

MONGOLIA'S TRANSITION TO A GREEN ECONOMY: A STOCKTAKING REPORT





UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION



unitar

United Nations Institute for Training and Research

Copyright © United Nations Environment Programme, 2014

The report is published as part of the Partnership for Action on Green Economy (PAGE) – an initiative by the United Nations Environment Programme (UNEP), the International Labour Organization (ILO), the United Nations Development Programme, the United Nations Industrial Development Organization (UNIDO) and the United Nations Institute for Training and Research (UNITAR).

This publication may be reproduced in whole or in part and in any form for educational or non-profit purposes without special permission from the copyright holder, provided acknowledgement of the source is made. UNEP would appreciate receiving a copy of any publication that uses this publication as a source.

No use of this publication may be made for resale or for any other commercial purpose whatsoever without prior permission in writing from the United Nations Environment Programme.

Citation

PAGE (2014), Mongolia's transition to a Green Economy: A stocktaking report.

Disclaimer

This publication has been produced with the support of PAGE funding partners. The contents of this publication are the sole responsibility of PAGE and can in no way be taken to reflect the views of any Government. The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the United Nations Environment Programme concerning the legal status of any country, territory, city or area or of its authorities, or concerning delimitation of its frontiers or boundaries. Moreover, the views expressed do not necessarily represent the decision or the stated policy of the United Nations Environment Programme, nor does citing of trade names or commercial processes constitute endorsement.

Cover photos:

©Francisco Anzola – ©Eskinder Debebe / UN Photo – ©Mr. Sergelenbat / MEGD

UNEP promotes environmentally sound practices globally and in its own activities. This publication is printed on 100% recycled paper, using vegetable inks and other eco-friendly practices. Our distribution policy aims to reduce UNEP's carbon footprint.

MONGOLIA'S TRANSITION TO A GREEN ECONOMY: A STOCKTAKING REPORT



ACKNOWLEDGEMENTS

This study was commissioned by the Partnership for Action on Green Economy at the request of the Ministry of Environment and Green Development of Mongolia. From the Ministry of Environment and Green Development, Chuluun Togtokh helped conceive this report, and it was managed by Enkhbat Altangerel, Director of Clean Technology and Science Division. Other officials from a variety of ministries contributed to this report including representatives from the Ministry of Economic Development, National Renewable Energy Center, Mongolian National Chamber of Commerce and Industry among others.

The research team at The Economic Policy & Competitiveness Research Center (ECPRC), collected data, drafted the report and managed the comprehensive stakeholder consultations. Particular thanks to Lakshmi Boojoo, Odonchimeg Ikhbayar and Nicholas Plummer.

From PAGE, the report was led by the UNEP Economics and Trade Branch under the guidance of Steven Stone. The report was conceived and designed by Fulai Sheng, and managed by Richard Scotney. Oscar Garcia (and later on, Asad Naqvi) and Achim Halpaap (UNITAR) the joint leads of PAGE's activities in Mongolia drove the project through to completion, with invaluable help from PAGE Mongolia Coordinator Batkhuyag Choiijiljav. The report also benefited from substantial contributions from Nara Luvsan, Angar Enkhthur, Zhengzheng Qu (UNEP), Moustapha Kamal Gueye (ILO), Claudia Linke-Heep (UNIDO) and Alice Dauriach (UNITAR).

The Regional Office for Asia-Pacific, led by Kaveh Zahedi and with the support of Stefanos Fotiou also provided support, along with the UN Mongolia country team, in particular Resident Coordinator Sezin Sinanoglu, Deputy Resident Coordinator Thomas Eriksson and UNDP staff members Bunchingiv Bazartseren and Doljinsuren Jambal. The report was edited by Edward Giradet. Laurence Duchemin designed the report and performed the layout.

PAGE gratefully acknowledges the support of all its funding partners: European Union, Germany, Finland, Norway, Republic of Korea, Sweden, Switzerland and United Arab Emirates.

FOREWORD

With its high economic growth on the back of its mining boom, Mongolia knows first-hand about the challenges of transitioning to a more socially inclusive and environmentally friendly economy. The Government of Mongolia recognizes the unique opportunity to lift itself to the rank of prosperous countries within a generation, while accepting the challenges associated with sustainable and equitable socio-economic development that enables Mongolia to adapt and thrive in the twenty-first century.

In response, the Government of Mongolia has enacted a series of environmental laws and is developing a Green Development Strategy, which has the potential to be the most significant piece of development policy since Mongolia's transition in the early 1990s.

With the world facing unprecedented population growth, greenhouse gas emissions and social inequality, the Rio+20 Declaration – The Future We Want – recognised in 2012 green economy as a vehicle for achieving sustainable development and poverty eradication. Following a request from Mongolian President Tsakhiagiin Elbegdorj for support from the Partnership for Action on Green Economy (PAGE), Mongolia has signed up to the Partnership for Action on Green Economy (PAGE) run by five UN agencies to support countries in their transition to greener and more inclusive economies.

PAGE seeks to enable Mongolia to formulate and adopt green economy policies by offering a suite of technical assistance services to the Government, strengthening the capacity to finance and implement inclusive green economy initiatives, hosting knowledge sharing events and, developing and providing global access to tools and training programmes on green economy.

Supported by the Mongolian Government, PAGE can be a catalyst to enable the country to formulate and adopt green economy policies by offering technical assistance services and to promote a common understanding of green economy. Such cooperation is also critical for delivering new ideas, resources and stimulating discussions on the identification of initiatives and action plans to promote a socially equitable, low carbon and environmentally friendly transformation of the economy.

The first of its kind, the Green Economy Stocktaking Report developed in consultation with key local, national and international partners, provides an excellent basis for Government and civil society to review Mongolia's green development and for development partners to guide and consolidate their efforts.



OYUN Sanjaasuren

Minister of Environment
and Green Development

ABBREVIATIONS AND ACRONYMS

ADB	Asian Development Bank
AQS	Air Quality Standard
ASS	Artisanal and Small Scale Mining
AusAid	Australia Aid
CHP	Combined Heat and Power Plant
CMTU	Confederation of Mongolian Trade Union
CNDS	Comprehensive National Development Strategy
EBRD	European Bank for Reconstruction and Development
EPCRC	Economic Policy and Competitiveness Research Center
GCGF	Green Credit Guarantee Fund
GDP	Gross Domestic Product
GDS	Green Development Strategy
GGGI	Global Green Growth Institute
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GoM	Government of Mongolia
HDF	Human Development Fund
IFC	International Finance Corporation
ILO	International Labour Organization
MAPP	Mongolian Air Pollution Project
MCA	Millennium Challenge Account
MDG	Millennium Development Goals
MED	Ministry of Economic Development
MEGD	Ministry of Environment and Green Development
MIA	Ministry of Industry and Agriculture
ML	Ministry of Labour
MNCCI	Mongolian National Chamber of Commerce and Industry
MONEF	Mongolian Employers' Federation
NDI	National Development Institute
NGO	Non-Governmental Organization
NREC	National Renewable Energy Center
NSO	National Statistical Office
OT	Oyu Tolgoi Copper-Gold Mine
PAGE	Partnership for Action on Green Economy
RP	Republic of Korea
SDC	Swiss Agency for Development and Cooperation
SME	Small and Medium Enterprises
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
USA	United States of America
VAT	Value Added Tax
WB	World Bank
WHO	World Health Organization

TABLE OF CONTENTS

1	1. Executive Summary
6	2. Introduction
2.1	Introduction to Partnership for Action on Green Economy
2.2	The purpose of the study
2.3	An overview of the research approach
8	3. Current social and economic situation and key challenges
3.1.	A large, land-locked central Asian country
3.2.	A harsh climate with low precipitation
3.3.	A sparse but growing population
3.4.	Increasing urbanization
3.5.	A booming economy
3.6.	Increasing reliance on mining
3.7.	Economic challenges
3.8.	Key environmental problems
19	4. Tackling the challenges: Government policies and projects for green development
4.1	High-level strategies driving the green economy
4.2	Social and economic development policies
4.3	City planning and transport
4.4	Encouraging home ownership
4.5	Tackling inflation
4.6	Employment programmes
4.7	Welfare policies
4.8	Gender equity
4.9	Population & demographics strategy
4.10	Environmental legislation
4.11	Renewable energy & energy efficiency
4.12	Efforts to curb air pollution
4.13	Steps for a greener mining industry
4.14	Agriculture, livestock and land management
4.15	Forestry programmes
4.16	Water and waste management
4.17	Promoting ecotourism
30	5. Beyond the Government: Current initiatives for a green economy
5.1	Green strategies in the private sector
5.2	Promoting Green products
5.3	Green banking and green loans
5.4	Promoting decent work

30	5.5	Energy efficiency and cleaner business
	5.6	Private sector initiatives to develop the renewable energy sector
	5.7	Combating Ulaanbaatar's air pollution
	5.8	Environmental governance
	5.9	Promoting sustainable mining
	5.10	Agriculture projects
	5.11	Forestry projects
	5.12	Water management strategies
	5.13	A greener transport sector
	5.14	Green financing
40	6.	Working together: Relevant institutions and actors for achieving PAGE objectives
	6.1	The "New Government for Changes"
	6.2	Employee and employer associations
	6.3	Mongolia's private sector: an important driver for green development
	6.4	International cooperation organizations in Mongolia
	6.5	Non-Governmental Organizations
48	7.	A way forward: Priority work streams and actions under PAGE
	7.1	Knowledge gaps and data
	7.2	Priority sectors
	7.3	Key actors and stakeholders to engage in the PAGE process
	7.4	Recommendations for PAGE project
54		References

1. EXECUTIVE SUMMARY



Mongolia finds itself on the threshold of prosperity. With its vast mineral resources, including copper, gold and coal, the economy is expected to continue growing quickly in the years ahead. However, this rapid economic growth creates both opportunities and challenges. If carefully managed, it could substantially reduce poverty and lead to Mongolia's emergence as one of the wealthiest countries in Asia.

Before it reaches this stage however, Mongolia must overcome a number of economic, social and environmental challenges. The mining and foreign investment boom has created an overdependence on the mineral sector. Volatility in exports and foreign investment is creating severe economic fluctuations and instability. Inflation has been persistent and the exchange rate continues to depreciate. The country also faces a huge infrastructure deficit in the critical areas of energy supply, water and transport. These weaknesses are stunting the development of productive industrial and agricultural sectors.

While incomes and wealth are improving, many Mongolians are being left behind. There is an increasing divide between the urban centers of Ulaanbaatar and smaller towns, mining regions and the countryside.

Mongolia faces a number of serious environmental problems including severe air pollution in Ulaanbaatar, mismanagement of water supplies and water pollution, land degradation and desertification. This is partly the result of mining and herding practices but also climate change and deforestation. Mongolia's leaders have to act now to avoid further long-term harm to the environment. These challenges are outlined in Chapter 1 of this 'Stocktake of Mongolia's Green Economy' report.

It is important that Mongolia takes the necessary steps to solving these environmental issues as part of its economic development. A strategy to solve such problems, while developing Mongolia's industry and creating jobs, will be crucial for the country's future. The aim should be to create *a green economy*, notably one that "results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities." (UNEP, 2013).

In an effort to address the country's environmental problems and set Mongolia's economy on a sustainable path, the Government of Mongolia (GoM) is seeking to pursue a strategy of green development.

At the same time, the Government is not the only actor leading the push towards green development. Elements of the private sector recognize the importance of a green economy and are also seeking to promote such development. One of the most influential business lobbies, the Mongolian National Chamber of Commerce and Industry (MNCCI), is pursuing its own green strategy, the "5x20" goals under the "Moving from Brown to Green Economy" national programme initiative. Banks such as XacBank and Golomt Bank are pursuing strategies for green loans and investment because it makes good business sense. Companies such as Newcom are also developing green energy sources.

Meanwhile, international organizations such as the World Bank, the Asian Development Bank (ADB) and the European Bank of Reconstruction and Development (EBRD) are providing funding for environmental projects to address air pollution and water management, and are providing loans to support renewable energy infrastructure. NGOs such as the Global Green Growth Institute and the World Wide Fund for Nature are also establishing their own environmental projects and are lobbying the Government. These various actors are described and catalogued in Chapter 4 of this report.

For this stocktaking we have included policies that are designed to bring about a combination of economic, environmental and social benefits. These policies assist with the causes and not just the symptoms of problems toward a green economy. Chapters 2 and 3 of this report provide a summary of green economy programmes



and policies. Chapter 2 offers a detailed description of current Government initiatives, while Chapter 3 describes those of the private sector, international organizations and NGOs. Table 1 lists each programme and policy under the category of high, medium and low importance, and summarises the importance and scope of each of them. Detailed financial information was not available for each policy or programme, so we have judged each based on our knowledge of its importance and stakeholder feedback. Generally, a programme with a high level of importance will have considerable funding and a lengthy time-frame of at least five years; a medium programme indicates a moderate level of funding and a time length of one to five years; a small level indicates a reduced programme and a short or uncertain time-frame.

Our findings suggest that the key priority sectors for the PAGE project and the development of a green economy in Mongolia should be: **agriculture, mining and renewable energy**. Although other sectors, such as transport, waste treatment and tourism will be important for Mongolia's development, agriculture and mining are the country's largest economic sectors, while renewable energy has considerable potential for its future.

The EPCRC has found five key areas of focus within the PAGE project. These are:

1. To support the National Green Development Strategy and its implementation as a long-term national programme. Consequently, the activities of the current Government and action plans of subsequent Governments' should be in line with this strategic document.
2. To promote joint implementation of the National Green Development Strategy by various ministries and other relevant institutions. This strategic programme should not be implemented by only one ministry; rather it should be a cooperative effort. In doing so, the facilitating of broad-based consultations on setting realistic priority targets based on existing documents and strategies, plus a comprehensive study of existing programmes and initiatives, should be organised.
3. To help assess the adequacy and appropriateness of existing investments and commitments that may contribute to the selected targets. These will help identify the policy actions required to induce investments and to enhance their effectiveness. To help identify resources to fill any investment gaps.
4. To help improve training and awareness on green economy aimed at tackling the knowledge gaps.
5. To introduce and support new and advanced technologies, green initiatives and best practices from other countries.

