at a large scale during urban planning and development, which will create conditions for predicting and proving the more effective options. These initiatives and technologies require funding. Thus, a cooperation should be established to develop the partnership between the Government, private sector and development organizations, to address required investments and to build a foundation for future expansion.

Replan urban areas and implement urban development with environmental targets. Sustainable solutions to reducing environmental pollution require replanning of urban areas, which will ensure access to housing that is environmentally friendly and clean. Homes should have electric connections for good heating and sanitation facilities. A policy will be defined, scaling current projects and programs being implemented in Ulaanbaatar, without being restricted to subcenters. The idea is to ensure broader access to essential services across *ger* districts. Environmental issues—most notably air pollution, but also soil and water pollution—need to be put at the forefront of urban development and planning. Private transport, traffic, air pollution, poor housing and differences in living standards will be reduced through environmentally-responsive urban policy and its implementation.

Promote living standards in rural areas to reduce migration pressure to cities. The best way to reduce the pressure of migration is to ensure that economic and social opportunities exist for those residing in rural areas. Rural development plans have to be prepared in coordination with national development strategies, based on the comparative advantage of each province, to generate economic growth and employment opportunities. In particular, decentralization will be encouraged by developing cities near Ulaanbaatar, incentivising production and creating employment in these areas. Although this approach is complex, it would be more effective than legislating restrictions on migration. It is difficult to enforce restrictions on human mobility and monitor such legislation on the ground when people are migrating due to economic reasons. The reformation of regional development policies will be intensified in the near future.

Plan for a sustainable transportation sector. Although transportation is not the major cause of air pollution in Ulaanbaatar, as urban redevelopment occurs and urban areas become more economically dynamic, the demand for transport services will only increase. It is essential to develop mass urban transport systems that can efficiently cope with this increasing demand, reducing the need for private vehicles, helping manage traffic better and preventing further air pollution. Policy actions could include the provision of cleaner fuels in accordance with emission standards for cleaner engines, improved public transport to reduce the use of private cars, more car-pooling and restricted traffic areas.

Develop long-term energy solutions for urban areas. The demand for electricity and energy for heating in Ulaanbaatar is increasing. It is important to develop solutions for meeting this increasing demand and to closely align them with environmental targets. Urban planning will require energy solutions for the *ger* areas, including connecting these areas to reliable and clean energy and heating sources. It is important to increase the capacity of power plants and thermal plants,

but it is also critical to use new sources of renewable energy to meet the implementation of the 2025 policy objectives. Creation of combined sources of electric heating with latest technology is also expected to help. Options for providing electricity and heating compatible with the capacity to pay should be studied. Distributed renewable energy systems, i.e., geothermal with solar thermal and storage solutions, should also be tested for possible deployment in areas where extending the district heating system is uneconomical.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

Mongolia, a country with vast landmass, is located between two major global markets. It enjoys a stable external and internal political environment. It is a nation with a comparatively young population and abundant mineral resources. The country is largely homogenous in terms of ethnicity, language, religion and even culture, with a relatively small population of 3.2 million people (2018). Mongolia is the 19th largest country in the world. Almost half of its people are concentrated in the capital city, and the rest are spread over vast rural areas. The dispersion of the population undermines access to infrastructure and basic services for all. Nomadic animal husbandry based on an environmentally fragile ecosystem and the country's land-locked location, combined with a narrow economic base and ineffective past policies, have resulted in regional disparities and certain population groups being systemically left behind, deepening inequality and increasing poverty.

Nevertheless, going forward, there is significant potential for sustainable development. Human development related indicators, such as high literacy rates and human development index, have created a sound foundation for ensuring future sustainable development in Mongolia.

5.1. Change Towards Sustainable Development is Possible

Mongolia was one of the first countries to adopt the Sustainable Development Goals. In 2016, the Parliament of Mongolia adopted its MSDV 2030, a strategic policy document with the country's development priorities for the next 15 years. A lookback of the three years' implementation of SDGs points to taking a relook at the past development strategies of the country. Although, acceleration of economic growth is essential, the quality and composition of growth are equally important. Ensuring more equal distribution of future growth benefits to all people is critical, along with greater environmental responsibility. Changes in the country's development path will not be an easy process, requiring as it does, consensus from all development stakeholders.

The VNR has contributed to establishing a foundation for reaching a common understanding. It has contributed to improving multi-stakeholder dialogue and building consensus among stakeholders during the short period of VNR preparation. Furthermore, it has created a common understanding on a wider range of issues. Policy makers are now committed to a more pro-active collaboration. Decision makers recognize the need to identify coherent and coordinated solutions, which ensure that, in the long run, everyone benefits from more equal infrastructure and other opportunities, including across regions. They recognize the importance of growing the share of clean energy, better technology, charging for negative externalities, ensuring transparency and leaving no one systematically behind.

The example of air pollution has illustrated the value of a systemic approach as the best way to address multifaceted development challenges. The adverse impacts of air pollution are being experienced by everyone and it is affecting the quality of people's daily lives. Air pollution has became increasingly problematic due to the country's narrow economic structure and past policies widening inequalities across regions. Thus, increased air pollution requires immediate

changes aimed at creating productive and decent employment, pursuing policies to diversify the economy and reducing regional disparities.

5.2. Overall Conclusions

Deepening inequality, heavy dependency on one sector and the overall fragility of economic development may jeopardize the existing foundation for SDG achievement. Mongolia recognizes the criticality of "all-of-government" and "all of society" approaches in achieving sustainable development and the importance of creating a more inclusive and trasparent development policy and planning system that ensures multi-stakeholder participation.

While Mongolia is a country with high-medium-level human development, the increasing unemployment, poverty and inequality have become a hindrance to development and hence some of the population's vulnerabilities to development are becoming one of the main challenges for the country. Therefore, it is necessary to pay attention to the determination and implementation of rights-based development policies in accordance with the principles of "leave no one behind".

In order to do this, it is important to focus on the following issues in an integrated manner:

5.2.1. Developing and Implementing Comprehensive, Coherent Policies while Ensuring their Continuity and Sustainability:

- Major constraints include the lack of a comprehensive policy formulation methodology, inadequate application of scientific tools in implementation, the absence of established baselines to support monitoring and evaluation and poor identification of economic and industrial resources needed. Additionally, unsatisfactory definition of priorities and addressing trade-offs are also bottlenecks. Not fully identifying financial resources for policies, not having defined deadlines and unclear roles and responsibilities of all actors constitute other constraints. Therefore, such policies, with limitations in their proper implementation, in many instances become wish lists of actions.
- Consequently, the government needs to systematize its policy documents by reviewing them for policy coherence. It is necessary to update the medium-to-short term policies, ensure their coherence and develop medium and short term development strategies reflecting full SDG localization and defining medium and short term targets.
- In doing so, the country needs to develop and implement an economic diversification policy that creates productive employment, eliminate discrimination, and provides better opportunities for people living especially in rural areas.

5.2.2. Strengthening the Institutional Framework:

- At present, development planning in Mongolia is typically undertaken by Councils or Working Groups (in many cases temporary type) mandated to ensure policy coherence and coordination and maintain monitoring or oversight, which needs to be reviewed and modified.
- To overcome these limitations the law on development policy planning needs to be amended, with provisions to establish a state authority in-charge of policy coherence and coordination and reform the current structures of ministries and their functions.
- A major obstacle in ensuring institutional excellence is political instability associated with frequent changes in the government. Over last 28 years the average term of a government was 1.5 years, which affects the stability of the civil service and causes loss of institutional memory. The public service reform

underway is an opportunity to address this challenge also.

5.2.3. Creating Implementation Mechanisms:

- SDG implementation has been slow at both national and sub-national levels. The implementation needs to be accelerated by institutionalizing coordination mechanisms with defined roles and responsibilities and performance-based monitoring and evaluation systems.
- In the implementation of development policies, the availability of resources and capacities, public awareness, and the extent of multi-stakeholder participation, especially of the most disadvantaged sections, needs to be strengthened.
- Adopting a rights-based approach in development planning, and in monitoring and evaluation, is also essential.

5.2.4. Establishing a Monitoring and Evaluation Framework:

- Even after the adoption of a long-term development policy, monitoring indicators and targets have not been defined yet for the SDGs. Work has been defining SDG national indicators and targets for Mongolia, but more efforts to localize and define them at local levels are needed.
- Enhancing and institutionalizing performance-based monitoring, and strengthening accountability mechanisms for the civil servants are other important areas.

5.2.5. Developing a Financing Strategy for Implementing Priority Measures Towards Achieving SDGs:

- To achieve long-term development goals, a sound financing strategy is critical. This strategy needs to include estimated cost requirements, allocations aligned with policy priorities, defined sources of funding from public and private sources, and resource mobilization strategies.
- Three years have passed since the adoption of a long-term development policy. However, a financing strategy has not yet been developed. This is another example of a gap between policy intent and implementation, revealing silos in policy planning and budgeting.

5.2.6. Ensuring Multi-Stakeholder Participation and Partnerships:

- It is important to strengthen SDG awareness among all actors. Inadequate awareness and knowledge of development policies, and the absence of a relevant legal environment can be impediments for policy implementation, monitoring, accountability, and transparency. Transparency of information not only helps improve monitoring, but also contributes to creating awareness among the public.
- Strengthening anti-corruption and fair competition policies, transparency and public oversight are also essential. Ensuring disclosure of information to the public not only leads better monitoring, but is also vital for changing public perception and attitudes.
- Promoting public-private partnerships for development and strengthening corporate social responsibility among businesses can strengthen private sector contribution.
- Supporting the development of civil society organizations as agents of equitable development, promoting a

rights-based approach, community mobilization, advocacy and capacity building, and reflecting these initiatives policy and legal documents are also essential ingredients for inclusion.

- The integrating principles of participation in environmental and resource management, justice in national laws, policies and programmes are also valuable.

ANNEX 1. KEY DEVELOPMENT ACHIEVEMENTS AND CHALLENGES OF MONGOLIA IN IMPLEMENTING THE SUSTAINABLE DEVELOPMENT GOALS

Key achievements:

POVERTY

Social protection floor was identified (2014) and approved. In 2017, 88.9% of children, 97.5% of elderly, 44.7% of unemployed were covered by social protection floor

HEALTH

Life axpectancy at birth rose steadily from 63.2 (2000) to 69.9 (2017) up by 6.7 years.