Table 1: Summary of stocktaking: Current and planned relevant green economy policy programmes and initiatives in Mongolia

Focus Area	Importance	Relevant programmes and Initiatives	
		Government Initiatives	Private Sector, International Agencies and NGO's
LAWS OF MONGOLIA	High	<ul style="list-style-type: none"> Socio-economic, environment and infrastructure related laws. In particular, "Revision of Environmental Laws in Mongolia 2012" "To Prohibit Mineral Exploration And Mining Operations at River Headwaters, Protected Zones Of Water Reservoirs And Forested Areas" "Renewable energy law of Mongolia (2007), Relations with respect to establishment of a renewable energy fund "The Law on Social Welfare 2012", "Law of Mongolia on Promotion of Gender Equality" (2011) The Tourism law of Mongolia (2000), www.legalinfo.mn) 	
HIGH-LEVEL STRATEGIES	High	<ul style="list-style-type: none"> National Green Development Strategy 	
	Medium	<ul style="list-style-type: none"> Millennium Development Goals (MDGs)-based comprehensive National Development Strategy (NDS) of Mongolia Government Action Plan (2012-2016) Priorities of Mongolian socio-economic development for the period 2012-2016 (medium-term development plan). The State Population Development Policy (2004-2015), ratified by the Mongolian State Great Khural, Resolution No.21, 2004 The Concept of Regional Development (2001–2020), ratified by the Mongolian State Great Khural, Resolution No.57, 2001 Resolution on the 2014 basic guidelines of socio-economic development, ratified by the Mongolian State Great Khural, Resolution No.39, 2013 The State Public Health Policy, ratified by the Mongolian State Great Khural, Resolution No.81, 2001 The State Policy on Oil Sector until 2017, ratified by the Mongolian State Great Khural, Resolution No.65, 2011 The State policy on development of high technology industrial sector, ratified by the Mongolian State Great Khural, Resolution No.34, 2010 Government Policy on Food and Agricultural Sector (2003-2015), ratified by the Mongolian State Great Khural, Resolution No.29, 2003 Government Policy on Ecology (2001-2020), ratified by the Mongolian State Great Khural, Resolution No.106, 1997 The State Policy on the Minerals Sector (2014-2025), ratified by the Mongolian State Great Khural, Resolution No.18, 2014 State Policy on Disaster Protection (2011-2020), ratified by the Mongolian State Great Khural, Resolution No.22, 2011 "Memorandum of Understanding" signed by the Ulaanbaatar city Mayor Bat-Uul.E and the Minister of Environment and Green Development Oyun.S. 	
ECONOMIC DEVELOPMENT, EMPLOYMENT AND SOCIAL WELFARE	High	<ul style="list-style-type: none"> Chinggis Bond (US\$1.5 billion) Traded on Japan market "Samurai" Bond (¥30 billion) Development Bank of Mongolia Infrastructure Spending (US\$580 million) 	<ul style="list-style-type: none"> Poverty Environment Initiative (UNDP-UNEP)
	Medium	<ul style="list-style-type: none"> "Joint Implementation of Medium-term Programme to Stabilize Prices of Key Commodities and Products", The Government of Mongolia and the Bank of Mongolia signed a "Memorandum of Understanding" "Several measures to improve citizen's housing", ratified by the Mongolian Government, Resolution No.2, 2011 The Employment support programmes Health Sector Strategic Master Plan (2006-2015), ratified by the Mongolian Government, Resolution No.245, 2005 	
ENVIRONMENTAL GOVERNANCE	High		<ul style="list-style-type: none"> UNDP's Strengthening Environmental Governance in Mongolia, Phase I and Phase II Strengthening the protected area network in Mongolia (SPAN), (UNDP)

Focus Area	Importance	Relevant programmes and Initiatives	
		Government Initiatives	Private Sector, International Agencies and NGO's
ENVIRONMENTAL GOVERNANCE	Medium	<ul style="list-style-type: none"> • National Action Programme on Climate Change (2011-2021), ratified by the Mongolian State Great Khural, Resolution No.2, 2011 • National Programme for Protected Areas (1998-2015), ratified by the Mongolian State Great Khural, Resolution No.29, 1998 • "Mongolian Livestock National Program" (2010-2021), ratified by the Mongolian State Great Khural, Resolution No.23, 2010 • The National Water Programme (2010-2021), ratified by the Mongolian State Great Khural, Resolution No.24, 2010 • The National Programme for Public Ecological Education (1997-2029), ratified by the Mongolian Government, Resolution No.255, 1997 • Subprogramme of Forest pests and Diseases (2004-2015), ratified by the Mongolian Government, Resolution No.5, 2004 • National Forest Programme (2001-2015), ratified by the Mongolian Government, Resolution No.248, 2001 • National Programme on Persistent Organic Pollutants, ratified by the Mongolian Government, Resolution No.99, 2006 • National programme on protection of ozone layer (1999-2030), ratified by the Mongolian Government, Resolution No.129, 1999 • National Programme for Promotion of Quality and Environmental Management, ratified by the Mongolian Government, Resolution No.146, 2002 • Meteorological Environment Sector Development Programme until 2015, ratified by the Mongolian Government, Resolution No.146, 2002 • National Programme on Combating Desertification (2010-2020), ratified by the Mongolian Government, Resolution No.90, 2003 • Clean Air Foundation • Redistribution of Aimag Funding based on Ecological Vulnerability in Bayankhongor, to be replicated across 6 other aimags in 2014. 	<ul style="list-style-type: none"> • Green Paper 2012 (MNCCI) • Development by Design (Nature Conservancy) • Biodiversity and Adaptation of Key Forest Ecosystems to Climate Change (GIZ) • Change and Redd+ certification (GIZ) • Biodiversity offset programs • Ulaanbaatar Clean Air Project (World Bank) • Ulaanbaatar Clean Air Initiative Phase II (Completed, EBRD) • Mongolian Air Pollution Project (MAPP) • Engaging Stakeholders for Environmental Conservation (ESEC), Asia Foundation • Reforestation program (MNCCI) • Ground Water Management in Southern Gobi (World Bank and AusAid) • Ecosystem-based Adaptation Approach to Maintaining Water • Security in Critical Water Catchments in Mongolia (UNDP) • UN Joint Program on Water and Sanitation
	High	<ul style="list-style-type: none"> • "New Construction" the Mid-term Target Programme (2005-2020), ratified by the Mongolian State Great Khural, Resolution No.36, 2010 • "Healthy city and the village, workplace, school" National Programme (2012-2016), ratified by the Mongolian Government, Resolution No.359, 2011 • "The National Renewable Energy Programme" (2005-2020), ratified by the Mongolian State Great Khural, Resolution No.32, 2005 • Ulaanbaatar Metro Project 	
	Medium		<ul style="list-style-type: none"> • Salkhit Wind Farm (Newcom group) • World Bank's Renewable Energy and Rural Electricity Access Project (REAP)
INFRASTRUCTURE RELATED PROJECTS AND PROGRAMMES MONGOLIA	Low		<ul style="list-style-type: none"> • Rehabilitation of three schools (USAID and GIZ) • Establishing energy efficiency (UNDP)
	Medium	<ul style="list-style-type: none"> • Programme on Education (2010-2021), ratified by the Mongolian Government, Resolution No.31, 2010 • The National Innovation Development Programme (2008-2015), ratified by the Mongolian Government, Resolution No.306, 2007 • Agricultural Stock Exchange 	<ul style="list-style-type: none"> • Sustainable Artisanal Mining Project (SDC) • Index-based Livestock Insurance in Mongolia (GOM with World Bank) • Mongolia Livestock and Agricultural Marketing Project (World Bank) • Agriculture and Food Security (SDC) • Biodiversity and Adaptation of Key Forest Ecosystems to Climate Change (GIZ) • Establishment of Climate-Resilient Rural Livelihoods (World Bank) • "Green eco hotel label" (managed by MNCCI) • Green products labeling (managed by MNNCI) • Organic food promotion (managed by MNNCI) • Green loans for promoting green technologies • Green Credit Guarantee Fund • XacBank carbon credits scheme • Golomt bank loans to support a green economy • Strategies for Green Public Transport in Mongolia (Research initiative by GGGI)
OTHER PROJECTS	Medium		

2. INTRODUCTION

2.1. INTRODUCTION TO PARTNERSHIP FOR ACTION ON GREEN ECONOMY

In 2012, the Rio+20 Declaration – The Future We Want – recognized a green economy as a vehicle for achieving sustainable development and poverty eradication. It called on the United Nations to support interested countries in their transition to greener and more inclusive economies.

The Partnership for Action on Green Economy (PAGE) is a response to the Rio+20 Declaration. It is an initiative by five United Nations Organizations: the United Nations Environment Programme (UNEP), the

International Labour Organization (ILO), the United Nations Industrial Development Organization (UNIDO) and the United Nations Institute for Training and Research (UNITAR), to support countries in pursuing an inclusive, resource-efficient, low-carbon economy. The overall vision of PAGE is to contribute to the equitable and sustainable transformation of national economic structures in 30 countries by 2020, with the ultimate intention to achieve environmental sustainability, decent job creation, reduced poverty and improved human well-being.

Over the next seven years, PAGE will support 30 countries to generate new jobs and skills, promote clean technologies, and reduce environmental risks





and poverty. More specifically, PAGE will develop and implement national green economy strategies, and build enabling conditions in participating countries by shifting investment and policies towards the creation of a new generation of assets, such as clean technologies, resource efficient infrastructure, well-functioning ecosystems, green skilled labour and good governance.

During the first two years of PAGE, the project will focus on seven pilot countries, and scale up this support to a total of 30 countries by 2020. Mongolia has been selected to be one of the seven pilot countries. There are three initiatives crucial to the inception phase of the report: a stocktaking report, an analysis of green jobs and green economy modeling.

The EPCRC has conducted this stocktaking report of the green economy in Mongolia. Another research work that the EPCRC has undertaken within the framework of the PAGE initiative is a “Green Jobs Mapping in Mongolia” study which is closely linked to this stocktaking study.

2.2. THE PURPOSE OF THE STUDY

The main purpose of this study was to identify the key economic, social and environmental challenges Mongolia is facing, how the Government is

responding, what other agencies are doing to assist, and how the PAGE program can support or otherwise help develop new programmes and policies.

2.3. AN OVERVIEW OF THE RESEARCH APPROACH

This research was conducted between September 2013 and March 2014. In doing so, the EPCRC conducted a desktop analysis and held interviews with key players in Mongolia from a range of Government Ministries, private sector organisations and international agencies among others. In addition, a broad-based cross ministerial validation workshop was organized in March 2014, where about 30 key representatives from various ministries and other stakeholders participated.



3. CURRENT SOCIAL AND ECONOMIC SITUATION AND KEY CHALLENGES

Mongolia has one of Asia's highest economic growth rates. Although many Mongolians faced economic difficulties and social dislocation during the transition from a planned to a market-based economy in the 1990's, in recent years the country has become increasingly wealthy and poverty has declined. However, this rapid growth, driven particularly by the development of the mining industry, has caused economic, social and environmental challenges. Developing Mongolia's green economy towards sustainable development will help to resolve these challenges through long term and effective measures.

3.1. A LARGE, LAND-LOCKED CENTRAL ASIAN COUNTRY

Wedged between Russia and China, Mongolia is the second largest land-locked country covering an area of 1.564 million km². Average elevation is 1,580 meters, and 81 per cent of the country is higher than 1,000 meters above sea level.¹ Northern Mongolia is covered by forest and mountain ranges, whilst desert, desert steppe, and steppe areas cover the south. The Western region is dominated by the Altai and Khangai mountain ranges, and the east is covered by vast plains and wild heaths.²

Although only 0.4 per cent of Mongolia is considered arable, much of the country is used for animal husbandry.³ Frozen ground or 'permafrost' covers 63 per cent of the land, concentrated in the mountainous regions.⁴ Mongolia is rich in mineral resources with substantial deposits of coal, copper, gold, molybdenum, lead, nickel, aluminum, tin and bismuth.

3.2. A HARSH CLIMATE WITH LOW PRECIPITATION

The Mongolian climate consists of long cold winters, short summers and low annual precipitation. Temperatures can fall to -40°C in winter and reach

40°C in summer. Ulaanbaatar is the world's coldest capital city, with an average daily temperature of -3.3°C.⁵

Despite cold temperatures, Mongolia is known as the land of the blue sky, with an average of 3,000 hours of sunshine annually, or eight hours per day. Average annual precipitation is low (200 to 220mm), ranging from 38.4 mm in the Gobi desert, to 389 mm in the north. Rainfall peaks between June and August, while the driest months are November to March. The country experiences droughts once every ten years, except in the Gobi desert where it is estimated to occur every five years.⁶

Despite the harsh conditions, Mongolia is home to a diverse range of fauna and flora. This includes some of the last remaining populations of threatened fauna including the snow leopard, Bactrian camel and Gobi bear.⁷

3.3. A SPARSE BUT GROWING POPULATION

Mongolia's population was 2.87 million in 2012. With 1.8 people per square kilometer, Mongolia is one of least densely populated countries in the world. However, the population has grown quickly in recent years, rising by 1.4 per cent per annum. Mongolia's population is expected to reach 3 million by 2015.⁸

3.4. INCREASING URBANIZATION

Mongolians are increasingly abandoning the traditional nomadic way of life and moving into urban areas. Migration to urban centers began during the socialist era from 1924 to 1992. In 1963, 60 per cent of Mongolians lived in rural areas and 40 per cent in urban areas. By 1993, only 44 per cent maintained rural lifestyles. The pace of urbanisation has increased considerably



in recent years - over two-thirds of Mongolians or 1.9 million people now live in urban areas.⁹

The population of Ulaanbaatar (UB), Mongolia's capital city, grew from 0.87 million in 1993 to 1.32 million in 2012, an increase of 40 per cent in less than 20 years (Fig. 1). With 46 per cent of Mongolians now living in UB, the city is under enormous pressure.¹⁰ Traffic, air pollution and inadequate infrastructure are chronic problems.