Under five child mortality rate dropped to 16.7% from 25.6 per 1000 live births (2010-17), the infant mortality rate dropped to 13.6 from 20.2 per 1000 live births.

EDUCATION

Adult (15 and above age) literacy rate is 98%.

Primary, secondary, high schools enrollment rates reached over 98.6%.

96% of schools are connected to electricity. 95% of schools use computers in teaching, 68% have access to the internet.

Sustainable development education concepts have been adapted and included in pre-school, primary, secondary, tertiary educational curriculums

GENDER EQUALITY

Female HDI is 0.750, placing it higher than the value for males (0.733), resulted in GDI greater than one (1.023), which has affected Mongolia's placement into the Group 1 category

ENERGY

Night electricity rate was reduced by 50% from November, 2016 and by 100% from January 2017

Around 70 percent of consumers were included in the night electricity discount

INFRASTRUCTURE

Increase of productivity in manufacturing and services, and strong investment in mining lead to economic growth 5.3% in 2017 and 6.9% in 2018

Internet usage: 94% of total population

URBAN DEVELOPMENT

Ulaanbaatar: produces 64.7% of GDP

Constitutes large proportion of the national economy

ENVIRONMENT

Mongolia fulfils its UNFCCC commitments

The SPAs network is increased from 13.8% (2000) to 17.85% (2018)

CORRUPTION

Corruption index:

- 2017 (ranked 103/180 countries)
- 2018 (ranked 93/180 countries)

GOVERNANCE

Easy of doing business:

Ranked 62nd among 190 countries in 2017

Key challenges and bottlenecks:

POVERTY

- One third of the population lives below poverty line
- Poverty rate increased: 21.6% (2015), 29.6% (2016)
- Poverty share in rural areas (34.9%) exceeds urban poverty (27%)
- Micronutrient deficiencies are high among pregnant women and children
- Exclusive breastfeeding of infants has declined
- Prevalence of being overweight is high and increasing.

HEALTH

- Female life expectancy (75.4 years) is almost 10 years longer than male (65.9 years)
- Maternal mortality remains high in rural areas
- Fertility rate among adolescent girls (aged 15-19) is high
- The highest number of tuberculosis cases were detected among the people aged 15-34 years.
- 42% of STDs cases were recorded among the population aged 15-24 years.
- Non-communicable diseases constitute 85.9% of mortality

EDUCATION

- 682 children of age 6-14 years have dropped out of school
- Education quality and limited access for herder's children, children with disabilities, children of poor families, adolescent girls and young mothers remain future challenge.
- Educational facilities do not always meet required standards.
- Young graduates often face with difficulties to find jobs at the labor market.

GENDER EQUALITY

- Women's participation in labor force is only 52.2% while men's is 67.7%.
- Women are better educated but participate less in paid work.
- Women's share in higher decision-making position remains low. Their share of parliamentary seats is 17.1%.
- ender-based violence is likely to increase. 1 in 10 women were sexually abused when they were children.

WATER AND ENERGY

- Access to safe drinking water and sanitation is unequal across urban and rural areas.
- Ecosystem of the Tuul River Basin - home for 46.2 percent of the total population is getting degraded.
- An emerging need for enhancing good water governance.
- Population that have access to electricity 96.7%
- Electricity user households from central energy system 86.1%
- 21% of electricity is dependent on import (2017)
- Renewable energy sources 4.3%

ECONOMY AND EMPLOYMENT, INFRASTRUCTURE, INNOVATION

- Unstable economic growth:
- 17.3% (2011) 1.2% (2016) 6.9% (2018)
- Youth unemployment rate (25.3%) is 3 times higher than the national average
- A quarter of all employed persons were 'working poor', and one third of the working age youth (aged 15-24) were poor
- Informal employment is widespread. One out of four persons employed in non-agricultural activities was in informal employment.
- Transport is highly dependent on one sector: 57.8% of freight transport and 98.4% of passenger transport are carried out by road transport.

URBAN DEVELOPMENT, PRODUCTION AND CONSUMPTION

- 1.5 million (47% of total population) people are concentrated in the capital city that was planned for 500 thousand residents.
- 57% of total households in Ulaanbaatar live in ger districts.
- 66% of urban population and 44% of rural population use basic sanitation facilities.
- Unauthorized settlements in high risk areas and expansion of ger districts are increasing the risk of people being affected by natural disasters.
- Mongolia does not have a stand-alone national action plan on SCP.
- The country needs to strengthen resource use efficiency in production.
- Less than 10 percent are being recycled of growing urban solid waste.

ENVIRONMENT

- The frequency of extreme weather events has doubled.
- Over 60 percent of the land is degraded due to overgrazing and climate change.
- Very high per capita emissions nearly 2.7 times greater than the global average.
- The ecosystem has altered due to climate change and human activities.
- There is an increased trend in environmental crime.
- Revenue from natural resource use is not properly spent.

CORRUPTION AND GOVERNANCE

- Crime has increased.
  -41.5% between 2011 and 2016.
- From 2015-2017, per 100.000 population:
  - Crimes committed by people over 18 years of age 1219
  - victims of homicide 7-6,
  - victims of human traf-ficking 0.2-0.3
- Young people between the ages of 18 to 35:
  - 42% of criminals
  - 76.3% of drug related crimes
  - 48% of crime victims
- 27% of crime victims are women, 6% children and 5% death
- Violence increased:
- The number of women who are victims of domestic violence tripled in 2016 since 2012.
- Unstable government:
- Average length of government term is 1.5 years.
- Corruption and position crimes are not reducing
- People's right to access of information is limited

INEQUALITY

- The Inequality-adjusted HDI is 0.635, which lowers HDI by 13.7% due to inequalities in education, health and incomes.
- The GINI coefficient in consumption is highest in Ulaanbaatar (0.34) followed by 0.30-0.32 for aimag centers (2016).
- The average consumption of the richest 10% of the population is 7.7 times higher than the poorest 10%.

ANNEX 2. STATE OF SDG INDICATORS IN MONGOLIA

Goal 1. End Poverty in All Its Forms Everywhere

		INDICATOR	2015	2016	2017
1	1.2.1	Proportion of population living below the national poverty line, total	21.6 (2014)	29.6	29.6 (2016)
		By sex : Male	21.5 (2014)	29.5	29.5 (2016)
		Female	21.6 (2014)	29.7	29.7 (2016)
		By age groups: 0-18	28.5 (2014)	38.1	38.1 (2016)
		19-29	19.1 (2014)	26.2	26.2 (2016)
		30-39	21.6 (2014)	31.9	31.9 (2016)
		40-49	18.0 (2014)	24.7	24.7 (2016)
		50-59	13.3 (2014)	18	18.0 (2016)
		60<	10.0 (2014)	13.6	13.6 (2016)
2	1.3.1	Proportion of population covered by social protection floors/systems, by sex, children, unemployed persons, older persons, persons with disabilities, poor and non-poor			
		By sex: Male	47.8	50.4	49.7
		Female	58.5	61.2	59.8
		Children	95.7	96.4	88.9
		Unemployed persons	25.6	26.6	44.6 (*)
		Older persons	96.8	97.6	97.5
		Persons with disabilities	97	96.1	-
		Poor	60.1	62.5	
		Non poor	51.5	53.2	
3	1.4.2	Proportion of total adult population with secure tenure rights to land, with legally recognized documentation and who perceive their rights to land as secure	43.4	47.7	49.9
		Proportion of Mongolian adult citizens owning land	22.2	26.5	27.5
		Proportion of Mongolian adult citizens possessing land	21.2	21.2	22.4
		Proportion of Mongolian adult citizens using land	0.04	0.04	0.05
4	1.5.1	Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population	41.3	53.1	39
5	1.5.2	Direct economic loss attributed to disasters in relation to global gross domestic product (GDP)	0.5	0.3	0.4
6	1.5.3	Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, (yes-1, no-2)	1	1	1
7	1.a.2	Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies	29.1	27.6	34.4

Source: NSO, 2019, www.sdg.gov.mn

Goal 2. End Hunger, Achieve Food Security and Improved Nutrition and Promote Sustainable Agriculture

		INDICATOR	2015	2016	2017
8	2.2.1	Prevalence of stunting (height for age <-2 standard deviation from the median of the World Health Organization (WHO) Child Growth Standards) among children under 5 years of age	10.8 (2013)		
9	2.2.2	Prevalence of malnutrition (weight for height >+2 or <-2 standard deviation from the median of the WHO Child Growth Standards) among children under 5 years of age, by type (wasting and overweight)	1 (2013)		
		Wasting	1 (2013)		
		Overweight	10.5 (2013)		
10	2.5.1	Number of cultivated plant and animal genetic resources for food and agriculture secured in either medium- or long-term conservation facilities			
		Number of cultivated plant genetic resources	20.6	21.9	22.1
		Number of animal genetic resources	55.7	65.6	57.4
11	2.a.1	The agriculture orientation index for government expenditures	0.1	0.12	0.16

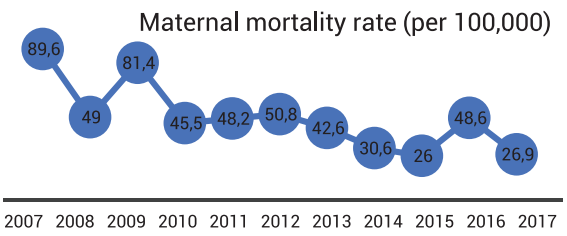
12	2.a.2	(2)Total official flows (official development assistance plus other official flows) to the agriculture sector, million, $	7.2	19.9	3.1
13	2.b.1	Agricultural export subsidies	0	0	0
14	2.c.1	Indicator of food price anomalies			
		Beef price	-0.86	-0.44	-0.04
		Mutton price	-0.61	-0.48	0
		Flour price	0.52	0.45	-0.23
		Rise price	0.06	0.11	-0.17
		Wheat price	0.06	-0.01	-0.13
		Millet price	-0.12	-0.04	-0.29