Recent increases in urban migration are partly due to poor weather conditions. Particularly cold winters that follow a period of drought can lead to a 'dzud', a natural disaster whereby thick snow and ice cover stop animals from reaching fodder, causing livestock to die of starvation, often in their millions. Mongolia

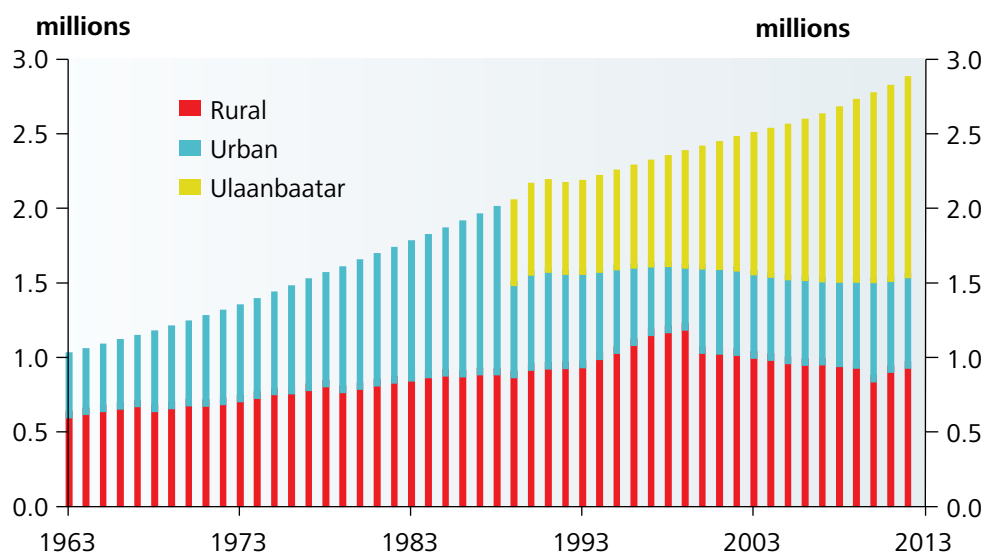
experienced three dzuds in a row in 1999-2000, 2000-2001 and 2001-2002, resulting in a loss of 11 million animals.¹¹ Another dzud occurred in 2009-10, forcing even more herders from their land. From 2009 to 2010 the urban population increased 7.8 per cent in just one year, from 1.77 million to 1.91.¹²

Besides weather related migration, many Mongolians had moved to urban areas hoping to take advantage of the growing economy. However many of these migrants cannot afford to live in apartments or houses, and remain in "semi-nomadic" conditions. It has been estimated that only 40 – 45 per cent of Ulaanbaatar residents live in apartments. The remainder, around 175,000 households, live in traditional "gers" (ger = yurt. The traditional housing in Mongolia) on the outskirts of Ulaanbaatar. These dwellings are not connected to utilities such as water and heating, and many residents use pit latrines.

3.5. A BOOMING ECONOMY

Mongolia has been one of the world's fastest growing economies in recent years. Mongolia's proximity to China, the biggest consumer of mineral resources, has caused rapid investment particularly in the mining sector. Real GDP grew by 17.4 per cent in 2011 and 12.6 per cent in 2012 (Fig. 2).¹³

Fig. 1: Population of Mongolia



Source: National Statistical Office. NB: Urban population prior to 1989 includes Ulaanbaatar.

Real GDP expanded by 11.8 per cent in 2013 and is projected to increase by around 8.5 per cent on average over the next five years.¹⁴

GDP per capita has grown six-fold in 10 years, from US\$524 in 2002 to US\$3,342 in 2012, while the World Bank now classifies Mongolia as a lower middle-income economy.¹⁵ According to the World Bank, the poverty rate dropped from 38.7 per cent in 2010 to 27.4 per cent in 2012.¹⁶ Furthermore the rise in household consumption has been one of the key drivers of economic growth, besides investment (Fig 2).

These increases in expenditure have been driven by rapid increases in incomes. In the year to March 2013, total wages rose by around 40 per cent. Increases have been particularly strong for men, rising by an average of 25.2 per cent over the past 5-years, compared to 19.9 per cent for females.¹⁷

The level of employment has also improved due to the mining boom, with 90,000 jobs created from 2009 to 2012. In the fall-out of the global financial crisis the unemployment rate reached a peak of 12.8 per cent in December 2009. Since then, it reached a low of 6.3 per cent in September 2012, before rising back to 7.3 per cent in June 2013 due to the recent

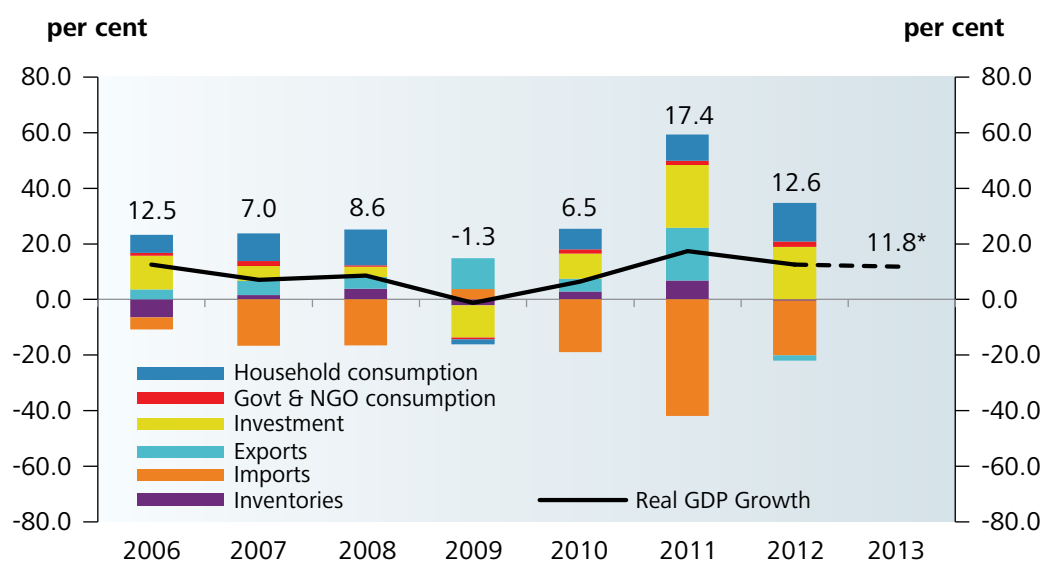
slowdown. However, the World Bank is concerned that the official data may not accurately reflect current labour market conditions, as recent lay-offs in the mining sector may only be absorbed by temporary construction activities and public maintenance work, or even informal sector self-owned businesses (e.g. kiosks and vendors).¹⁸

3.6. INCREASING RELIANCE ON MINING

The Mongolian economy has become overly dependent on mining. As of December 2013, mining and quarrying accounted for 18.5 per cent of real GDP, while industrial and agricultural sectors each accounted for around 14.4 per cent of GDP. Mineral and energy commodities accounted for 81.9 per cent of Mongolia's exports in 2013, almost all of which were exported to China (Fig. 3). Government revenues also depend on mining, with 40% of the government budget deriving from the sector.¹⁹

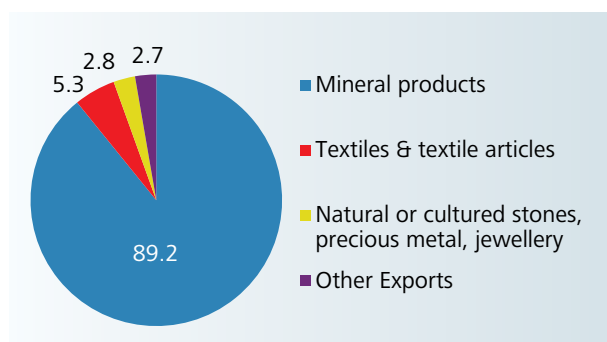
The largest mining projects are the Oyu Tolgoi copper and gold mine and the Tavan Tolgoi coal mine, both located in the South Gobi desert in Umnugobi aimag. The scale of these projects and their estimated impact on the Mongolian economy is staggering. With a

Fig. 2: Contributions to GDP growth,



Source: National Statistical Office. *IMF Forecast, World Economic Outlook October 2013.

Fig. 3: Share of total exports, 2012



Source: National Statistical Office, 1212 Database.

construction cost of US\$6.6 billion since 2009, modeling suggests that Oyu Tolgoi is expected to increase Mongolia's GDP by 36.4 per cent by 2020 while GDP per capita is projected to be 34 per cent higher.²⁰

Another prominent mining-based activity is "Erdenet" mining cooperation, which has been the single biggest contributor to the Mongolian economy for many years.

In addition, as of September 2013, there were 3,285 mining licenses held by 1,753 companies, covering 17.5 million hectares. Of this, 908,900 hectares, 11.2 per cent of land mass, is being actively explored

or mined, while 16.6 million hectares, or 10.6 per cent, is held under license for future exploration.²¹

On top of these large scale projects, there are a number of artisanal and small scale mining (ASSM) operations scattered throughout the country. The majority of ASSM operations (80–90 per cent) mine gold, while the rest exploit fluorspar and coal. They often occupy the sites of abandoned large-scale mining operations.

At its peak in 2003, an estimated 100,000 people were employed as artisanal miners sometimes referred to as 'ninja miners', representing 20 per cent of the rural workforce. Many of these operations began following the dzuds of 1999 – 2002, when ASSM became an alternative employment option for herders who had lost their livelihoods. As of 2008, the number of people employed in the sector has fallen to 54,000 due to closure of ASSM mills by the Government and prohibition of milling operations using mercury.²² It is unclear how many ASSM's are currently in operation.

3.7. ECONOMIC CHALLENGES

Excessive dependence on mining and the size of the large-scale projects exposes Mongolia to volatile boom-and-bust economic cycles, driven largely by



global commodity price fluctuations. This has created serious macroeconomic imbalances for the country.

Downturn in foreign direct investment and widened trade deficit resulted in depreciation of the national currency tugrik (MNT) and high inflation.

Recent moderation in the Chinese economy has created difficulties for the Mongolian economy. Export revenue has fallen 6 per cent in the year to August 2013, with coal exports falling sharply (down 44 per cent in the year to August). Foreign investment has plummeted, dropping 43 per cent in the first half of 2013, while the tugrik has depreciated 27 per cent against the US dollar in the past two years.²³

Rapid economic expansion has also fuelled inflation. Increases in the consumer price index reached 15 per cent in 2012, and around 11 per cent in 2013.²⁴ These price rises are exacerbating problems of income inequality and poverty, as incomes for Mongolia's poorest have not kept up with inflation.

The GoM's budget is also highly susceptible to the volatility in commodity prices. Government expenditure reached a huge 44.2 per cent of GDP in 2011 as spending on wages and cash transfers surged. The new Government elected in 2012 has pledged to reduce spending and indicated its commitment to the 2 per cent of GDP structural deficit ceiling outlined in the Fiscal Stability Law. However, since June 2013 the budget has fallen back into deficit, and spending is projected to reach 47 per cent of GDP in 2013. This is particularly concerning given the large levels of borrowing, including the US\$1.5 billion in 'Chinggis bonds', to invest in infrastructure projects is not included in official Government budget estimates.²⁵

The booming extractive sector is also creating a brain-drain. Mining companies and businesses catering to the mining sector are attracting and retaining Mongolia's most skilled workers by offering significantly higher salaries. The EPCRC's 2012 'Executive Opinion Survey' found that employees with good information technology and finance skills are not readily available, and that finding and hiring qualified engineers and senior managers is difficult.²⁶

In addition, a divide is emerging between three parts of Mongolia: the urban centers of Ulaanbaatar and smaller cities such as Erdenet and Darkhan,

the resource rich areas particularly around the Oyu Tolgoi and Tavan Tolgoi mines in the southern gobi region, and the still largely undeveloped countryside. The GINI coefficient, the extent of income deviation from an equal distribution, has increased from 33.2 in the 1990s to 37 in 2008.²⁷ Furthermore, poverty remains higher in rural areas with 36 per cent of people below poverty line compared 23 per cent in urban areas.²⁸

While many Mongolians working in mining and business services are becoming increasingly wealthy, others are missing out. Despite mining's contribution to GDP, the sector employs only 47,000 people, or 4 per cent of the workforce (Fig. 4). In fact, it is artisanal mining that may create more jobs than large-scale mining in rural areas and may hold greater potential for reducing poverty.

Meanwhile, 35 per cent of all employees or 370,000 people remain employed in the low-productivity, low-income agriculture sector.²⁹ The dependence on herding is partly due to sharp increase in the number of herders and livestock following the decline of state enterprises in the 1990s.