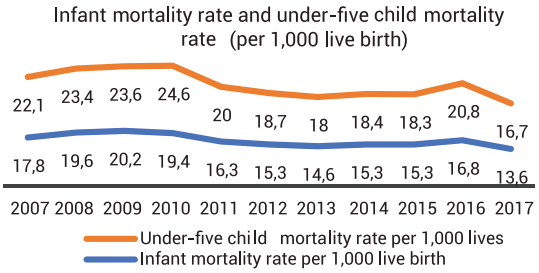
Source: NSO, 2019, www.sdg.gov.mn

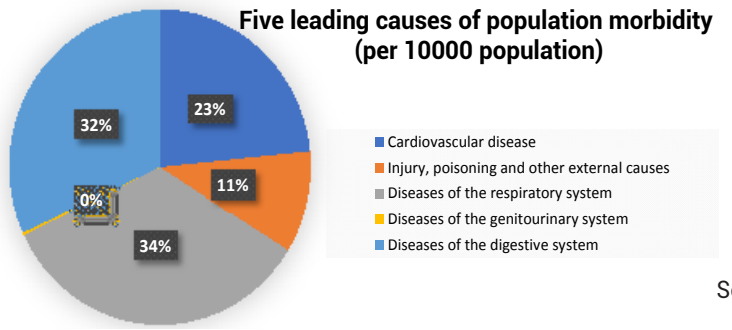
Goal 3. Ensure Healthy Lives and Promote Well-Being for All at All ages

INDICATOR			2015	2016	2017
15	3.1.1	Maternal mortality ratio	26	48.6	26.9
16	3.1.2	Proportion of births attended by skilled health personnel	99.8	97.1	95.9
17	3.2.1	Under-five mortality rate	18.3	20.8	16.7
18	3.2.2	Neonatal mortality rate	15.3	16.8	13.6
19	3.3.1	Number of new HIV infections per 1,000 uninfected population, by sex, age and key populations	0.0059	0.0084	0.0081
20	3.3.2	Tuberculosis incidence per 1,000 population	1.4	1.3	1.2
21	3.3.4	Hepatitis B incidence per 100,000 population	16	11.9	17
22	3.4.1	By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being			
		Mortality rate attributed to cardiovascular disease	18.5	17.4	17.5
		Mortality hrate attributed to cancer	13.2	13.4	13
		Mortality rate attributed to diabetes	0.6	0.5	0.6
		Mortality rate attributed tochronic respiratory disease	0.6	0.6	2
23	3.4.2	Suicide mortality rate	16	15	15
24	3.6.1	Death rate due to road traffic injuries	18.8	15.8	17.4
25	3.7.1	Proportion of women of reproductive age (aged 15-49 years) who have their need for family planning satisfied with modern methods	48.2 (2013)		
26	3.7.2	Adolescent birth rate (aged 10-14 years; aged 15-19 years) per 1,000 women in that age group	37.9	33.6	31.2
		Birth rate , by 10-14 year olds	0.0	0.0	0.0
		Birth rate , by 15-19 year olds	37.9	33.6	31.2
27	3.9.3	Mortality rate attributed to unintentional poisoning	1.6	1.7	
28	3.a.1	Age-standardized prevalence of current tobacco use among persons aged 15 years and older	27.1 (2013)		
		Male	56.1 (15-49 age, 2013)		
		Female	7.8 (15-49 age, 2013)		
29	3.c.1	Health worker density and distribution			
		Number of doctors per 1,000 people	3.2	3.3	3.4
		Number of pharmacists per 1,000 people	0.5	0.5	0.6
		Number of nurses per 1,000 people	4.1	4.1	4
		Number of dentists and technicians per 1,000 people	0.3/0	-	-
30	3.d.1	International Health Regulations (IHR) capacity and health emergency preparedness	87	81	

Source: NSO, 2019, www.sdg.gov.mn







Source: www.1212.mn

Goal 4. Ensure Inclusive and Equitable Quality Education and Promote Lifelong Learning Opportunities for All

		INDICATOR	2015	2016	2017
31	4.2.1	Proportion of children under 5 years of age who are developmentally on track in health, learning and psychosocial well-being, by sex	76 (2013)		
32	4.2.2	Participation rate in organized learning (one year before the official primary entry age), by sex	66.2	68.3	64.6
33	4.3.1	Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, by sex	61.5 (2013)		
35	4.6.1	Percentage of population in a given age group achieving at least a fixed level of proficiency in functional (a) literacy and (b) numeracy skills, by sex			
		Male	95.2 (2013)		
		Female	97.5 (2013)		
36	4.a.1	Proportion of schools with access to: (a) electricity; (b) the Internet for pedagogical purposes; (c) computers for pedagogical purposes; (d) adapted infrastructure and materials for students with disabilities; (e) basic drinking water; (f) single-sex basic sanitation facilities; and (g) basic handwashing facilities (as per the WASH indicator definitions)			
		(a) electricity	96.6	96.6	96.6
		(b) the Internet for pedagogical purposes	67.8	68.4	68.4
		(c) computers for pedagogical purposes	94.8	95.4	95.4
37	4.b.1	Volume of official development assistance flows for scholarships by sector and type of study	9.3	11.9	
38	4.c.1	Proportion of teachers in: (a) pre-primary; (b) primary; (c) lower secondary; and (d) upper secondary education who have received at least the minimum organized teacher training (e.g. pedagogical training) pre-service or in-service required for teaching at the relevant level in a given country			
		Proportion of teachers in pre-primary	95.7	94.8	95
		Proportion of teachers in primary	92.7	98.8	98.8
		Proportion of teachers in lower secondary and upper secondary	82.4	98.1	99.2

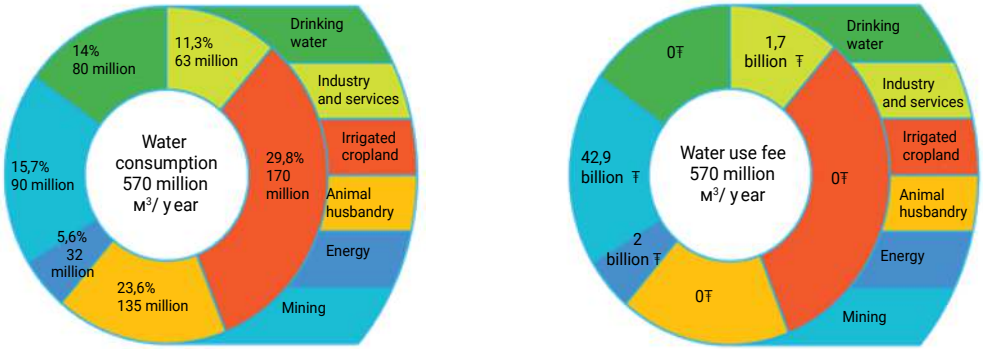
Source: NSO, 2019, www.sdg.gov.mn

Goal 5. Achieve Gender Equality and Empower All Women and Girls

		INDICATOR	2015	2016	2017
39	**5.1.1**	Whether or not legal frameworks are in place to promote, enforce and monitor equality and non-discrimination on the basis of sex	1	1	1
40	**5.2.1**	Proportion of ever-partnered women and girls aged 15 years and older subjected to physical, sexual or psychological violence by a current or former intimate partner in the previous 12 months, by form of violence and by age			
		Sexual	-	-	
		15-49		-	3.6
		15-64	-	-	3
		Sexual or physical	-	-	
		15-49	-	-	14.7
		15-64	-	-	12.7
		Сэтгэл санааны	-	-	
		15-49	-	-	25.5
		15-64	-	-	22.4
41	**5.2.2**	Proportion of women and girls aged 15 years and older subjected to sexual violence by persons other than an intimate partner in the previous 12 months, by age and place of occurrence	-	-	
		Total			
		15-49	-	-	3.1
		15-64	-	-	2.6
		Urban			
		15-49	-	-	3.6
		15-64	-	-	3
		Rural			
		15-49	-	-	1.9
		15-64	-	-	1.8
42	**5.3.1**	Proportion of women aged 20-24 years who were married or in a union before age 15 and before age 18			
		Proportion of women aged 20-24 years who were married or in a union age 15	0.07 (2013)		
		Proportion of women aged 20-24 years who were married or in a union before age 18	5.2 (2013)		
43	**5.5.1**	Proportion of seats held by women in national parliaments and local governments	27.6 (2012)	26.5	27.2
		Proportion of seats held by women in national parliaments	14.5 (2012)	17.1	17.1
		Proportion of seats held by women in local governments	27.7(2012)	26.7	27.2
		Proportion of seats held by women in Citizens' representatives council in *aimags*	16.6 (2012)	16.2	15.9
		Proportion of seats held by women in Citizens' representatives council in *soums*	28.9 (2012)	27.9	28.5
44	**5.5.2**	Proportion of women in managerial positions	37.8	36.7	40
45	**5.a.2**	(Proportion of countries where the legal framework (including customary law) guarantees women's equal rights to land ownership and/or control	1	1	1
46	**5.b.1**	Proportion of individuals who own a mobile telephone, by sex	103.5	111.4	122.8

Source: NSO, 2019, www.sdg.gov.mn

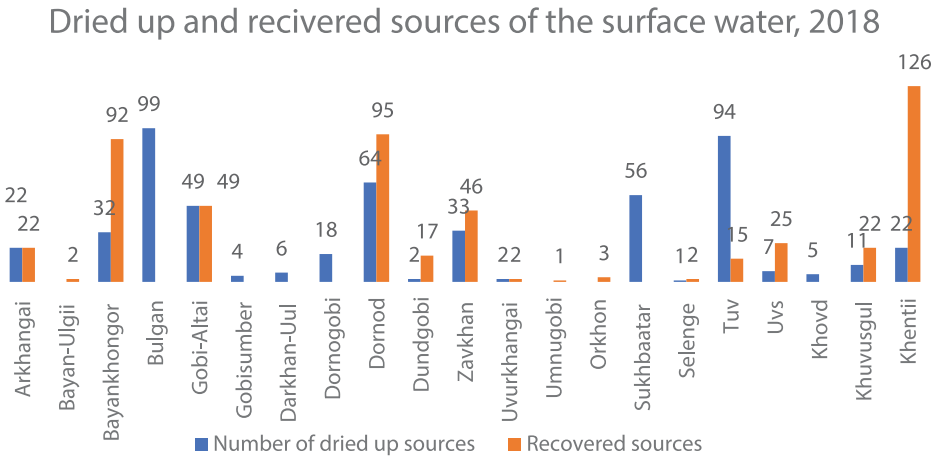
Goal 6. Ensure Availability and Sustainable Management of Water and Sanitation for All



Source: MET 2019, Report on Mongolian environment state 2017-2018.