There is also significant gender inequality within the labour market. According to the World Bank, gender disparities are prominent within the type of work women do - mostly unpaid in informal self-employed roles such as cleaning and small shop vendors - and in the wages they receive. Women also have a limited presence in higher level managerial positions. This is despite a pro-female gender gap in enrolment rates for secondary and tertiary education.³⁰

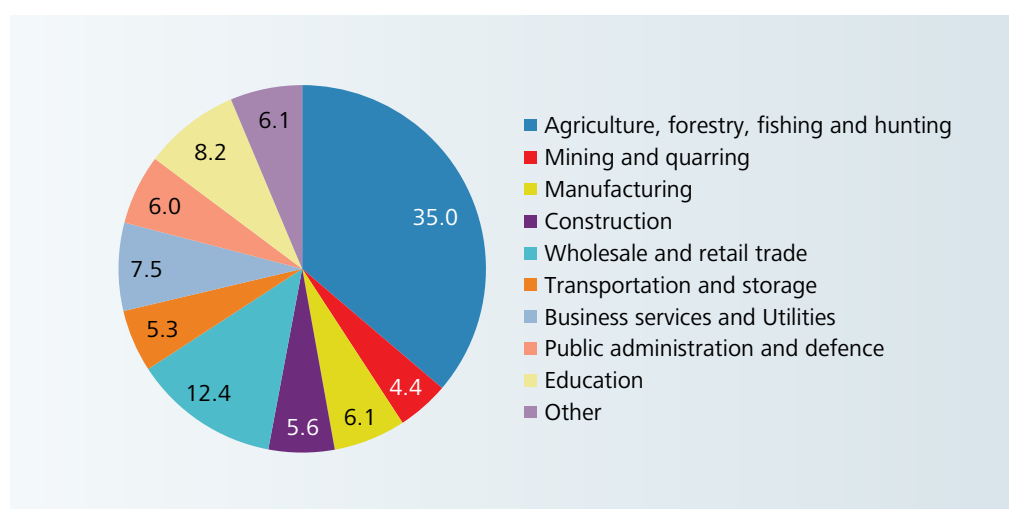
Despite increased inequality, measures of human development are improving. Between 1985 and 2012 Mongolia's human development index (HDI), a composite measure of life expectancy, education, and income, increased from 0.536 to 0.675 (up 26 per cent). However, this HDI score is below the regional average of 0.683 and ranks Mongolia 108 out of 187 countries.³¹

There have been many notable improvements in health care in the post-transition period. Infant mortality per 1000 births has fallen from 65.4 in 1990 to 15.5 in 2012. Between 1980 and 2012, Mongolia's life expectancy at birth increased by 11.2 years, from 57.3 years to 68.5 (Fig. 5).³²

Since 1990 national immunization programmes have pushed infectious disease from the five leading causes of death. Instead, lifestyle and behaviour diseases such as circulatory disease, cancer and injuries are now the leading causes of morbidity and mortality.³³

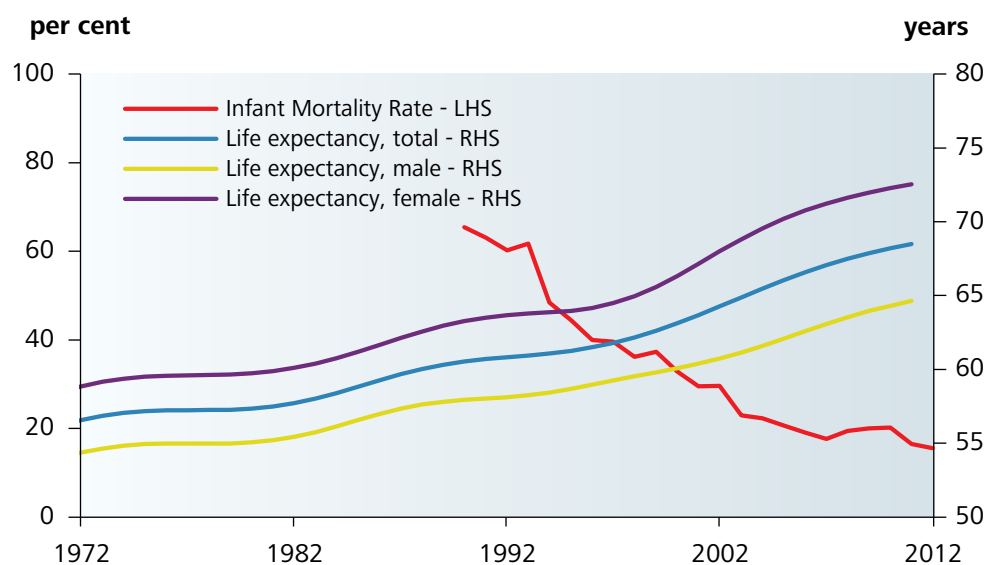
Mongolia is currently experiencing a 'sweet spot' in its demographics, whereby the number of working age people far exceeds those in, or nearing retirement. In 2012, 69 per cent of Mongolian's were aged 15 to 64, and 47 per cent were under 25 (see Fig. 6).

Fig. 4: Share of Employment by Industry, 2012



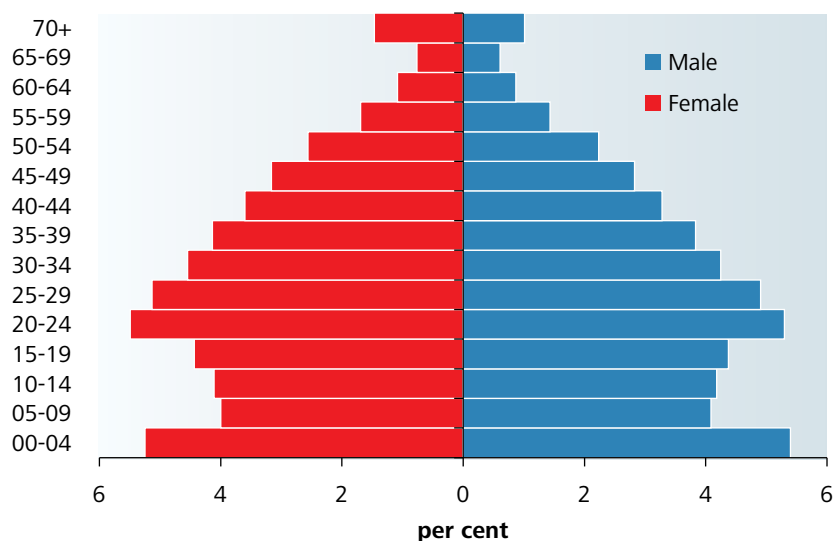
Source: National Statistical Office, 1212 Database.

Fig. 5: Infant Mortality and Life Expectancy



Source: National Statistical Office, 1212 Database.

Fig. 6: Population pyramid for Mongolia 2012



Source: National Statistical Office, 1212 Database.

This youthful workforce will support economic development in years to come. However there is concern these demographics are being under-utilised because of high unemployment.

Education results have also been improving. From 1980 to 2012, average schooling years rose by 2.6 years. Adult literacy rate in 2010 was 97.4 per cent compared to world average 84.1 per cent.³⁴

One of Mongolia's biggest challenges is its lack of infrastructure, particularly in the key areas of energy, transport and waste management.

Energy: Mongolia currently has an installed energy capacity of 922 MW. The vast majority of this capacity, 91.6 per cent, is coal based produced by Mongolia's thermal coal combined heat and power plants (CHP), while 3.1 per cent is produced by hydroelectric generators, 5.1 per cent from diesel stations, and 0.1 per cent from renewable resources (solar and wind).³⁵ There are four CHP's in Ulaanbaatar alone.

Mongolia's current energy generation is failing to meet demand. New buildings in Ulaanbaatar often connect to the grid without approval and there is concern increased demand will create wide-spread black-outs. To meet this gap Mongolia imports 7.6 per cent of its energy usage, and it aims to become self-sufficient in 2014.³⁶ Energy efficiency is

also low and the energy grid is ailing, with energy required for industrial output seven times higher than world average.³⁷

In the coming years, Mongolia will need to rapidly increase its energy production to meet growing demand. The Ministry of Energy estimates that by 2030 Mongolia's energy demand will be 3,800 MW, a third of this demand coming from the mining sector.³⁸ Although the renewable energy sector is growing, highlighted by the opening of the Salkhit wind farm in June 2013, most of the future demand will be met with coal plants, with 15 new coal power stations expected within five to 10 years. There are plans to expand two existing coal power stations, TPP 3 and 4, as well as plans to build a new TPP 5 in Ulaanbaatar, Amgalan Power Plant, and a power plant at Tavan Tolgoi mine.³⁹

Transport: Due to its large geographic area and low population density, Mongolia's transport system is basic, constraining economic activity. Road, railways and air transport services are limited to major towns and regional centers. About 92 per cent of roads are dirt tracks, while paved and gravel roads combined account for only eight per cent.⁴⁰ While road and rail density is high compared to other Asian countries, spatial coverage is low. This demonstrates the challenge of a small, dispersed population, yet a vast area.

Water and waste infrastructure: Water and sewerage infrastructure density in Mongolia is one of the lowest in Asia, causing widespread contamination of soil and water. In 2011, 53 per cent of people had access to an improved sanitation facility, a modest increase from 49 per cent in 2000. There is a vast gap between access to sanitation facilities in urban and rural areas - in 2011 only 29 per cent of people in rural areas have access to a sanitation facility, while 64 per cent have access in urban areas. The use of pit toilets is a particular problem in the ger districts, where run-off is known to contaminate the water supply.⁴¹

Access to improved drinking-water facilities has increased considerably in recent years, from 65 per cent in 2000 to 85 per cent in 2011. However there is a rural vs. urban divide with almost all urban people having access to an improved water source but only 53 per cent with access in rural areas. However, only 26 per cent of urban dwellers have access to water piped on premises.⁴²

Solid waste management is also limited, although it is difficult to estimate how much waste is not being

collected. According to a WHO survey, in Ulaanbaatar 75 per cent of total waste is collected by city trucks, 15 per cent is transported by Organizations with their own vehicles, while five to 10 per cent is left uncollected. This leaves garbage polluting the city's streets and waterways.⁴³

3.8. KEY ENVIRONMENTAL PROBLEMS

(1) Air pollution is one of the world's worst

Mongolia has one of the planet's highest levels of urban air pollution. According to WHO's database, PM10 levels (particulate matter smaller than 10 micrometers in diameter) in Ulaanbaatar in 2008 were the third worst in the world with an average level of 279, far greater than the global average of 71. For PM2.5, Ulaanbaatar had the highest concentration of any city in the world, with an annual average of 63.0 compared to the global average of 11.⁴⁴





Air pollution levels differ between central city areas and ger areas. Pollution in the ger districts can be 35 times higher than Mongolian Air Quality Standards (AQSS) (see Table 2).

Table 2. Ranges for yearly average PM concentrations in UB, June 08–May 09

Area	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	Exceedance: Ratio to AQSS	
			Mongolian	WHO
CENTRAL CITY AREAS	150-250	75-150	3-6	7-15
GER AREAS	350-700	200-350	7-14	17-35

Source: Replicated from World Bank (2011), p. 14

Sources of air pollution include dust from the desert, unpaved roads, open soil surfaces, power plants, vehicles, but particularly ger stoves and boilers. Pollution is much worse in winter due to the emissions from ger coal stoves used for heating. A 2011 study by the World Bank found that to achieve Mongolia's AQSS, particulate emissions from ger areas (dust and boiler emissions) would need to be reduced by 94 per cent.⁴⁵

High levels of particulates pose serious health risks. According the Public Health Institute of Ulaanbaatar, the number of people affected by respiratory disease

increased 45 per cent between 2004 and 2008. A 2011 study by Simon Fraser University in Canada reported that one in ten deaths in Ulaanbaatar can be attributed to air pollution.⁴⁶ Furthermore, WHO estimates that between 9 per cent (direct) and 15 per cent (indirect) of deaths in Ulaanbaatar can be conservatively linked to air pollution. The cost of this is estimated by the World Bank at US\$500 million or 20 per cent of Ulaanbaatar's yearly GDP.⁴⁷

(2) Climate change is an increasing threat

From 1940 to 2008, the average temperature in Mongolia increased by 2.14°C, three times the global average of 0.74°C.⁴⁸ As in many developing countries carbon emissions have increased rapidly, up from 3.1 metric tons per capita in 2000 to 4.2 metric tons per capita in 2010, an increase of 35 per cent in a decade. Despite the rise, Mongolia emitted just 0.03 per cent of global CO₂ emissions in 2010, making it the 80th largest per-capita emitter of CO₂.⁴⁹

It is thought climate change is contributing to desertification, drying rivers, melting glaciers and thawing permafrost. This in turn affecting agricultural

and herding. Climate change may also be contributing to increased variability in seasonal weather patterns and extreme weather events such as dzuds

(3) Mining operations are damaging the landscape with limited rehabilitation

Mining has caused environmental harm to the Mongolian countryside. This is partly due to environmental standards and capacity to enforce environmental laws and regulations. While exploration and mining activities by larger-scale operations can be highly damaging, ASSM mining is also environmentally damaging as a result of the uncontrolled use of chemicals, such as mercury and cyanide for mineral processing.

A recent Government inspection reported in local media found that of 22,752 hectares of mined land, 4,256 hectares has been damaged by mining activities and abandoned with no rehabilitation. Only 9,100 hectares had any remediation work undertaken to restore the land to its previous land use. Of this land, 4,175 hectares had bioremediation done, where biological agents such as bacteria or vegetation, are used to remove and neutralise contaminants.⁵⁰

In some cases, herders living in mining areas face challenges from severe dust, water pollution and pasture damage. For example, some herders in the South Gobi have been forced to resettle to inferior pastures because of the Oyu Tolgoi mine. Many of these herders have received compensation, although some consider the amount provided inadequate.⁵¹

With only 25 per cent of Mongolia geologically surveyed, and already many huge deposits identified and in various stages of production, the continued

expansion of mining is likely to have a negative impact on the country's environment.⁵²

(4) Mongolia's pastures are vulnerable to land degradation and desertification

The Mongolian steppe is one of the world's largest remaining grassland ecosystems. However, in recent years it has degraded rapidly. Recent research using satellite imagery found that from 1988 to 2008 almost the entire Mongolian steppe experienced significant biomass declines. The Ministry of Environment and Green Development (MEGD) recently published a desertification atlas showing that 77.8 per cent of land has been affected by desertification to some degree, while 10 per cent of land is considered highly vulnerable to degradation, an increase of 2-3 per cent since 2006.⁵³ The steppe and central Mongolia are most affected by desertification, and in need of urgent rehabilitation.

There is debate whether the degradation is the result of climate change, over-grazing, or both. Research by Hilker *et al.* (2008) found that despite regional differences in the causes of degradation, about 80 per cent of vegetation decline can be attributed to increases in livestock, especially around major settlements.⁵⁴ Although changes in precipitation explained 30 per cent of degradation and up to 50 per cent in areas with denser vegetation cover, temperature changes were found to play only a minor role.

However, more recent research by Liu *et al.* (2013) found that only about 40 per cent of land degradation can be attributed to human factors, such as increased numbers of livestock coupled with grassland burning. The remaining 60 per cent can be attributed to climate, in particular decreasing precipitation and rising temperatures.

Regardless of the cause, the problem is likely to grow worse. Liu *et al.* (2013) predict that average air temperatures will increase and precipitation will diminish in Mongolia over the next three decades. Therefore, given that climate change is difficult for Mongolia to control, they argue for the "urgent need to develop and implement effective strategies for sustainable grazing practices, and reduce the incidence and severity of burning in order to improve the resilience of the Mongolian steppes."⁵⁵



(5) Deforestation is rampant and speeding up

Although much of Mongolia is grassland, forest covers a significant portion of the country. As of 2012, forest area accounts for 11.9 per cent, or 18.6 million hectares. Total forested area was 12.5 million hectares or 8.0 per cent of land area, consisting of more than 140 species of trees and bushes.