		INDICATOR	2015	2016	2017
47	**6.1.1**	Proportion of population using safely managed drinking water services	65.2 (2010)		
48	**6.2.1**	Proportion of population using safely managed sanitation services, including a hand-washing facility with soap and wa	54.3 (2010)		
49	**6.4.1**	Change in water-use efficiency over time	-	26.11	
50	**6.5.2**	Proportion of transboundary basin area with an operational arrangement for water cooperation	100	100	100
51	**6.a.1**	Amount of water- and sanitation-related official development assistance that is part of a government-coordinated spending plan	0.2	0.3	2.5
52	**6.b.1**	Proportion of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management	45	45	45

Source: NSO, 2019, www.sdg.gov.mn



Source: Ministry of Environment and Tourism, "Water related data in Mongolia" presentation, 2019.

Goal 7. Ensure Access to Affordable, Reliable, Sustainable and Modern Energy for all

		INDICATOR	2015	2016	2017
53	**7.1.1**	Proportion of population with access to electricity	96.7 (2010)		
54	**7.2.1**	Renewable energy share in the total final energy consumption	16.2	16.15	
55	**7.3.1**	Energy intensity measured in terms of primary energy and GDP	14.7	14.7	
56	**7.a.1**	Mobilized amount of $ per year starting in 2020 accountable towards the $ 100 billion commitment	0.2	-	

Source: NSO, 2019, www.sdg.gov.mn

Goal 8. Promote Sustained, Inclusive and Sustainable Economic Growth, Full and Productive Employment and Decent Work for All

INDICATOR			2015	2016	2017
57	**8.1.1**	Annual growth rate of real GDP per capital	0.3	-0.9	2.7
58	**8.2.1**	Annual growth rate of real GDP per employed person	-1.2	1.5	-2.3
59	**8.3.1**	Proportion of informal employment in non-agriculture employment, by sex	25	20	25
60	**8.4.2**	Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP			
		Domestic material consumption, thousand.tonne	173744.6	188919.9	197241.9
		Domestic material consumption per capita, tonne	57.4	61.2	62.6
		Domestic material consumption per GDP, kg/million.	7505	7890.4	7070.7
61	**8.5.1**	Average hourly earnings of female and male employees	3200	3100	3300
		Average hourly earnings of female employees	3000	3000	3100
		Average hourly earnings of male employees	3300	3300	3500
62	**8.5.2**	Unemployment rate	7.5	10	8.8
		Unemployment rate, by sex			
		Male	8.2	11.6	9.6
		Female	6.7	8.2	7.8
		Unemployment rate, by age groups			
		15-19	18.8	24.6	24.8
		20-24	17.7	25.2	22.3
		25-29	8.6	13.1	13.1
		30-34	6.3	8.9	8.5
		35-39	6.8	7.9	6.6
		40-44	5.6	7.6	6.1
		45-49	6.4	7.9	5.9
		50-54	4.7	7.2	6.3
		55-59	3.7	4.9	4.5
63	**8.6.1**	Proportion of youth (aged 15-24 years) not in education, employment or training	16.8	20.5	19.8
64	**8.7.1**	Proportion and number of children aged 5-17 years engaged in child labour, by sex and age	17.3 (2013)		
		Male	19.3 (2013)		
		Female	15.3 (2013)		
		by age groups			
		5-11	14.9 (2013)		
		12-14	22.1 (2013)		
		15-17	18.1 (2013)		
65	8.9.1	Tourism direct GDP as a proportion of total GDP	0.3	0.2	0.2
		Tourism direct GDP as a proportion of total GDP growth rate	-0.002	0.01	0.21
66	**8.10.1**	(Number of commercial bank branches and automated teller machines (ATMs) per 100,000 adults			
		Number of commercial bank branches per 100,000 adults	67.9	68.3	
		Number of automated teller machines (ATMs) per 100,000 adults	73.4	86.9	
67	**8.10.2**	Proportion of adults (15 years and older) with an account at a bank or other financial institution or with a mobile-money-service provider	103.9	126.5	
68	**8.a.1**	Aid for Trade commitments and disbursements	0.4	-	
69	**8.b.1**	Total government spending in social protection and employment programmes as a proportion of the national budgets and GDP	1	1	1

Source: NSO, 2019, www.sdg.gov.mn

Goal 9. Build Resilient Infrastructure, Promote Inclusive and Sustainable Industrialization and Foster Innovation

INDICATOR			2015	2016	2017
70	9.1.2	Passenger and freight volumes, by mode of transport			
		Air passengers carried, million passengers	0.6	0.7	0.8
		Road passengers carried, million passengers	256.5	260.7	212.2
		Railway passengers carried, million passengers	2.8	2.6	2.6
		Carried freight by air, thousand tonnes	2.8	3.1	3.1
		Carried freight by road, thousand tonnes	16682.2	20406.2	31212.9
		Carried freight by railway, thousand tonnes	19150.8	19989.1	22765.1
71	9.2.1	Manufacturing value added as a proportion of GDP and per capita			
		Manufacturing value added as a proportion of GDP and per capita	5.8	5.6	6.6
		Manufacturing value added as a proportion of GDP	310.2	294.5	357.6
72	9.2.2	Manufacturing employment as a proportion of total employment	7.1	7.5	7.5
73	9.3.2	Proportion of small-scale industries with a loan or line of credit	104.2	76.5	
74	9.5.1	Research and development expenditure as a proportion of GDP	0.05	0.04	0.04
75	9.a.1	Total official international support (official development assistance plus other official flows) to infrastructure	188.4	109.4	94.2

Source: NSO, 2019, www.sdg.gov.mn

Goal 10. Reduce Inequality within and Among Countries

INDICATOR			2015	2016	2017
76	10.1.1	Growth rates of household expenditure or income per capita among the bottom 40 per cent of the population and the total population	0	0	0
77	10.2.1	Proportion of people living below 50 per cent of median income, by age, sex and persons with disabilities	26.8	25.3	26.7
78	10.3.1(4)	Proportion of the population reporting having personally felt discriminated against or harassed within the previous 12 months on the basis of a ground of discrimination prohibited under international human rights law	-	128 (2016.11-2017.10)	
79	10.4.1	Labour share of GDP, comprising wages and social protection transfers	27	27.6	28.1
80	10.b.1	Total resource flows for development, by recipient and donor countries and type of flow (e.g. official development assistance, foreign direct investment and other flows)			
		Foreign loan and aid	331.6	666.7	938.4
		Foreign direct investment	94.3	517.9	1494.4

Source: NSO, 2019, www.sdg.gov.mn

Goal 11. Make Cities and Human Settlements Inclusive, Safe, Resilient and Sustainable

INDICATOR			2015	2016	2017
81	11.2.1(1)	Number of population that has access to public transport in Ulaanbaatar (million. people)	238.3	244.3	
82	11.2.1(2)	Total expenditure (public and private) per capita spent on the preservation, protection and conservation of all cultural and natural heritage, by type of heritage (cultural, natural, mixed and World Heritage Centre designation), level of government (national, regional and local/municipal), type of expenditure (operating expenditure/ investment) and type of private funding (donations in kind, private non-profit sector and sponsorship)	52.3	163.4	201.9
83	11.5.1	Number of deaths, missing persons and persons affected by disaster per 100,000 peoplea	41.3	53.1	39
84	11.6.1	Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban solid waste generated, by cities	0.3	8.9	5.1

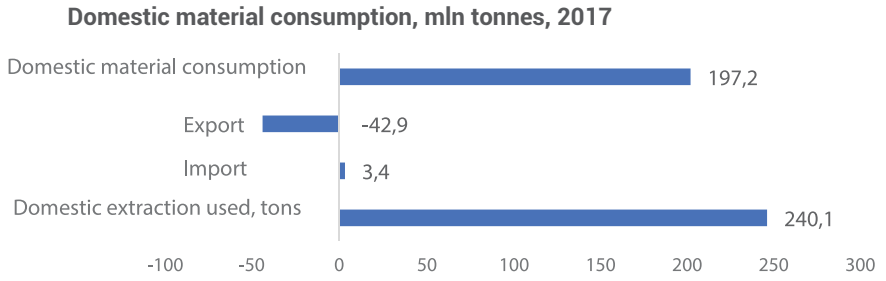
85	11.6.2	Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted)			
		PM 10	0.08	0.12	0.11
		PM 2.5	0.14	0.07	0.06
86	11.b.1(7)	Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030a	1	1	1

Source: NSO, 2019, www.sdg.gov.mn

Goal 12. Ensure Sustainable Consumption and Production Pattern

INDICATOR			2015	2016	2017
87	12.2.2(3)	Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP			
		Domestic material consumption, thousand.tonne	173744.6	188919.9	197241.9
		Domestic material consumption per capita, tonne	57.4	61.2	62.6
		Domestic material consumption per GDP, kg/million. ₮	7505	7890.4	7070.7
88	12.b.1(7)	Number of sustainable tourism strategies or policies and implemented action plans with agreed monitoring and evaluation tools	1	1	1

Source: NSO, 2019, www.sdg.gov.mn

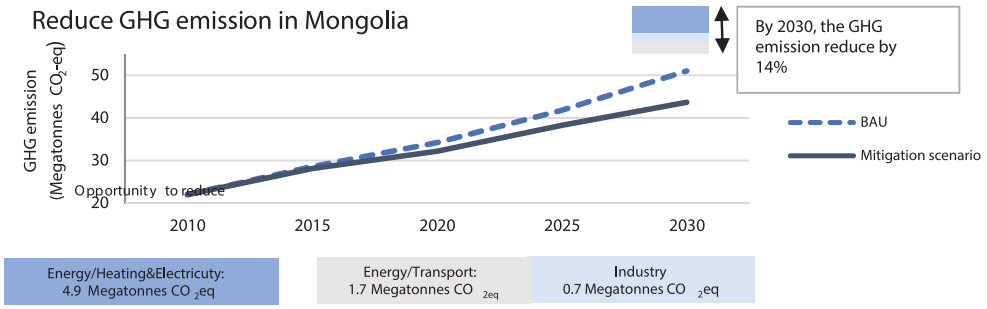


Source: www.1212.mn

Goal 13. Take Urgent Action to Combat Climate Change and Its Impacts

INDICATOR			2015	2016	2017
89	13.1.1	Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population	41.3	53.1	39
90	13.1.2(2)	Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015–2030	1	1	1
91	13.2.1(7)	Number of countries that have communicated the establishment or operationalization of an integrated policy/strategy/plan which increases their ability to adapt to the adverse impacts of climate change, and foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production (including a national adaptation plan, nationally determined contribution, national communication, biennial update report or other)	1	1	1

Source: NSO, 2019, www.sdg.gov.mn

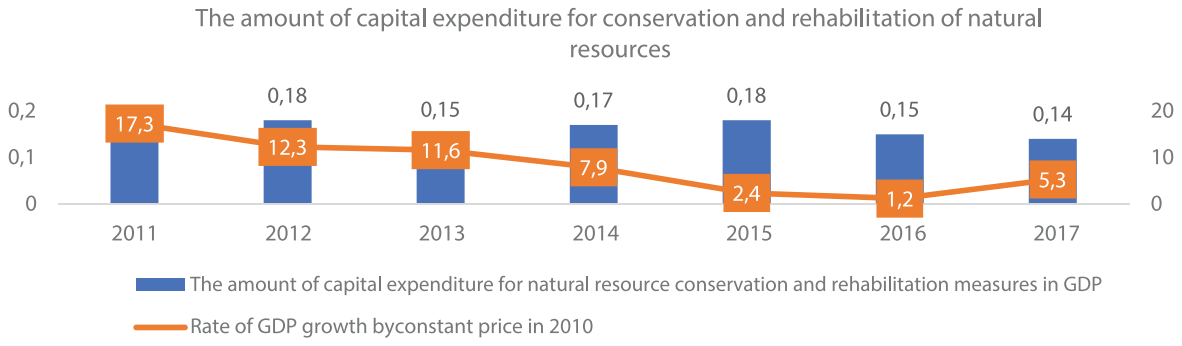


Source: Intended nationally determined contribution of Mongolia, 2015

Goal 15. Protect, Restore and Promote Sustainable Use of Terrestrial Ecosystems, Sustainably Manage Forests, Combat Desertification, and Halt and Reverse Land Degradation and Halt Biodiversity Loss

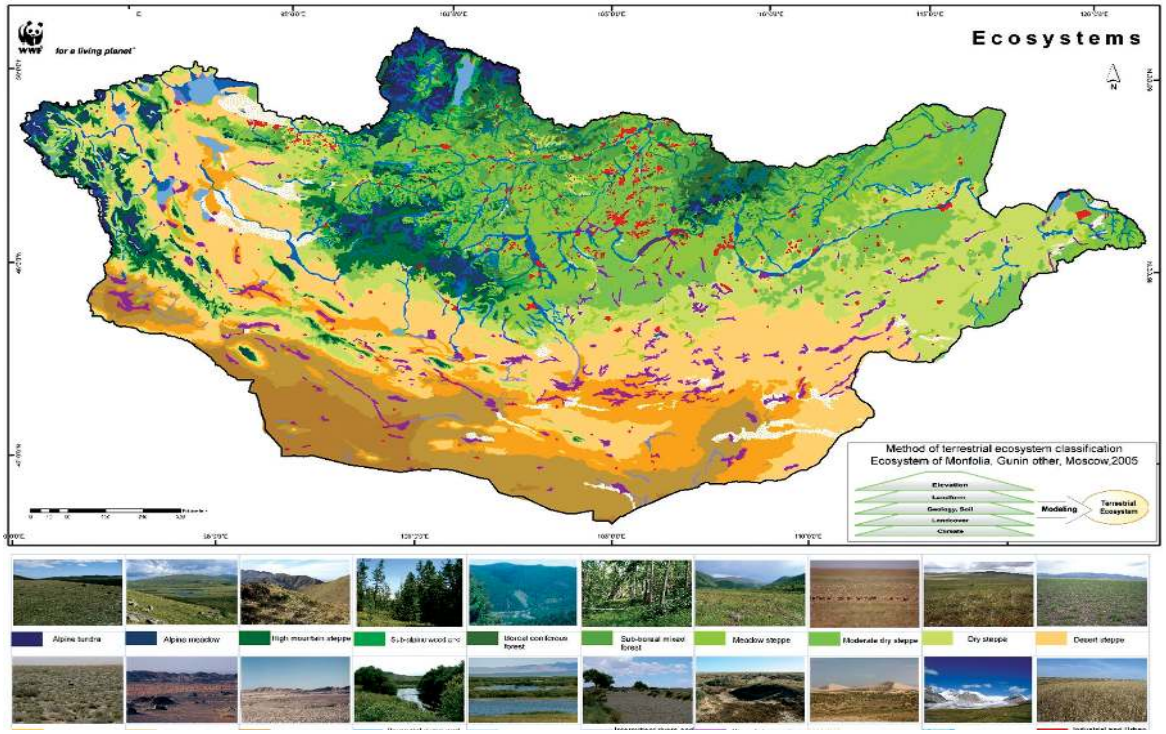
INDICATOR			2015	2016	2017
92	**15.1.1**	Forest area as a proportion of total land area	9.2	9.2	
93	**15.1.2(1)**	Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type	17.4	17.9	17.8
		Proportion of forest land	30.8	30.8	36.8
		Proportion of water source and surface water composition	44.7	44.7	44.8
		Share of endangered and endangered biodiversity, historical and cultural heritage	80	80	80
94	**15.3.1**	Proportion of land that is degraded over total land area	6.1	4.5	2.2
95	**15.a.1(1)**	Official development assistance and public expenditure on conservation and sustainable use of biodiversity and ecosystems	67.7	54.1	
96	**15.b.1(1)**	Official development assistance and public expenditure on conservation and sustainable use of biodiversity and ecosystems	5.6	2.8	5.8

Source: NSO, 2019, www.sdg.gov.mn



Source: www.1212.mn

The Ecosystem Map of Mongolia



Source: "Mongolia-Environmental performance" report, MET, UNECE 2018

Goal 16. Promote Peaceful and Inclusive Societies for Sustainable Development, Provide Access to Justice for All and Build Effective, Accountable and Inclusive Institutions at All Levels

INDICATOR			2015	2016	2017
97	**16.1.1**	Number of victims of intentional homicide per 100,000 population, by sex and age	7	6	6.2
98	**16.1.2**	Conflict-related deaths per 100,000 population, by sex, age and cause	0	0	
99	**16.1.3**	Proportion of population subjected to physical, psychological or sexual violence in the previous 12 months	-	0.04	
100	**16.2.1**	Proportion of children aged 1-17 years who experienced any physical punishment and/or psychological aggression by caregivers in the past month	-	0.01	
101	**16.2.2**	Number of victims of human trafficking per 100,000 population, by sex, age and form of exploitation	0.3	0.2	0.3
102	**16.6.1**	Primary government expenditures as a proportion of original approved budget, by sector (or by budget codes or similar)	94.7	95	95
103	**16.5.1(5)**	Proportion of persons who had at least one contact with a public official and who paid a bribe to a public official, or were asked for a bribe by those public officials, during the previous 12 months	21.2	17.9	14.6
104	**16.6.2**	Proportion of the population satisfied with their last experience of public services	27.3	27	28.1

105	16.7.1(6)	Proportions of positions (by sex, age, persons with disabilities and population groups) in public institutions (national and local legislatures, public service, and judiciary) compared to national distributions			
		Proportion of women in total civil servants	59.4	60	59.9
		Proportion of women in civil servants in public institutions	23.6	23.4	22.5
		Proportion of women in public administration	58	58.9	59.2
		Proportion of women in special service	26	27	25.2
		Proportion of women in support service	69.8	70.3	70.8
		Proportion of men in total civil servants	40.6	40.1	40.1
		Proportion of men in civil servants in public institutions	76.4	76.6	77.5
		Proportion of men in public administration	42	41.1	40.8
		Proportion of men in special service	74	73.1	74.8
		Proportion of men in support service	30.2	29.7	29.2
		Proportions of civil servants in public institutions, by age	100	100	100
106	16.10.1	Number of verified cases of killing, kidnapping, enforced disappearance, arbitrary detention and torture of journalists, associated media personnel, trade unionists and human rights advocates in the previous 12 months	0	0	0
107	16.10.2(7)	Number of countries that adopt and implement constitutional, statutory and/or policy guarantees for public access to information	1	1	1
108	16.a.1	Existence of independent national human rights institutions in compliance with the Paris Principles	1	1	1

Source: NSO, 2019, www.sdg.gov.mn

Goal 17. Strengthen the Means of Implementation and Revitalize the Global Partnership for Sustainable Development

INDICATOR			2015	2016	2017
109	17.1.1	Total government revenue as a proportion of GDP, by source	16.6	16.3	21.5
110	17.1.2	Proportion of domestic budget funded by domestic taxes	0	0	0
111	17.3.1	Foreign direct investments (FDI), official development assistance and South-South Cooperation as a proportion of total domestic budget	11.7	26.8	65.8
112	17.3.2	Volume of remittances (in $) as a proportion of total GDP	2.7	2.7	2.3
113	17.4.1	Debt service as a proportion of exports of goods and services	30	30.1	23.3
114	17.8.1	Proportion of individuals using the Internet	82	87.8	94
115	17.11.1 (7)	Developing countries' and least developed countries' share of global exports	0.025	0.027	0.033
116	17.18.2 (7)	Number of countries that have national statistical legislation that complies with the Fundamental Principles of Official Statistics	1	1	1
117	17.18.3 (7)	Number of countries with a national statistical plan that is fully funded and under implementation, by source of funding	1	1	1
118	17.19.2 (a)	Proportion of countries that (a) have conducted at least one population and housing census in the last 10 years; and (b) have achieved 100 per cent birth registration and 80 per cent death registration			
		(a) have conducted at least one population and housing census in the last 10 years	1	1	1
		(b) have achieved 100 per cent birth registration and 80 per cent death registration	1	1	1