Deforestation for fuel and housing has created a dramatic loss of forested areas. According to the World Bank, forest area declined from 2000 to 2011 at 0.7 per cent annually, much faster than the global rate of 0.1 per cent per year.⁵⁶ Furthermore deforestation has sped up from around 40,000 ha per year in the 1990s to 80,000 ha today.

Forest mismanagement is a key cause of the problem. Forest resources are over-used and timber-harvesting practices are wasteful and inefficient - the timber industry uses only 60 per cent of harvested timber profitably.⁵⁷ Estimated harvesting levels are on average four times the sustainable level, while 36 - 80 per cent of harvesting is illegal. However, the industry is unable to attract finance to modernise.⁵⁸

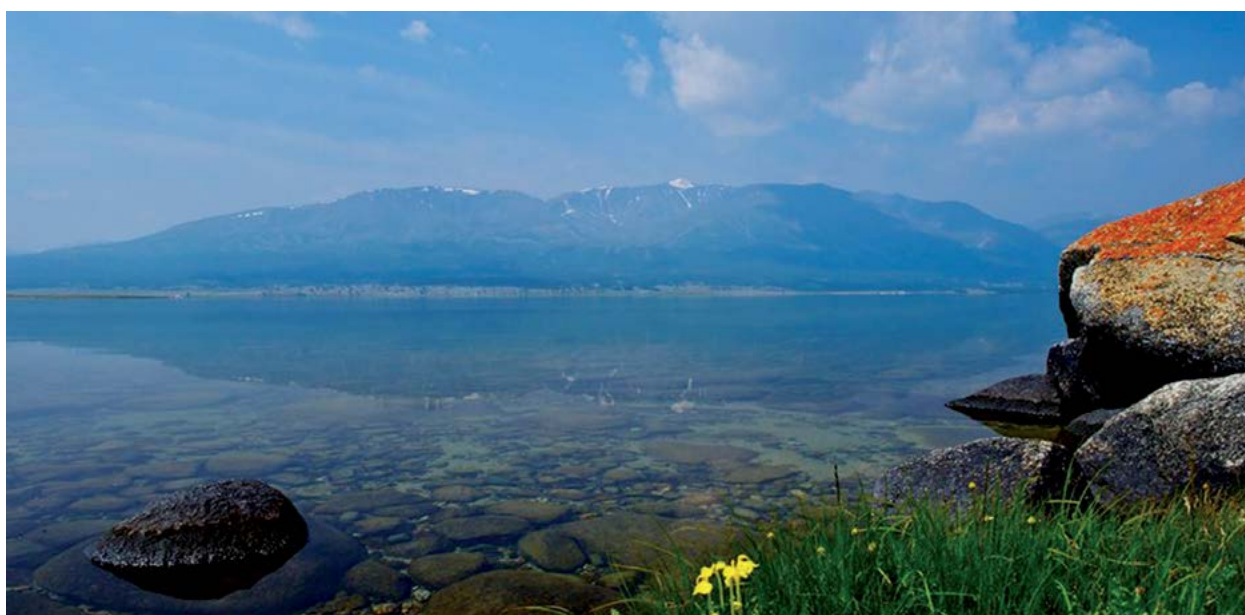
According to the World Bank, the forestry sector is rapidly approaching a crisis for which stakeholders seem largely unprepared. If alternative sustainable sources of fuel are not found, serious fuel-wood shortages will emerge.

(6) Water sources are increasingly vulnerable

Mongolia in general has limited water resources with high geographic variation in rainfall and a major dependency on groundwater. Although northern Mongolia has large networks of lakes and rivers, water resources are limited across the southern regions and more densely populated central regions. Available water resources are becoming increasingly vulnerable as a result of overuse and pollution, as well as growing pressures from seasonal variation and climate change.

Ulaanbaatar takes 98 per cent of its water from groundwater. Some estimates suggest that current sources may not be sufficient to meet projected demand of the municipality as soon as 2015.⁵⁹ Furthermore, there are concerns over soil pollution and groundwater partly due to extensive use of pit latrines in ger districts.

Water resources in the Southern Gobi region, a vast arid area and the location of significant mineral deposits, are also at risk. Mining operations require large quantities of water and trigger increases in development which is likely to contribute to increased demand. Preliminary estimates show demand in the region may increase from 82,000 m³ per day in 2009 to 400,000 - 450,000 m³ per day by 2020, of which 300,000 m³ is attributed to mining.⁶⁰



4. TACKLING THE CHALLENGES: GOVERNMENT POLICIES AND PROJECTS FOR GREEN DEVELOPMENT

As outlined in Chapter 1, Mongolia faces a number of economic, social and environmental challenges. To resolve these challenges and build a sustainable future, the Government of Mongolia (GoM) has initiated a range of policies to develop a green economy.

To create a stocktaking of policies that contribute toward a green economy it is useful to consider the UNEP's definition of green economy. A green economy is one that "results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities."⁶¹

4.1. HIGH-LEVEL STRATEGIES DRIVING THE GREEN ECONOMY

There are two documents which determine the overall high-level strategy for the Government of Mongolia: the Comprehensive National Development Strategy of Mongolia, which is based on the Millennium Development Goals (MDGs), and the Mongolian Government four-year plan. It is worth considering these strategies as background the Green Development Strategy.

4.1.1. Comprehensive National Development Strategy of Mongolia, 2008 – 2021 (2008)⁶²

In 2008, the Mongolian Government adopted the Comprehensive National Development Strategy (CNDS) for 2008-2021. It was the first long-term policy document and defines the Government's policy for the next fourteen years. The MDGs, which were already adopted by a parliamentary resolution in 2005, are strongly embedded in this high-level document. This contains eight priority directions, 124 Strategic Goals and 523 Activities to be implemented.

The CNDS defines the vision for Mongolia's national development by the year 2021:

Mongolia is a country with vast lands, abundant natural resources, admirable history, and glorious future. We, Mongols, shall respect our history and culture, have our national dignity, be highly educated and confident in ourselves so as to realize our desires and aspirations, live comfortable, prosperous and contented lives in our homeland.

The CNDS is based on the following principles:

- Create conditions for every citizen to participate, contribute and lead the country's development;
- Build capacity and structure for the implementation of development policies and strategies;
- Ensure dynamic and sustainable development based on the principles of a market economy;
- Allocate funds in accordance with policy priorities and needs, ensure transparency, monitor their spending, evaluate outcomes and make plans for future;
- Promote partnerships of all stakeholders;
- Develop the capacity to adapt to changing conditions; and
- Promote accountability at all levels, ensure transparency and respect the law.

The values embraced in the CNDS are:

- Comply with the Constitution of Mongolia;
- Live and work in justice, keep the society in harmony and peace;
- Promote individual and social progress with 'own hands' in cooperation with others; and
- Encourage patriotism that is based on the principle of protecting and strengthening independence and sovereignty through promoting the country's development.

To achieve this vision, there are two stages to the strategy:

- 2007 to 2015: Achieve the MDGs and intensive economic development;
- 2016 to 2021: transition to a knowledge based economy.

The six priority directions of the CNDS are:

1. Achieve the MDGs and provide for all-round development of the Mongolian people;
2. Intensively develop export-oriented, private sector-led, high technology-driven manufacturing and services, with particular focus on information, communication development, promoting bio and nanotechnology, transit transportation, logistics, financial mediation services, deeper processing of agricultural products, and create a sustainable, knowledge-based economy;
3. Exploit mineral deposits of strategic importance, generate and accumulate savings, ensure intensive and high economic growth, and develop modern processing industry;
4. Ensure intensive development of the country's regions, their infrastructure and reduce urban-rural development disparities;
5. Create a sustainable environment for development by promoting capacities and measures on adaptation to climate change, halting imbalances in the country's ecosystems and protecting them;
6. Consolidate further political democracy, foster a transparent, accountable, just system free from corruption and red tape.

A 2011 evaluation of the CNDS found an insufficient understanding of the strategy as a fundamental document for the long-term development of Mongolia. Further, it was found the overall policy planning and reporting system is inadequate, while MDG- based strategic goals, arrangements and achievements are rare. Rather, the review concluded various goals and activities are based on promises and political content rather than tangible objectives. Although some good progress on policy reform was found, they generally found that "policy implementations on poverty alleviation and unemployment; science, technology, natural environment, regions developments is slow."⁶³

Another review of the strategy by Marshall, Nixon and Walters (2008) concluded that the CNDS signals that economic growth based on the disengagement of the State continues to be viewed as the primary means for securing Mongolia's development. The trickledown poverty reduction model at the heart of this strategy is based on mining based revenue and high mineral prices. This suggests the CNDS alone will not be sufficient to achieve a green development path for Mongolia.

4.1.2. Mongolian Government Plan 2012-16 (2012)⁶⁴

In 2012, the new 'Government for change', composed of members from the Mongolian National Democratic Party (DP), Mongolian People's Revolutionary Party (MPRP) and the Civil Will and Green Party, developed a four-year action plan. This plan has five objectives:

1. A Mongolian with a job and income: The Government aims to implement budgetary, financial and monetary policy to create an economy that sustainably meets the public's needs, is self-sufficient and able to compete on the world market. The Government seeks to provide jobs with sufficient wages and provide welfare only to needy children, the elderly and disabled persons. It also seeks to increase and improve public private partnerships and establish a business-enabling environment.

2. A healthy and strong Mongolian: The Government aims to provide opportunity for citizens to receive medical diagnostics, treatment and services of the highest quality based on fair competition and selectivity.

3. An educated and knowledgeable Mongolian: The Government aims to educate and prepare Mongolians by providing them with an opportunity for a domestic education characterised by the unique features of Mongolia, in line with international standards and the best chances of versatility, to find employment that suits their acquired knowledge and personal skills. Efforts also will be made to develop appropriately Mongolian culture, tradition, heritage, sports and physical training in order to enable the country to proudly stand up to the world arena.

4. A Mongolian in a safe environment: The Government aims to offer an ecologically-balanced safe environment for the population to live and work comfortably by integrating the economic and development policy with a green development policy by living in harmony with nature, sustainably using natural resources, rehabilitating them and protecting the environment.

Importantly for the Green Development Strategy, one activity under this objective is to "make the green development policy as one of the fundamental development policies of the country".

5. A free Mongolian: The Government aims to make state activities open and transparent to the public. Accountability and control will be fundamental principles of state affairs, remove excessive bureaucracy and corruption, fundamentally change the civil service by reorganizing them as a public services, ensuring that the law enables citizens to live an equal and better life in their motherland as well as in their respective aimags and towns.

Yearly implementation plans operate under the four-year action plan, allocating tasks to ministries, setting budgets and key performance indicators. The GoM then measures its performance against these documents. The GoM is currently in the process of drafting guidelines to implement the four-year plan.

4.1.3. National Green Development Strategy

The Green Development Strategy (GDS) prepared by the Ministry of Environment and Green Development responds to the 2012 Rio+20 conference. It is aimed at ensuring that green development becomes one of Mongolia's fundamental development policies, as prescribed under the fourth action programme in the 2012-2016 Government Plan.

Initially, two high-level documents have been written to establish formally the GDS: the Green Development Concept⁶⁵ and the Mid-Term Programme on Green Development.⁶⁶ The concept paper determines goals and purposes for green development until 2030, while the mid-term programme designs policy and strategies to ensure that these goals and purposes are implemented.⁶⁷

The Green development Strategy was approved by the Mongolian Parliament, the Great State Khural, in July 2014.

4.2. SOCIAL AND ECONOMIC DEVELOPMENT POLICIES

In May 2011, the Government of Mongolia established the Development Bank of Mongolia (DBM) in order to support economic development, which would lead to the creation of more jobs. The DBM is responsible for raising capital to finance large projects that will

build infrastructure and develop industries to produce value-added export goods. In March 2012, the DBM issued US\$580 million of bonds to begin funding a range of infrastructure projects. These projects include construction of rail, roads and housing (see Box 1).⁶⁸

One important project for economic development and diversification is the Sainshand Industrial Complex. Once complete, the complex will host advanced processing and manufacturing technology that will increase the production of value-added products and help diversify the economy. There are plans to host a copper refinery factory, as well as construction material and coal-chemistry factories at Sainshand.

To further develop infrastructure, the Government directly issued US\$1.5 billion in bonds on 28 November 2012. Known as the 'Chinggis Bonds', the intention of this borrowing was to finance a range of large-scale infrastructure projects to support Mongolia's development. As of April 2013, US\$1.253 billion had been allocated to a range of projects, with remaining US\$347m unallocated (see Box 1).⁶⁹ Many of these projects are road and railways, but other projects will support the manufacturing base, particularly in the agricultural and textile industries.

The GoM is also supporting economic development through the Small and Medium Enterprise (SME) Development Programme. Given SMEs comprise two-thirds of business entities in Mongolia and around 20 per cent of GDP, and 738,800 people are employed in these businesses (around 70 per cent of the labour market) with ; supporting smaller business will be crucial for economic development.⁷⁰ The programme is intended to raise the employment rate, improve the quality and safety of workplaces, and spur the creation of export-oriented and import-replacing national products. The GoM has developed the draft "Development Programme for Small and Medium Enterprises" (2014-2016) within the Law on Small and Medium Enterprises. It is now looking for cooperation and donor partners to finalise the Development Programme.

The Ministry of Economic Development (MED) is currently establishing arrangements for concessions on innovation projects. The passage of the Law on Innovation (2010) opened up opportunities to implement projects through public-private partnerships, such as those in the energy sector.⁷¹ The MED is currently evaluating

BOX 1 Economic Development Projects Funded by the Development Bank of Mongolia (DBM) and the Chinggis Bonds

Key projects that the DBM is undertaking using its \$580 million in borrowing are:

- A nationwide railway network of 5600 km to be built between 2012 and 2015. The railway will be implemented in 3 phases;
- Sainshand Industrial Complex Project to be located between Oyu Tolgoi, Tavan Tolgoi and the oil fields located in eastern provinces. It will be positioned on an operating railway and on the cross-country highway networks, and could be a critical hub for developing green industries;
- Expanding the housing supply, by constructing 21,600 household apartments by 2012 and 53,400 household apartments by 2016 in Ulaanbaatar city;
- Building 112 km of new roads, repairing 150 km road and constructing leveled cross roads at 3 locations in 2012. By year 2016, the DBM aims to build another 100 km of new roads, repair 200 km of roads and construct leveled cross roads at 4 locations; and
- Constructing a new 990 km Altanbulag-to Ulaanbaatar-Zamiin-uud highway.