Source: NSO, 2019, www.sdg.gov.mn

ANNEX 3. MONGOLIA'S POSITION IN THE WORLD: RANKINGS UNDER KEY GLOBAL DEVELOPMENT INDICES

SDG OR TARGET	SOURCES	MONGOLIA'S PERFORMAMCE ACCORDING TO MAJOR GLOBAL DEVELOPMENT INDICES		MONGOLIA'S INITIAL LEVEL IN GLOBAL RANKINGS	MONGOLIA'S RECENT PERFORMACE IN GLOBAL RANKINGS
		Rank	Index Value		
1	SSI Economic Wellbeing (2016) http://www.ssfindex.com/results/ranking-all-countries/	71 (156) 71 (156)		Good	No changes
3	World Happiness Index (2018) https://en.wikipedia.org/wiki/World_Happiness_Report	94 (156)	5.125	Good	Slightly positive
5	Global Gender Gap Index (2016) http://reports.weforum.org/global-gender-gap-report-2016/economies/#economy=MNG	58 (144) 56 (145)	0.705 (2016) 0.709 (2015)	Poor	Slightly negative
8	Global Competitiveness Index 2018 http://reports.weforum.org/global-competitiveness-report-2018/competitiveness-rankings/	101 (137) 104 (140)	3.90 (2017-2018) 3.8 (2015-2016)		No changes
9	Human Capital Index (2018) https://photius.com/rankings/human_capital_index_country_rankings_2018.html?fbclid=IwAR0Svy1b3iwbyS-RFxDMnbjAdh7ynzSMus929wC9773Te2ION-0MHWW2V2enY	52 (157) 51 (130)	0.63 (2018) 0.64 (2017)	Good	Slightly negative
10	Human development Index (HDI) (2018) https://en.wikipedia.org/wiki/List_of_countries_by_Human_Development_Index	92 (189) 92 (189)	0.741 (2017) 0.739 (2016)	Good	No changes
10	Inequality-adjusted Human development Index (IHDI) (2018) https://en.wikipedia.org/wiki/List_of_countries_by_inequality-adjusted_HDI	63 (151)	0.639 (2017)	Good	Slightly negative
12	Ecological footprint: BIOCAPACITY RESERVE (2014) http://data.footprintnetwork.org/#/?		5.5 (2014) 6.2 (2013)	Poor	Slightly negative
15	SSI Environmental wellbeing (2016) http://www.ssfindex.com/results/ranking-all-countries/	136 (156) 134 (156)		Poor	Slightly negative
15	Environmental Performance Index 2018 https://epi.envirocenter.yale.edu/epi-topline?country=&order=field_epi_rank_new&sort=asc	83 (180) 114 (178)	57.51 (2018) 64.39 (2016)	Poor	Positive
16	Global Peace Index http://visionofhumanity.org/indexes/global-peace-index/	46 (163) 46 (163)	1.821 (2018) 1.801 (2017)	Good	No changes
17	Corruption Perceptions Index 2018 https://www.transparency.org/cpi2018	93 (180) 103 (180)	37 (2018) 36 (2017)	Poor	Positive

Source: VNR Report preparation team

Note: In the table above, "high" indicators of Mongolia are shown in green, average are in yellow and poor outcomes are in red.

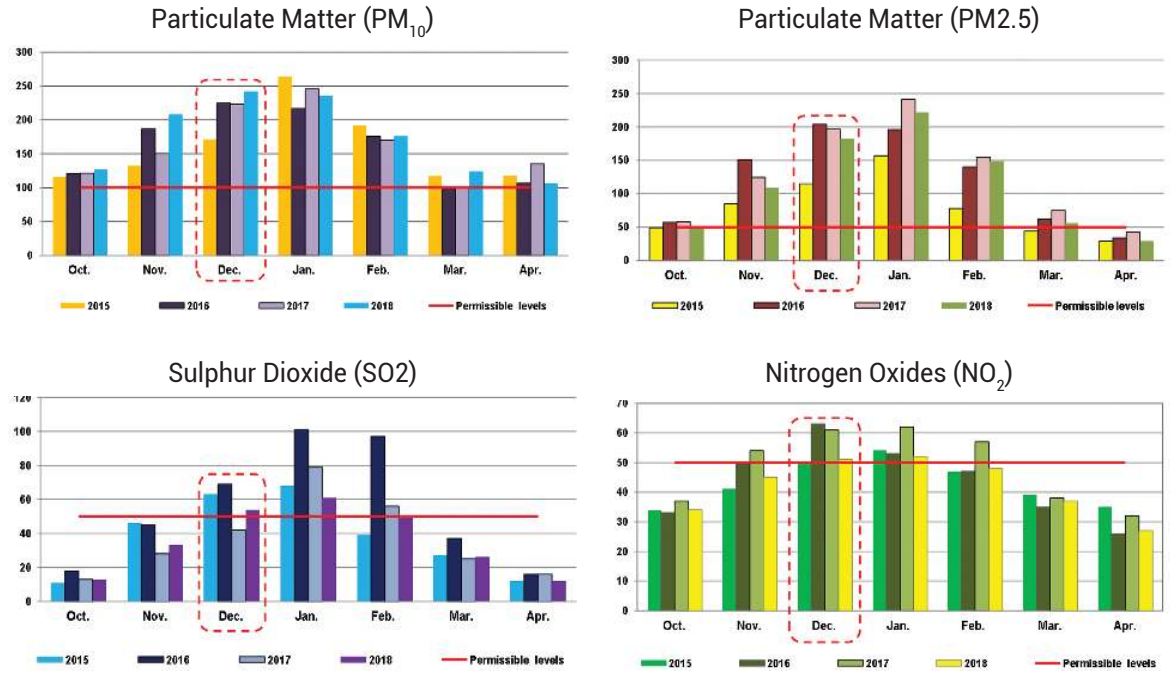
ANNEX 4. STATE OF AIR POLLUTION IN ULAANBAATAR

Table 6.1. Data on Air Quality Stations

Pollutants	Air quality stations
Sulphuric gas (SOx)	All stations
Nitrogen dioxide (NO2)	All stations
Carbon monoxide (CO)	UB-2, UB-4, UB-5, UB-7, UB-8, Sukhbaatar, Moron, Erdenet, Arvaikheer, Darkhan, Ulaangom, Khovd
Particle matter (PM10)	UB-2, UB-4, UB-5, UB-7, UB-8, Moron, Darkhan, Khovd, Uliastai, Olgii, Bayankhongor, Sukhbaatar
Particle matter (PM2.5)	UB-2, Arvaikheer, Erdenet
Ozone (O3)	UB-4, UB-5, UB-8
Mercury (Hg)	Central Environmental Monitoring Laboratory, Arvaikheer, Tsetserleg, Bayankhongor, Moron, Sukhbaatar
Heavy metals (Pb, Cu, Co...)	Central Environmental Monitoring Laboratory,

Source: Ministry of Environment and Tourism, 2018

Figure 6.1. Average Monthly Level of Pollutants in the Cold Season in Ulaanbaatar, 2015-2018.[159]

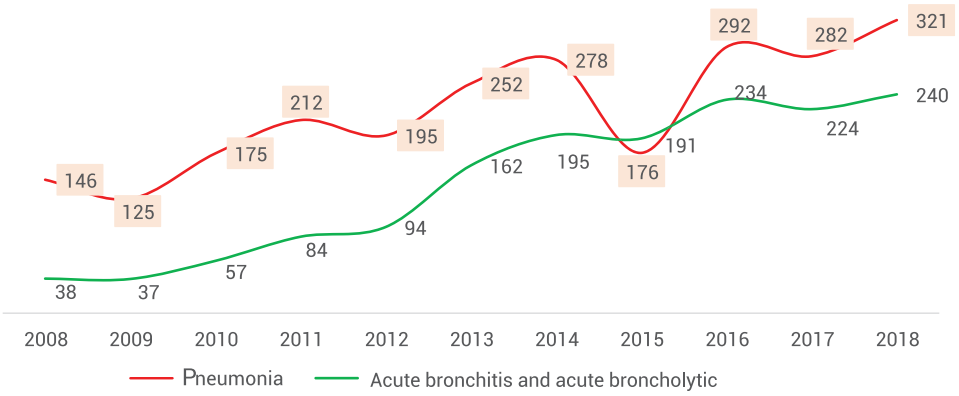


Source: Report of the Environmental Pollution National Committee, 2018

Air Pollution and Health

In Ulaanbataar city, acute bronchitis and acute bronchiolitis diseases have been rapidly increased since 2008 and the incidence of 10 000 population has risen to 240 in 2018, 6.3 times more than in 2008.

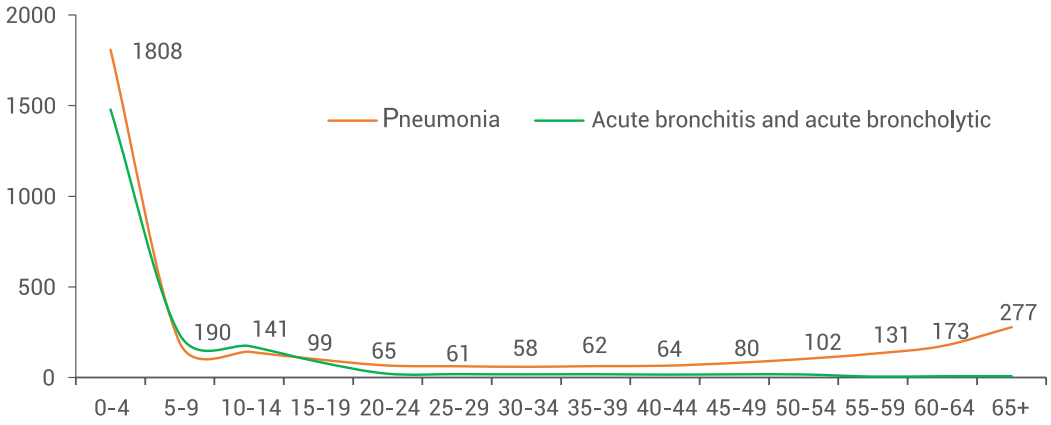
Figure 6.2. Some Respiratory System Diseases in Ulaanbaatar, per Capita of 10 000 persons, 2008-2018.



Source: NSO, "Outdoor Air Pollution in Ulaanbaatar and health" report, 2019

Exposure to air pollution during childhood can increase the chances of chronic diseases associated with air pollution.

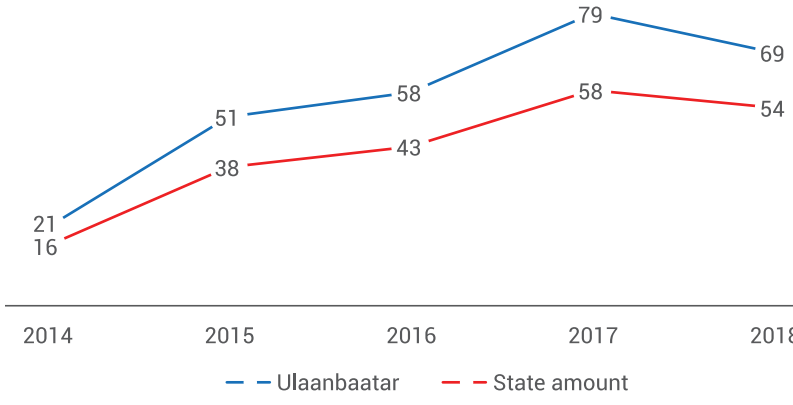
Figure 6.3. Major Respiratory Diseases, by Age Group, per 10 000 Persons, 2017



Source: NSO, "Outdoor Air Pollution in Ulaanbaatar and health" report, 2019

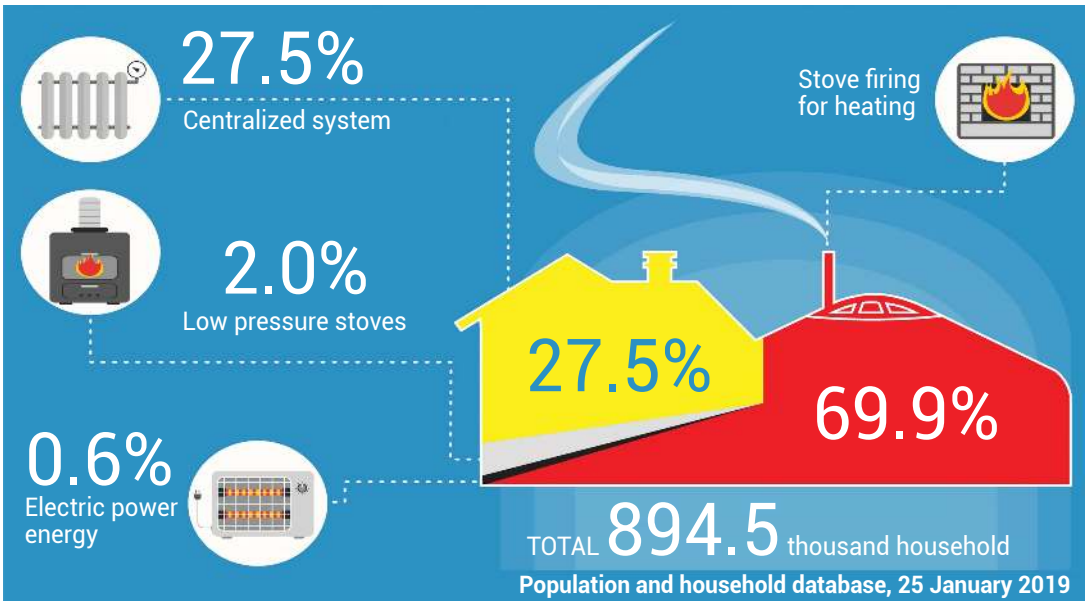
The statistical relationship between air pollution and miscarriage in Ulaanbaatar is high, as well as air pollution is high, but there is a high correlation between birth weight and low birth weight. Researchers say that the growth of fetus is associated with the season.

Figure 6.4. Growth of Fetus Disorders, per 10,00 live births, 2014-2018



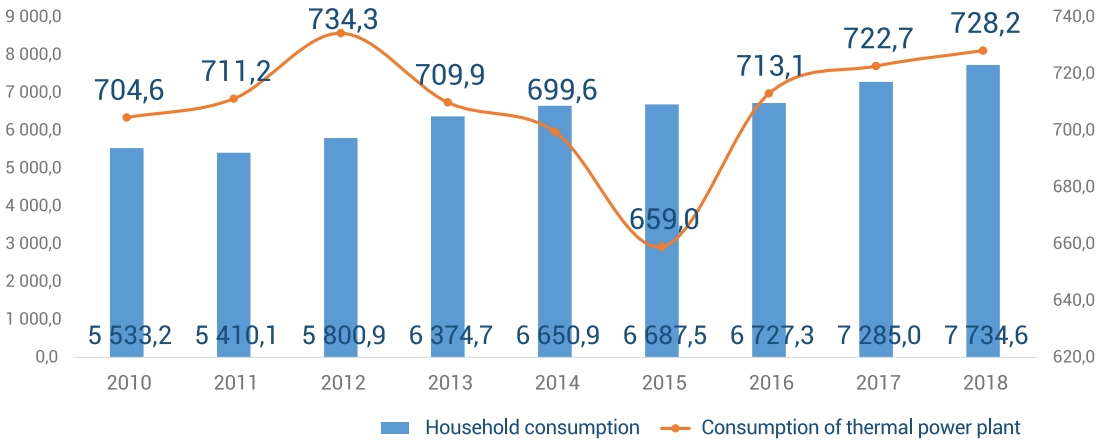
Source: NSO, "Outdoor Air Pollution in Ulaanbaatar and health" report, 2019

Figure 6.5. Total Number of Households, by Heating Sources



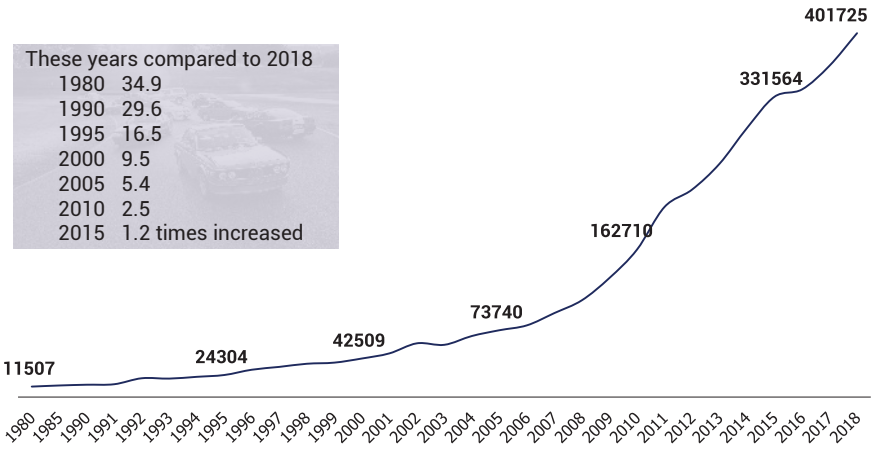
Source: A.Ariunzaya, "Air pollution and statistics" presentation, 2019

Figure 6.6. Trend in Coal Consumption, by Thermal Power Plants and Households, Thousand Tons, 2010-2018



Source: A.Ariunzaya, "Air pollution and statistics" presentation, 2019

Figure 6.7. Technical Inspections of Ulaanbaatar Covered by Vehicles, 1980-2018



Source: A.Ariunzaya, "Air pollution and statistics" presentation, 2019

ANNEX 5. KEY BOTTLENECKS AND FUTURE ACTIONS IN TACKLING AIR POLLUTION BASED ON SYSTEMS ANALYSIS

BOTTLENECKS:

1. **Policy environment**
   a. Content
   b. Coherence
   c. Coordination
   d. Financing
   e. Result orientation

2. **Implementation**
   a. Horizontal Coordination
   b. Vertical Coordination
   c. Cross stakeholder coordination
   d. Accountability
   e. Monitoring

3. **Capacity**
   a. Technical knowledge
   b. Civil service recruitment
   c. Training
   d. Attitude
      (do they think about social good?)
   e. Role of think tanks

4. **Public knowledge and voice**
   a. Platform for dialogues
   b. Participation
      (especially vulnerable groups)
   c. Advocacy
      (knowledge among of people)
   d. Role of media and civil society

RESPONSES TO THE BOTTLENECKS

Bottlenecks	Actions	Actor
Content **Coherence**	1. Policy review on against the SDGs; (gaps, overlaps, duplications, contradictions) 2. Prioritized actions (immediate actions) consistent with LT for example: rural development renewed emphasis 3. Stock taking for future (keep eye on changing, emerging issues) 4. Establish a platform for an high level dialogue 5. Permanent role of think tank for policy analysis, scenarios (National and international expertise)	**National Gov;** Contribution from CSOs, academia, VG, private sector.
Coordination: miss match between responsibility and authorities	6. Effective institutional coordination mechanism at the central level 7. Functional coordination: Roles and responsibilities with identified staff both at national and subnational levels (re-allocation) 8. Staff capacity	**PM or DPM have such role**
Financing	9. Public revenue 10. Aligning the public expenditure (including ODA with prioritized targets) 11. Efficiency of using money (fund) 12. Minimizing (corruption) misuse and waste 13. Accessing and aligning sources (domestic and dedicated funds as like for CC) 14. Leveraging private finance	**DPM**, **MOF**, local authorities, private sector, external actors
Result orientation	15. Re-iterating RBM for policy designing, implementation and reporting 16. Designing reporting formats for regular reports 17. Combining financial auditing with results' assessment 18. Strengthening staff capacity on RBM including attribution issues (credit taking)	All level of actors
Horizontal Coordination **Vertical Coordination**	19. Coherent policy design lead to improved coordination in implementation (including ministries, agencies and *aimags*) 20. Guidelines for public servants 21. Orientation of staff 22. Link results and coordination with annual performance review	**Cabinet Secretary** Ministries and agencies *Aimags*
Cross stakeholder coordination	23. Informed by sustainable development which include VG 24. Identify set of good practices for informed consent (big infrastructure projects such give land etc.,) 25. Gov and citizens' cooperation 26. Responsible business practices 27. Education on sustainable development and information 28. Clarity on policies and ensuring the stability 29. Ensure shared understanding on SD and policies	All stakeholders with facilitated by the National and sub-national Gov.
Accountability	30. Existing institutions informed by sustainable development for example: auditing, court, anti-corruption agency and CSOs etc., 31. Extend idea of gender budget/audit to sustainable development audit 32. Identify relevant indicators for performance 33. Training for staff on accountability 34. Linking PR with accountability towards sustainable development 35. Reward recognition and disciplinary actions link to performance	All level of gov. What kind of accountability for businesses?
Monitoring	36. Regular monitoring 37. Selection of proper indicator 38. Aggregated data, presentation, timely dissemination 39. Hierarchy and cross ministry monitoring the results 40. Linking monitoring to accountability	**Gov.,** other line ministries, local authorities, and research institutions
Technical knowledge	41. SDG awareness and knowledge in policy making, implementation and monitoring 42. Expertise, ToT, curriculum, regular training program, allocate time etc.,	**Gov.,** Academia Think tank Research institute Experts
Civil service recruitment	43. Efficient implementation of newly approved public sector reform law 44. Capacity development (career development) for sustainability	**Gov.: Public Service Council**