The following projects have been announced from the US\$1.5 billion in Chinggis bonds:

- US\$200 million to fund a 1,800 km railroad project based in the Tavan Tolgoi mine region;
- US\$200 million for the Ulaanbaatar "Street project", including the construction of intersections and highways;
- US\$50 million towards the first stage construction of the Tavan Tolgoi power plant with capacity of 300 MW ;
- MNT 570 billion of investments into other road projects;
- US\$68.8 million to renew the cashmere industry;
- MNT 200 billion for re-planning of ger districts and construction of new apartment communities in Ulaanbaatar;
- US\$27.7 million to support milk and dairy products manufacturing projects;
- US\$17.7 million to construct greenhouse farms in Ulaanbaatar and 21 Aimags centers;
- US\$45 million invested to produce woolen goods;
- US\$13.5 million to support the textiles industry; and
- US\$14 million to build a house-construction plant.

a list of projects and determining the mechanism to deliver these concessions. The MED is also working on a list of by-laws to improve implementation of the law and regulations on establishment of start-up companies. Green technology and the green economy is one of their priorities and the MED is working closely with MEGD.

However, it is difficult to assess how much funding and investment will be provided by the Government towards these concessions.

4.3. CITY PLANNING AND TRANSPORT

With Ulaanbaatar home to half of Mongolia's population and 60 per cent of GDP, sustainable development of the capital will be central to developing Mongolia's green economy.

An important initiative is the Memorandum of Understanding signed by Minister Oyun.S, and the Mayor and Governor of Ulaanbaatar City, Mr. Bat-

Uul.E in January 2013 to develop the Green Economy in Ulaanbaatar. The MOU agrees to implement an Action Plan from 2013-2016 to secure a healthy environment for the citizens of Ulaanbaatar and consider the importance of the environment in urban planning and construction.

The Action Plan proposes to establish satellite towns around Ulaanbaatar to reduce population density, develop apartment buildings and infrastructure such as central heating, water and electricity supplies in the ger districts, and to improve energy efficiency. It agrees to build an industrial park, which will be located outside Ulaanbaatar so as to decrease the pollution caused by leather, cashmere and other factories. The MoU also agrees to cooperate on restricting mining and managing the Tuul and Selbe, ensuring proper waste management and agreeing that recycling plants are greatly needed.⁷²

There are several initiatives to improve public transport and develop 'Green Transport' in Mongolia. This is driven by the CNDP which stipulates that the ecologically clean public transport shall be introduced in order to decrease pollution in Ulaanbaatar.

The GoM has announced plans to build a subway system in Ulaanbaatar, scheduled to be complete by 2020. The system is planned to be 17.7 km long and estimated to cost US\$1.5 billion. The Japanese International Cooperation Agency (JICA) will support 49 per cent of the required investment with the remaining funding provided by the state and city government budget. The design will be completed within 1.6 years and construction will start in spring of 2016, to be completed by 2020.

The World Bank has been critical of the program on a number of fronts. Firstly, the program is treated as an off-budget measure and is not included in the Government's fiscal plan.

4.4. ENCOURAGING HOME OWNERSHIP

The GoM has begun intervening in the mortgage market to encourage middle class home ownership. Starting from 17 June 2013, the Bank of Mongolia has begun subsidising mortgage repayments to 8± per cent interest p.a compared to a regular rate of around 15 per

cent. The new mortgages require a down payment of 10 - 30 per cent and must be paid back in 20 years. The loans are valid for apartments smaller than 80 square meters (861 square feet). Applicants must have a full-time job, and monthly payments cannot exceed 45 per cent of family income.⁷³ As of November 2013, the highly subscribed programme has issued MNT470.1 billion to refinance 16,712 mortgages and MNT640.3 billion for 11,058 new mortgages.⁷⁴

The programme was hoped to help bridle inflation in the housing rental market as well as absorb the increasing number of vacant units outside the Ulaanbaatar city center. If those living in the ger districts use the programme to purchase apartments, it will also help to move people in from the ger districts contributing to the reduction of air and soil pollution. However, there has been criticism of this policy given that it was not means tested. Many wealthy Mongolians are taking advantage of this by refinancing their mortgages. As a result, the programme could actually increase demand and further fuel rising house prices.

4.5. TACKLING INFLATION

In support of its economic development policies, the Government has undertaken considerable attempts to control inflation. The Bank of Mongolia conducts this through its regular monetary policy, but also through the Price Stabilisation Programme (PSP).

The PSP began in October 2012, when the Government of Mongolia and the Bank of Mongolia signed a Memorandum of Understanding on "Joint Implementation of medium-term programme to Stabilise Prices of Key Commodities and Products". Over its three-year horizon, the PSP is expected to cost MNT720 billion and consists of four sub-programmes:

1. Price stability of staple food;
2. Fuel retail price stability;
3. Reducing the cost of imported consumption goods;
4. Promoting the construction sector and achieving stability of housing prices.

The programme is aimed at addressing structural bottlenecks by addressing supply shortages in select goods that have been viewed as drivers of seasonal price volatility. It provides discounted loans to select industries in return for their promises to keep prices

stable. As of September 2013, MNT642 billion of credit had been released to a range of businesses in the oil, meat, flour and construction industries.

4.6. EMPLOYMENT PROGRAMMES

To create a skilled workforce and encourage employment, the GoM has established several employment and training programmes under the Employment Promotion Law. The law was first passed in 2001 but updated in 2011. The Ministry of Labour is implementing the updates by amending the Government's employment programmes. There are currently eight employment programmes funded by the employment promotion fund. These are:⁷⁵

1. **The employment training program**, which includes an on-the-job training programme, whereby participants are trained on occupations in construction, road-building and mining, and the short-term training for job-seekers and unemployed people.
2. **Employment preparation program**, which involved students' employment promotion centers established at the three main universities and sub-schools.
3. **Employers support program**.
4. **The Herder's employment promotion program**, aimed at enhancing skills and generating sustainable household income, and protecting herders from risks. In 2010, 1,276 herders participated in 17 types of trainings and developed "Family development plan". As a result of trainings and activities 244 herders' families succeeded to protect their income sources from winter disaster in 2010.
5. **Self-employment program**.
6. **Elderly people and over 40s for employment**
7. **Employment for people with disabilities** involving 152 specifically-designated small business projects. This programme has created 483 new job places.
8. **Public works program**.

The GoM is attempting to improve safety standards in the rapidly-growing construction sector. In 2013, the Minister of Construction and Urban Development, the Minister of Labour and the Minister of Population Development and Social Welfare jointly issued orders

No. 52.a 50.a 26 to introduce a "Blue card" in the construction sector. Qualifying for the Blue Card would require a training programme on safety and sanitation standards in line with the Fourth Programme on labour, safety and sanitation.

4.7. WELFARE POLICIES

One of the most generous examples of social policy in Mongolia was the Human Development Fund (HDF). The Mongolian Government set up the HDF in November 2009 following negotiations with Rio Tinto over the completion of the Oyu Tolgoi (OT) mine. The initial contribution to the fund came from a prepayment of OT royalties, but was also funded with royalties from the Tavan Tolgoi mine.

The intention of the fund was to counteract rising inequality and distribute the benefits of the mining boom more widely through payment of tuition fees and other social benefits. However, the HDF was generally used to provide citizens with cash hand-outs. In February 2010, every Mongolian citizen received a cash handout of MNT 70,000, followed by smaller installments totaling another MNT50,000 a year. In 2011, monthly cash handouts were MNT21,000, with approximately a quarter of this disbursed as tuition fee support.

This generous system of cash-handouts ended in January 2012 when the Social Welfare Law was passed. This law, which came into effect on 1 July 2012, replaced the cash handouts by introducing a means-tested poverty benefit. It represented a major step towards establishing a fiscally sustainable social protection system while supporting Mongolia's poor.

Under the law, payments of around MNT40,000 per month reach about 130,000 of the poorest households, or one-fifth of all households. They are provided on the condition that unemployed working-age people register every quarter, enroll in trainings and attend public works.⁷⁶

4.8. GENDER EQUITY

In 2011, Mongolia passed a Law on Promoting Gender Equality. This is an important first step

in a country which previously lacked any specific national law on gender equality, particularly because it spells out responsibilities of public agencies to ensure gender equality. It specifies for example that at least one quarter of all representatives in central and local elected bodies be women.⁷⁷

4.9. POPULATION & DEMOGRAPHICS STRATEGY

The Ministry of Population Development and Social Protection has drafted a policy on Mongolian Population Growth for submission to the GoM in Spring 2014. Although Mongolia's demographics are currently in its favour, the paper acknowledges there are some big changes taking place to the population age structure. The proportion of working age people and children is dropping. There is also increasing urbanization, plus many Mongolians are leaving to work in other countries. Mongolia is expecting to have an aged society by 2025 to 2030. To make efficient

use of the demographic changes taking place, the GoM aims to:

- Increase the standard of living by providing work for aging people;
- Improve child medical care services and the condition of maternity boards;
- Acculturate and educate children and youth;
- Educate people who are transferring into the aged generation to be independent and to make their own savings, provide a safe and pleasant environment for living; and
- Support family development, improve the standard of living.

Consistent with the Green Development Strategy, one specific aim is to increase the average life expectancy to 72 years by 2025 and to decrease the gap in life expectancy between men and women. Once finished and passed through Parliament, this policy will help support the development of a socially-inclusive green economy.



4.10. ENVIRONMENTAL LEGISLATION

Beginning with the constitution in 1994, the GoM has attempted to create a strong framework for environmental protection. According to the Asian Development Bank⁷⁸, the hierarchy of policies and legislative provisions for environmental management in Mongolia comprises five layers:

1. The Constitution (1994);
2. International treaties (e.g., Convention on International Trade in Endangered Species, Ramsar, and others);
3. General environmental law (e.g., Law on Environmental Protection 1995);
4. Laws relating to natural resources (e.g., water, forest, air, land, fauna, hunting, strictly protected areas, natural plants, buffer zones, underground resources, petroleum, and mining laws); and
5. Fee-related laws (water fees, hunting fees, forest use fees, natural plants conservation and restoration of natural resources).

Most laws are supplemented by more detailed orders, regulations, requirements, or standards.

The Mongolian Government has made significant reforms in recent years. On 17 May 2012, the GoM enacted a series of revisions to its environmental laws. The new environmental legislation replaced 18 environmental laws with eight laws and two entirely new laws. All were subsequently ratified by the Mongolian Parliament in May 2012.

One of the big reforms was to make polluters liable to pay compensation for damage to the environment and natural resources. There is also now a requirement on any organization whose activities involve the use of natural resources to commission an environmental assessment audit every two years.⁷⁹

These reforms demonstrate that the GoM is committed to ramping up environmental protection in Mongolia. These revisions also help to reduce duplication in environmental laws. However, according to Aldrich and Melville, “a lot of the drafting is either vague or left to be developed by Government agencies at a later date.”⁸⁰

It is also unclear whether the Mongolian environmental industry, which is only just beginning to develop, will

have sufficient capacity in terms of technical ability, independence and impartiality of environmental assessors and inspectors. Furthermore, Aldrich argues that the introduction of the subjective concept of “intrinsic environmental value” brings further uncertainty with respect to calculation of fees.

A particularly controversial law has been the “Law on Prohibition of Mineral Exploration and Mining Areas in the Headwaters of Rivers, Protected Water Reservoir Zones and Forested Areas” (known as the Law with the Long Name). The Government adopted this law in 2009 driven by the concerns of environmental activists and herders. Under the law, the GoM cancelled over 200 mining and exploration licenses that operate within 200 meters from water and forest sources. However, this sudden measure caused intense opposition from miners while raising public expectations for stricter enforcement and revisions in the major mining and environmental legislation.

The Parliament recently considered amending or repealing this law in the autumn 2013 session. This sparked an attempted attack by the Gal Undesten protest group on Parliament House on 16 September 2013. The organization fears any repeal would lead to a sharp increase in mining operations, inflicting irreparable damage to the environment.⁸¹

4.11. RENEWABLE ENERGY & ENERGY EFFICIENCY

Mongolia has made considerable strides in its renewable energy policy in recent years. The first initiative was the GoM’s “100,000 solar homes” programme. This began in 1999 to supply gers with free solar panels and batteries to attach to their homes. The initiative provided ger families with a free, clean source of electricity, while reducing the migration from the countryside to urban areas. The programme was implemented during 2000–2010 and as a result 70 to 90 per cent of herder households now have access to solar and wind power.⁸²

Attention moved to developing the renewable energy sector for large-scale power generation in 2005. Mongolia’s “National Renewable Energy Programme (2005–2020),” passed by Parliament in June 2005 set renewable energy targets of 3 - 5 per cent by 2010, and 20 - 25 per cent by 2020. The programme plans

to improve the structure of the energy supply and utilise renewable energy technologies in rural areas. This programme also urges the development and implementation of a Master Plan to use the renewable energy sources.

The Mongolian Law on Renewable Energy was passed by Parliament in 2007. The purpose of the law is to promote, incentivise, and support the production of energy from renewable sources by regulating generation, transmission, and pricing of green energy. The Law established a renewable energy fund, and set feed-in tariffs for renewable energy power sources. The tariffs are set within the following limits:

- For electricity generated by wind power: US\$0.08 - 0.095 per kWh.
- For electricity generated by a hydropower plant with a capacity of less than 5,000 kWh: US\$0.045 - 0.06 per kWh.
- For electricity generated by solar power: US\$0.15 - 0.18 per kWh.