Training	45. Continues on the job training for civil servants 46. Training for other stakeholders (CSOs, VGs etc.,) 47. Strengthening capacity to use research findings 48. Conduct training for state org, CSO, private org., VGs etc., using modern technology	**Gov.,** Academia Think tank Research institute Experts CSOs
Attitude (do they think about social good?)	49. Ability to hear others and effectively cooperate with (VG, CSO and other stakeholders) 50. Strengthening analytical skills towards to changes and emerging issues, and act timely 51. Ethical and responsible manner towards everything	**Gov.** Public Service Council Professional experts
Strengthening local think tank (research centers of policy analysis)	52. Policy making based on findings of quality survey by professional think tank 53. Funding for think tank 54. Promote partnership of national think tank with international think tanks and experts' pool	**Gov.,** National (university etc.,) and international actors
Platform for dialogues	55. Support development dialogues among various stakeholders 56. E-dialogues on development emerging issues moderated by professional communicator	**Gov.,** National (IT etc.,) and international actors
Participation (sp-ly VGs)	57. Improved information access for VGs (khoroo and bag) 58. Encourage dialogues and discussions on their challenges at local level (khoroo, bag)	**Gov.,** Local gov., CSOs
Advocacy (knowledge among the people) **Role of media and civil society**	59. Continues training for journalist, reporters, and communicators on sustainable development 60. Mass media videos (development issues' delivering corn via TV, radio, FMs etc.,) For example: sanitarium toilet facilitation to avoid soil and air pollution 61. Efficient use of online system and mobile phones for dissemination of information on development issues (as internet usage of Mongolians is very high over 90%)	**Gov.,** All stakeholders

ANNEX 6. MATRIX USED TO IDENTIFY POPULATION GROUPS WHO ARE "AT RISK OF BEING LEFT BEHIND"

No.	Population Groups / SDG	1	2	3	4	5	6	7	8	9	10	11	12	13	15	16	17	Scores
1	Poor (people living below the national poverty line)	+	+	+	+	+	+		+		+			+	+	+		11
	Urban poor	+	+	+	+	+	+	+	+	+	+	+	+	+				12
	Migrants	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	16
	Rural poor	+	+	+	+	+	+	+	+	+	+							10
2	Herders	+	+	+	+		+	+	+	+	+			+	+	+	+	14
	With many heads of animals		+	+	+		+		+					+		+	+	8
	With a few heads of animals	+	+	+	+		+	+	+	+	+			+	+	+	+	14
3	Children	+	+	+	+	+	+				+	+	+			+	+	13
	Under 1 year old	+	+	+			+					+		+		+	+	8
	0-5 years of age	+	+	+	+		+					+		+		+	+	9
	6-12 years of age	+	+	+	+		+			+		+		+		+	+	10
	13-16 years of age	+	+	+	+		+		+	+		+		+		+	+	11
4	Youth	+	+	+	+		+		+		+	+	+			+	+	15
	15-19 years of age	+	+	+	+		+		+			+	+	+		+	+	11
	20-24 years of age	+	+	+	+	+	+		+		+	+	+	+		+	+	13
	25-34 years of age	+	+	+	+	+	+		+		+	+	+	+		+	+	13
5	Women	+	+	+		+	+		+			+		+		+		9
6	LGBT people	+		+	+				+		+	+		+		+		8
7	Ethnic minorities	+		+	+		+		+		+			+				7
8	Elders	+	+	+			+	+	+	+	+	+	+	+		+	+	13
9	People with disabilities	+	+	+	+	+	+	+	+	+	+	+	+	+		+	+	15
10	Small business owners	+		+				+	+	+				+	+		+	8

Note: The local researchers prepared the above list of people who may be at risk of being left behind under particular SDG based on previous research reports and currently available information. The list was analysed and marked by local researchers as "+" if the group is most likely to be most vulnerable under particular SDG. The six population groups which got highest number of '+' marks were identified as most vulnerable groups at risk of not fully benefitting from development.

Main Criteria for "Leave No One Behind" or Population "At Risk of Being Left Behind"

No.	Criteria	Herders		Migrants		PWD		Elders		Children		Youth		Total	
		+	-	+	-	+	-	+	-	+	-	+	-	+	-
1	Household income meeting basic needs	6	9	6	6	0	6	1	8	5	4	4	7	22	40
2	Access to essential health care services when necessary	5	10	4	8	3	3	3	6	8	1	6	5	29	33
3	Access to social welfare services in accordance with the law	4	11	9	3	3	3	5	4	7	2	5	6	33	29
4	Access to educational services	11	4	6	6	1	5	4	5	9	0	10	1	41	21
5	Employment opportunities	4	11	6	6	0	6	1	8			2	9	13	40
6	Regular access to information provided by government organizations	3	12	2	10	0	6	2	7	2	7	2	9	11	51
7	Access to information and technology (Internet and social media)	9	6	8	4	3	3	5	4	8	1	9	2	42	20
8	Access to infrastructure	2	13	1	11	0	6	4	5	1	8	3	8	11	51
9	Impact of distance on access to basic social services (remoteness)	5	10	2	10	0	6	1	8	6	3	3	8	17	45
10	Official registration of place of residence	14	1	6	6	6	0	9	0	9	0	11	0	55	7
11	Engagement in local decision-making activities	11	4	7	5	0	6	5	4	2	7	2	9	27	35
12	Suffrage	14	1	6	6	6	0	8	1			9	2	43	10
	Total	88	92	63	81	22	50	48	60	57	33	66	66	344	382

Note:

\+ Positive or agreed, accepted response
\- Negative or disagreed, unaccepted response

Participants of six target group discussions responded according to the criteria set by the researchers to verify the population at risk of being left behind. Based on the total results, the highest negative response of each group is the population at risk of being left behind.

ENDNOTES

SUMMARY

1. UNDP, 2018a.
2. Dzud is a Mongolian term for a severe winter in which large number of livestock die, primarily due to starvation due to being unable to graze, in other cases directly from the cold.
3. NSO, 2017.
4. Ger is Mongolian traditional round shaped dwelling, which is easily to assembly. It has been used since the Mongols started nomadic life with animal husbandry.
5. Kh.Battulga. President of Mongolia, March 15 2019.

CHAPTER 1

6. The principle of "Leaving No One Behind" is critical for SDG achievement. UN member states, both developed and developing, recognize the need to counter the persistence of systemic inequalities. The pledge to leave no one behind is embedded at the heart of the Sustainable Development Goals and Member States have committed to focus on targeting vulnerable groups (UN General Assembly, 2015, para 4).

CHAPTER 2

7. NSO, 2017.
8. NSO, 2019a.
9. Kh.Battulga. President of Mongolia, May 7 2019.
10. NSO, 2018d.
11. MOH, PHNC, UNICEF, 2018.
12. NSO, UNICEF 2019.
13. MoH, PHNC, UNICEF 2018.
14. NSO, 2019a.
15. NSO, 2018c.
16. MoH, 2018.
17. MOH, UNFPA 2016.
18. NSO, UNICEF 2019.
19. MoH, 2017.
20. PHNC, 2018.
21. MoH, 2017.
22. Government of Mongolia, 2017a.
23. Government of Mongolia, 2017b.
24. Committee on Combating Crimes in Mongolia, 2017.
25. Primary school (6-10 years old, 1-5 grade), secondary school (11-14 years old, 6-9 grade), high school (over 14 years old, 10-12 grade).
26. MOETCC reports that 40-50 students studying in one class become usual cases. There are 35 schools with 38-54 students per class in Ulaanbaatar, and such 3 school operate in rural areas. According to the national standard, the pre-school educational institutions the number of seats per class is 25 children, and for 889 public kindergartens this number reached 36.9 children per class.
27. MOESTCC, UNFPA WASH 2016.
28. MOESTCC, 2015.
29. NSO, 2018a.
30. UNDP, 2018b.
31. Ibid.
32. NSO, 2018a.
33. NSO, 2019a.
34. ILO, NSO, 2019.
35. NSO, UNFPA, SDC, AusAid, 2018.
36. NSO, UNFPA, SDC, AusAid, 2018.
37. Mr. Leo Heller, 2018.
38. Mr. Leo Heller, 2018.
39. Soum is an administrative unit of Mongolia, and it is the second sub-division of the aimag (please refer to the definition of "aimag").
40. Mr. Leo Heller, 2018.
41. MET, 2017.
42. MET, NDA, NSO, ESCAP, 2018.
43. MET, NDA, NSO, ESCAP, 2018.
44. S.Oyun, 2018.
45. NSO, 2019c.
46. Energy Regulatory Commission of Mongolia, 2018.
47. Mongolia is divided into aimags, and an aimag is an administrative unit of Mongolia assigned with territorial, economic and social complex with special functions and self-governance, provided by the Law of Mongolia on Administrative and Territorial Units of Mongolia and their Governance.
48. Bagh is the smallest administrative unit of Mongolia, and refers to rural settlements.
49. Energy Regulatory Commission of Mongolia, 2018.
50. Energy Regulatory Commission of Mongolia, 2018.
51. Salkhit Wind Power Plant, 2019.
52. D.Saranchimeg, 2019.
53. Feed in tariff was set to be 3.95 ₮/kWh in August 2015 from Energy Regulatory Commission, but the operation of 70 MW wind and solar power plants in 2017 increased the differences renewable energy price and tariff, which changed the feed in tariff to be at 11.88 ₮/kWh since August 15th, 2017.
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62. NSO, 2019a.
63. NSO, 2019a.
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66. NSO, 2019b.
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112. GoM, UNDP, 2018.
113. NDA, UNDP, 2018 .
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    c. SDC, IOM, 2018.
    d. Conclusions made based on sources, including matrix developed by researchers and interviews held with target groups.
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