These feed-in tariffs arrangements were crucial for the development of the Salkhit wind farm, which opened in June 2013. The GoM signed a power purchase agreement with Clean Energy, Mongolia's first wind energy company, agreeing to pay \$95 per MWh.

The GoM also provides import duty and value-added tax exemptions for the import of equipment and materials for renewable power plants by small and medium enterprises. The exemptions were first introduced in April 2011. As of 22 December 2012, there were 33 components listed for exemptions, specifically for wind and solar plants.⁸³

While these renewable power plants will help to ensure a sufficient energy supply for Mongolia, the GoM also aims for Mongolia to become an exporter of renewable energy. The Ministry of Energy estimates that Mongolia has enormous wind power resources, with 'good-to-excellent' wind resources equivalent to 1,100GW of electric potential.⁸⁴

It aims to build more wind parks and a very large-scale PV power generation system in the Gobi region. The GoM is also trying to promote building a high-voltage, direct current (HVDC) electric power transmission system between Russia and China through Mongolia. As President Elbegdorj recently told reporters,

"Mongolia can be Asia's super grid for wind power and solar power, and other renewable energies."⁸⁵ However, building these projects will involve significant cooperation with the private sector, discussed further in Chapter 3.

Mongolia has rich coal reserves and most of the currently installed power plants are coal-burning plants. This is expected to promote the continued use of coal. Therefore, it is also important to study advanced fossil fuel technologies, such as carbon capture and storage, lower carbon emission options as well as renewable energy technologies.

4.12. EFFORTS TO CURB AIR POLLUTION

On addition to its efforts to promote renewable energy, the GoM has recently established the Clean Air Fund, a special Government initiative to combat air pollution. This fund was allocated MNT92.5 billion by the GoM budget from 2011 to 2013. It is particularly focused on subsidizing cleaner coal fuel for the ger districts to use in stoves and with subsidized air filters. As of October 1, 2013 the initiative has spent MNT67 billion of its allocated fund. In conjunction with other projects and the worsening air pollution, it is difficult to assess the efficacy of this fund.⁸⁶

4.13. STEPS FOR A GREENER MINING INDUSTRY

The GoM has taken a number of steps towards cleaning up Mongolia's mining industry and reducing the impact on the environment and local communities. The Ministry of Mining has drafted a green mining policy aimed at reducing the detrimental effects.

There also have been more direct steps. In June 2013, the MEGD shut down the Tsagaan Khad Customs stockyard which effectively closed a key route for coal transport to China citing environmental damage. Furthermore, the Ministry of Mining is currently considering having the abandoned and damaged mining areas rehabilitated by a qualified remediation company by raising 1 billion MNT from the Government budget.⁸⁷

The Mongolian Government has taken steps to legitimise, regulate and reform the ASSM sector.

Calls to ban ASSM due to environmental and health concerns have failed to gain support because of the large numbers of people working in ASSM. Instead the Government is reforming the sector by offering skills training and increasing the capacity of ASSM collectives.

4.14. AGRICULTURE, LIVESTOCK AND LAND MANAGEMENT

The GoM is taking steps to ensure the sustainability of agriculture and herding. To improve the prosperity of herder households, the GoM passed in June 2009 the “Government policy towards herders”. The policy aims to increase herders’ employment, improve their health and include them in the social insurance system by enhancing their knowledge and skills and encourage their co-operation and business organization.⁸⁸ There are a number of measures within the policy including providing land tenures for herding households and exempting herding households from individual income tax.

The National Mongolian Livestock Program also aims to support the agricultural sector. This programme will operate in two phases from 2010-2015 to 2016-2021. It has five aims: to establish legal, economic and institutional environment, improve veterinary practices and animal breeding, develop climatic and ecologically adaptable livestock production, and developing targeted markets for livestock and livestock products.⁸⁹

The GoM also has recently established an agricultural commodity exchange, launching its first trade on 5 March, 2013. The exchange is designed to help herders realise higher value and protect them from market price fluctuation. Cashmere was the main material traded when the market first opened.

To protect against ‘dzud’ events devastating livestock, the GoM with the assistance of the World Bank has helped set up an Index-based livestock insurance system. The programme operates through a public-private partnership with domestic insurance companies to offer affordable and cost-effective insurance coverage to herders, while protecting domestic insurers against major losses.

Under the policy, herders bear the cost of small losses (less than 6 per cent livestock mortality rate). Larger losses (6 to 30 per cent) are transferred to the private insurance industry, while anything above 30 per cent losses are covered by the GoM. The 2009-2010 winter dzud resulted in the largest payments of the programmes history, when excess of US\$1.3 million was paid out after 22 per cent of the country’s livestock died.

In addition, bee-keeping is an important green agricultural sector making a revival in Mongolia. Following the transition from a planned economy to a market-oriented economy, bee-keeping faced a sharp downturn. However, due to efforts of World Vision, WWF and others, there have been many positive changes. In 2012, there were 89 bee-keeping farms in Mongolia, thought to represent some 500 jobs.

The GoM is acting to ensure food safety and security under the “National Programme for Food Security (2009-2016)”. This aims to revive agriculture and intensive farming in the Western and Eastern regions.⁹⁰ In particular, the GoM has implemented the “Khalkh Gol” project with the objective of using the old and new crop fields in Khalkh gol eastern region.

One agricultural initiative introduced support the green economy is a national programme on “Green job place – Seabuckthorn”. Seabuckthorn is a berry-yielding plant native to Mongolia. Within this programme, seedlings were planted on 620 hectares, while 215.6 hectare fields were protected against sand movement and rehabilitated from mining exploration sites. A Green label was given to seabuckthorn oil and seabuckthorn juice by MNCCI as part of its “Made in Organic Mongolia” initiative. It is estimated that this programme has created 4,591 green jobs.

There are several studies on regional development and current status. The EPCRC’s “Provincial Competitiveness Index” study is one of the most comprehensive, measuring for the first time the competitiveness of Mongolia at a provincial level. In this research, all 21 aimags are assessed according to 180 criteria under four main categories: infrastructure, business environment, economy and governance. Among these are criteria directly related to the green economy.

In addition, the Mongolian Development Institute (MDI) has assessed the sensitivity of the Bayankhongor aimag to climate change by analysing the social and ecological vulnerability of each soum. As a result of this study, the Government's 2013 Budget Law allocated funding within the aimag to the most vulnerable soums. The allocation of funding was based on five areas: environmental, economic, social, infrastructure, and poverty reduction.

Based on their assessments, the MDI is calling for increased cooperation for poverty reduction and livestock management, training of herders and climate adaptation. In 2014 the MDI will focus on a further six aimags, with the intention of using the tool nation-wide.

4.15. FORESTRY PROGRAMMES

Beginning in 2001, the GoM established the National Programme on Forestry. Under this are major sub-programmes for: Institutional strengthening, re-forestation, sustainable management of natural forests, forest waste utilization, forest fire management, rehabilitation and modernization of forest based industries, non-wood forest products, biodiversity conservation and protected area systems, desertification control, forestry research and technology development, education, training and public information.

The programme is now in its third stage, running from 2011 to 2015. The programme objective is to identify state policies and the direction of activities on improving the capacities of protection, proper use of resources and rehabilitation of forests in accordance with ecological balance and sustainable development requirements.

In 2011, Mongolia became a partner country for the UN REDD programme, which has four parts: 1. Adjustment, including determining governance for REDD+, on how participating parts will contribute, 2. Preparation of the National REDD+ strategy such as reducing the forest insufficiency, protection from ecological disasters, 3. Control of the greenhouse gases produced, and 4. Create an estimation, control, confirmation (ECC) system.

4.16. WATER AND WASTE MANAGEMENT

The Government has established the "National Programme on Water", which includes establishing water basin administration units to oversee the re-use of waters in mines and after treatment. As a result, Energy Resources LLC has started to re-use 95 per cent of their wastewater, and to require Oyu Tolgoi LLC to re-use at least 80 per cent of their wastewater.

Ulaanbaatar City Municipality recently started distributing 15 garbage bags a month to households in order to teach citizens to classify garbage and not to throw it away unsorted. This is seen as a key step towards collecting separated garbage for recycling. A public awareness campaign for garbage separation, however, is still missing. The city spends MNT 5.0 billion to produce these plastic bags. However, currently all garbage bags are deposited together without being sorted. Unless supported by a recycling programme then it will have a negative impact on the that such plastic bags have a long biodegradation period.

4.17. PROMOTING ECOTOURISM

Mongolia needs to promote and develop tourism as a priority sector to generate income and employment, develop rural areas, and diversify the economy. However, there is a need to protect the environment and Mongolian culture leading to a green tourism industry. The Green Development Strategy acknowledges this by defining one of its activities as to "make the tourism sector a leading sector of the economic development, and improve natural, cultural and eco-tourism products and services."

Supporting this strategy, the Ministry of Culture, Sport and Tourism is currently drafting a new Tourism Law of Mongolia. Once the law passes, the Ministry is planning to actively promote tourism, particularly ecotourism, by ensuring eco-friendly waste and water management.

5. BEYOND THE GOVERNMENT: CURRENT INITIATIVES FOR A GREEN ECONOMY

Beyond the activities of the Government and their Green Development Strategy, a number of ongoing and planned initiatives relevant for PAGE are being directed toward the private sector, domestic NGO's and international agencies. These are being conducted through specific programmes supporting green industries, tackling air pollution and deforestation, and promoting better water management.

5.1. GREEN STRATEGIES IN THE PRIVATE SECTOR

The private sector in Mongolia is actively engaged in developing the green economy, even developing their own green strategies.

Furthermore, the Mongolian National Chamber of Commerce and Industry (MNCCI), an important representative of the business community, produces its own "**Green paper**".⁹¹

There are six strategic objectives in the MNCCI's "Moving from Brown to Green Economy" national programme initiative. The document includes the "5x20" goals which lists five targets for the Mongolian Economy to be reached by 2020:

- Decrease greenhouse gas emissions by 20 per cent per unit of GDP;
- Increase energy efficiency by 20 per cent;
- Increase renewable energy sources up to 20 per cent of total installed capacity;
- Increase investment in natural capital by 20 per cent; and
- Increase "Green procurement" up to 20 per cent of Government and local government' procurement.

The strategy calls for not less than 2 per cent of GDP in Green investment every year. The first three years from 2013 to 2015 should be the transition period from a brown to green economy, while 2016-2020 will be the stage for sustaining and developing a low-carbon green growth model.

The MNCCI's targets for green development are not as ambitious or broad-ranging as the Government's GDS, as Table 3 shows. For example, the GDS seeks to reduce GHG emissions by two-fold by 2020 against the 2006 baseline, while the MNCCI's target is to reduce in by 20 per cent against the 2010 level. That is the GDS seeks 4.885 kg CO₂ eq/US\$ by 2020, while the MNCCI's strategy is to reduce carbon emissions to 6 tons CO₂/US\$ million GDP by 2020. The renewable energy target for both strategies is 20 per cent by 2020, although that is largely due to the renewable energy law already in place.

The MNCCI's green strategy is narrowly targeted and very much directed at GHG emissions and energy production. It does not deal with broader aspects, such as life expectancy or land management.

Despite the limited scope, the strategy still demonstrates a leadership and ambition by the MNCCI in developing a green economy.

5.2. PROMOTING GREEN PRODUCTS

One of the initiatives within green labeling is the MNCCI's **Green Hotel Eco Label** initiative. This voluntary labeling initiative was established in 2012 to certify hotels with environmentally-friendly management activities. The green hotel eco label has 14 criteria relative to water conservation, energy efficiency, waste reduction, management and information to guests and staff.

In terms of consumer goods, the MNCCI in cooperation with the MEGD seeks to establish internationally recognised rules and procedures for labeling green products. The MNCCI in cooperation with the IVAM institute on sustainability at Amsterdam University and Austrian GrAT Ltd. conducted a "Green product development and labeling" project on introducing EC expertise and experience on promoting green products through eco labeling of products. There are

Table 3: Comparison of Draft GDS Goals and MNCCI Green Paper 2012 Goals

GDS Draft Goals*	MNCCI Green Paper 2012 Goals	Baseline
Green House Gas Emissions		
Reduce GHG emissions per unit of GDP two-fold by 2020 against the 2006 level of 9.77 kg CO ₂ eq/US\$, that is to 4.885 kg CO ₂ eq/US\$.	Decrease GHG emission by 20 per cent or up to 6 tons CO ₂ /US\$ million GDP in comparison with 2010 level by 2020.	Greenhouse gas emissions are currently 7.5 t CO ₂ -eq/ml. US\$ GDP, which is 10 times higher than the world average.
Renewable Energy		
Increase the share of renewable energy in the total installed energy capacity up to 20 per cent by 2020.	Increase renewable energy production up to 20 per cent of total installed energy capacity by 2020.	Renewable energy sources account for only 4.5 per cent of total installed energy capacity, while 95.5 per cent is from coal-burning power stations.
Energy Efficiency		
Not specified.	Increase energy efficiency by 5 per cent by 2015, and by 20 per cent by 2020 in comparison with 2010 level.	Energy intensity is seven times higher than world average (3.04 kg.coal eq./US\$ vs 0.39 kg c.e./US\$), (UNIDO 2011).
Green Procurement		
Utilise at least 20 per cent of purchases of goods and services with central and local budgets for green procurement by 2020.	Increase green procurement up to 5 per cent by 2015 and up to 20 per cent of total procurement by 2020.	No data available.
Natural Capital		
Not specified.	Increase investment in natural capital by 10 per cent in comparison by 2015, and by 20 per cent by 2020 in comparison with 2010 level.	No data available.
Water Management		
Supply at least 90 per cent of the population with healthy potable water, increase the access to improved sanitation facilities by at least 80 per cent and recycle domestic waste and grey water. Introduce technologies for industrial waste water purification up to the standard level and reuse at least 60 per cent of the used water.	Reach the ratio of groundwater to surface-water consumption to 30:70, by 2015, and reach the ratio of ground water to surface-water consumption to 50:50.	As of 2011, 85 per cent of Mongolians have access to an improved drinking water source. This has risen from 67 per cent in 2001.
Green Investment		
Spend at least 2 per cent of the GDP annually for green development.	Disburse not less than 2 per cent of GDP in Green investment yearly.	No data available.
Life Expectancy		
Increase the life expectancy up to 72 years by 2020.	Not specified.	As of 2011, life expectancy at birth was 68.5 years, an increase from 63.7 in 2001. With similar growth, life expectancy should reach 72.8 years in 2020.
Land Management		
Include at least 25 per cent of the total landmass in national parks by 2020. Network of the national special protected areas should include: at least 70 per cent of the habitat of rare and extremely rare animals and plant species, at least 60 per cent of forest areas and headstream territories of major rivers. Rehabilitate 10,000 hectares of forest land annually with support of state budget.	Not specified.	According to the World Bank, currently 13.4 per cent of Mongolian land mass is included as a protected area.
Economic Development/Restructuring		
Achieve a 40 per cent share in the industrial sector by 2020.	Create green economy incentives and leverages.	In the year to June 2013, the industrial sector accounted for 6.2 per cent of total GDP.

* Goals based on targets included in the 2013 draft of the Green Development Strategy.

22 factories involved with project activities across Mongolia taking part in the eco designing of green products and green feasibility study. The MNCCI is currently working on the establishment of a new labeling institute.

The MNCCI is also promoting an organic food promotion programme, known as "Organic Mongolia". This includes running exhibitions and fairs in organic foods, awarding green products, and creating a green products counter in shops. There is a "Made in organic Mongolia" label awarded to 23 products, as well as a "green bar code".

5.3. GREEN BANKING AND GREEN LOANS

The MNCCI has established the Green Credit Guarantee Fund (GCGF), a Netherlands-funded project to promote Energy Saving Companies (ESCOs) with a grant from The Royal Netherlands Embassy in Beijing.

The purpose of the fund is to provide a collateral guarantee for energy efficiency improvements, green investments, and cleaner production projects. It is hoped that the GCGF will help address one of the primary barriers to financing of energy efficiency and other environmental improvement projects, notably inadequate collateral. In addition, it is anticipated that loans guaranteed by the fund will be given at below market rates, reflecting the reduced risk provided by the guarantee.

The Green Credit Guarantee Fund has issued a total of MNT415.5 million in loans to eight business entities in the areas of fuel and energy efficiency, water purification, waste reduction, and recycling for a three-year period to 2012. Of these loans, 20-80 per cent were offered through collateral guarantees of the fund's own assets.

In addition, the GCGF obtained MNT1 billion in loans from the Government of Mongolia at a discounted loan rate in 2007, and has issued the loans to 13 SMEs on a preferential basis with a particularly low loan repayment rate.

Mongolian banks XacBank and Golomt bank are also providing subsidized loans for green businesses and households.

XacBank, with its international partner Micro Energy Credits, plays an innovative role by offering green products as both business and personal loans. Homeowners can apply for a microfinance product through XacBank to purchase home insulation and efficient heating stoves. XacBank currently offers three types of green loans for personal consumption: energy efficient stoves, ger covers and energy efficient fuel. They can also benefit from carbon funding and Government subsidies to ensure that the product is affordable. Most households save money the first month they transition to clean energy. In addition, these households enjoy warmer homes and cleaner air.

XacBank also provides start-up loans to local producers to increase production of both the stove and the ger cover.

Golomt bank provides a system of environmental credit evaluation, whereby an assessment of the environmental impact constitutes an integral element of their credit evaluation process. Through their lending policy, they support businesses to implement energy-efficient and environmentally-friendly operational procedures. They claim not to support any project which is perceived to be deleterious to the environment.

Furthermore, Golomt Bank is the only institution to extend Environmental Protection Loans to its clients among commercial banks implementing Phase 2 of TSL Project Loan Programme supported by the Japanese International Cooperation Agency (JICA) in cooperation with the Ministry of Finance.

5.4. PROMOTING DECENT WORK

There have been several initiatives to promote decent work in Mongolia. In 2005, the GoM, the Confederation of Mongolian Trade Unions (CMTU) and the Mongolian Employers' Federation (MONEF) supported by the ILO adopted the **National Plan of Action for Decent Work (NPA-DW) 2005-2008** followed by the **Decent Work Country Programme 2006-2010**. According to this programme, decent work criteria consists of compliance with:

- rules and regulations on minimum wage;
- the freedom of association and right to collective bargaining;

- occupational safety and health;
- no forced or compulsory labour;
- the absence or abolition of child labour; and
- the elimination of discrimination with respect to employment and occupation.

Decent work and green jobs are more broadly defined in the “Green Jobs Mapping” study done by the EPCRC within the PAGE project.

5.5. ENERGY EFFICIENCY AND CLEANER BUSINESS

An example in this field would be the MNCCI's works aimed at promoting the development of environmentally-friendly and economically-efficient industries and services by implementing Cleaner Production principles.

MNCCI's Sustainable Production and Consumption department is working with the support of the Government and international organizations to create a National Cleaner Production Programme. This includes:

- conducting cleaner production assessment audits at factories to identify potential energy savings following the UNEP developed “Cleaner production and energy efficiency Manual”;
- undertaking specialised training on energy efficiency and Energy Service Company (ESCO) services in partnership with the University of Amsterdam;
- introducing energy management systems to companies;
- developing and implementing projects focused on increasing energy efficiencies;
- raising awareness of ESCO services;
- development on a green-office guide; and
- producing a series of “green business and green economy CD's”.

A number of programmes funded by international organizations aim to improve energy efficiency directly. UNDP has established the Building Energy Efficiency Project (BEEP) in Ulaanbaatar. BEEP will contribute to the transformation of Mongolia's buildings market towards more energy-efficient building technologies and services, sustainable private house insulation and energy efficiency financing mechanisms. The project is targeted at new buildings as well as improving the

energy efficiency existing in gers and private houses in urban areas. The project is running from February 2009 to 2013 with a budget of US\$3,815,000.⁹²

A USAID-GIZ project recently also completed a thermo-technical retrofitting initiative on three schools in Ulaanbaatar. Those selected for rehabilitation were School No. 63, No. 79-1 and No. 79-2. This project uses clean energy through solar power and thermal insulation to increase heat levels in the buildings. In addition, the project utilised local contractors, engineers, and architects who receive on-the-job training on the application of environmentally-friendly techniques; learning modules on clean energy will also be provided to teachers and students. Funding for this 13-month project is US\$1,517,000.⁹³

5.6. PRIVATE SECTOR INITIATIVES TO DEVELOP THE RENEWABLE ENERGY SECTOR



Mongolia's renewable energy sector ranks as one of the most promising for the green economy. There are currently 12 companies and one institute engaged in the introducing, testing and production of renewable energy.

There are currently two wind power stations in Mongolia. The first is in Khatanbulag soum, Dornogovi aimag. The other is the Salkhit wind farm in Sergelen soum, Tuv aimag, around 70 km from Ulaanbaatar. The Salkhit wind farm is the first significant renewable energy generator in Mongolia. Completed on 20 June 2013, it is a landmark project that came as a result of close cooperation between the private sector, international development institutions, and the GoM. The wind farm consists of 31 turbines producing 50MW, equivalent to over 5 per cent of the grid's entire capacity.⁹⁴

Construction of the Salkhit wind farm began in 2011.⁹⁵ It was funded with debt and equity financing of US\$47.5 million from the EBRD and the same amount from the Netherlands Development Finance Company (FMO), the Dutch development bank. The project is implemented by Clean Energy LLC, a joint-venture 51 per cent owned by Mongolian technology company Newcom, 14 per cent owned each by the European Bank for Reconstruction and Development (EBRD) and Netherlands Development Bank (FMO), and 21 per cent by General Electric.⁹⁶

The wind farm will offset 180 thousand tons of CO₂ emissions, enabling Mongolia to sell carbon credits, save 1.6 million tons of fresh water, and reduce coal usage by 122 thousand tons annually. The project also has provided green jobs. At the peak of construction activity, the project employed 500 workers, 94 per cent of them Mongolian. With construction complete, there will be 25 to 30 employees engaged at the wind farm on an ongoing basis.

The implementation of Salkhit has awakened interest in Mongolia's renewables sector. Beyond the wind farm, other clean energy sources include eight solar power stations with a total capacity of producing up to 100 kW of energy in the following aimags: Umnugobi (1), Govi-Altai (3), Bayankhongor (1) and Bayan Ulgi (3), as well as three combined solar and wind power stations with an installed capacity of 150-200 kW.

There are also 11 hydropower stations with installed capacity of 11kW to 2000kW. However, the existing hydropower plants only produce low output levels because they cannot operate in winter due to ice formation. The World Wild Fund for Nature (WWF) has raised concerns that the output generated is not worth the environmental damage causes.

There are also plans to build a new solar and wind farm in Umnugobi aimag. Newcom Group in collaboration with Japan's SoftBank is conducting a feasibility study on building a 300-megawatt power station there, this would be six times bigger than the Salkhit wind farm.

There have been a number of projects to provide solar electricity for ger families. The World Bank's Renewable Energy and Rural Electricity Access Project (REAP) helped the Government of Mongolia complete its

National 100,000 solar ger's programme. The project also helped fund improvements in soum (district) electrification, including rehabilitating mini-grids and installing renewable energy technology hybrid systems to power them.⁹⁷

The Global Green Growth Institute aims to develop strategies for promoting the implementation of green energy systems in Mongolia. The project is assessing the current status of the Mongolian energy sector, including the identification, elaboration, and evaluation of three key energy scenarios, and developing proposals for key green energy growth initiatives for Mongolia. The project is being conducted with the Stockholm Environment Institute US Center, and a team of Mongolian local consultants.⁹⁸

5.7. COMBATING ULAANBAATAR'S AIR POLLUTION

There have been a number of internationally-funded programmes to combat air pollution in Ulaanbaatar. As much of the pollution is caused by emissions from ger stoves, the biggest projects are those providing reduced pollution plus fuel efficient ger stoves and ger blankets.⁹⁹

One of the biggest programmes was the Energy and Environment Project funded by the US Millennium Challenge Corporation. This programme provided US\$31.3 million to fund consumer subsidies for the purchase of energy efficient and lower emissions products, including stoves and ger blankets. At its largest point, the programme had 42 sales centres and 150 dedicated staff. The programme funded a 90 per cent subsidy of the ger stoves, reducing the cost of the cheapest models to about US\$20, a tenth of their price. MCC financed US\$47 million (about 80 per cent of the project) while the Mongolian Government funded the remaining 20 per cent.

The EPP was closed in November 2012. During the course of the project, the programme sold nearly 100,000 improved stoves, 20,000 ger insulation kits, 4,500 vestibules, and 100 energy efficient homes, helping nearly 100,000 households of Ulaanbaatar's ger districts to save money and help contribute to a cleaner environment.

Since the EPP finished, the World Bank has continued the ger stove subsidies programme through the **Ulaanbaatar Clean Air Project**. There are three components to this project:

1. Ger area particulate matter mitigation.
2. Particulate matter mitigation in Central Ulaanbaatar.

This component has four sub-components: (1) mitigation of fugitive dust from lack of city greening; (2) mitigation of dust from power plant emissions and ash ponds; (3) district heating feasibility study and knowledge building; and (4) affordable housing policy technical assistance.

3. Public awareness raising, programme coordination and project management.

The World Bank is sharing the costs of the ger subsidies equally with the Mongolian Government. With the support of the World Bank, the GoM has mobilized about US\$45 million in donor assistance. The Bank also approved an additional US\$15 million credit for the Ulaanbaatar Clean Air Project, which is implemented by the Ulaanbaatar Municipality.

The subsidies are expected to continue for another two to three years, and taper down gradually. To continue offering the 90 per cent subsidy, XacBank is planning on using funding for the carbon credits it offers for stove sales on the voluntary carbon offset market. XacBank has teamed up with American company called MicroEnergy Credits, who handle the accreditation including 'Gold standard credits system certification'. The social impact through the reduction in pollution as well as reduction in carbon-dioxide is very attractive to XacBank's clients.

From August 2011 to February 2013, the European Bank of Reconstruction and Development (EBRD) provided €750,000 for the Ulaanbaatar Clean Air Initiative Phase II. The programme supported the use of cleaner fuels and the strengthening of the GoM's Clean Air Fund (CAF) by reviewing and strengthening its procedures, legal framework and budgeting. The project reviewed air quality-related legislation and assisted in the development of additional legislation. It also reviewed the production and distribution systems of cleaner fuels and assisted in the development of improved distribution systems, thereby taking into account affordability and public awareness.

There is some dispute as to the effectiveness of these programmes. The National Air Quality Monitoring Agency, a Government body, claimed a 20 per cent reduction in particulate matter from 2010 to 2011. However, meteorological conditions may have influenced this result.¹⁰⁰

Despite the improvements, air pollution levels remain extremely hazardous and much bigger reductions in air pollution are required to truly resolve the problem. One recent study finds that to achieve Mongolia Air Quality Standards, particulate emissions would need to be reduced by 94 per cent from ger areas, suspended soils and boilers combined.

To date, there have been few projects to assist with the symptoms of air pollution rather than the causes. A small project to manage the effects of air pollution in UB is the **Mongolian Air Pollution Project (MAPP)**, a collaboration of the Mongolian Red Cross Society and the Health Sciences University of Mongolia.

MAPP is focusing its campaign on children in a number of schools in ger districts with the aim to link in with their families and the community more broadly. The project looks to empower these communities through education and awareness around air pollution, its effects and how to prevent it. Students will have the opportunity to participate in a number of activities that aim to make mask-wearing less of a chore and more fun.

The MAPP project seeks to: (1) introduce appropriate masks for protection from PM Air Pollution to the ger Districts in Ulaanbaatar, (2) deliver an Air Pollution educational programme in schools through trained youth volunteer, (3) acquire data on health impacts and consumer interest to be used to create market demand for the appropriate masks in Ulaanbaatar.¹⁰¹

5.8. ENVIRONMENTAL GOVERNANCE

The critical project in this area has been **UNDP's Strengthening Environmental Governance in Mongolia, Phase I and Phase II**. The aim of the project is to improve systematic capacity for sustainable management of resources at the central and local levels, while facilitating a stronger enforcement of legislation and a wider participation of primary resource users.

The first phase of the project ran from February 2011 to December 2013, while the second phase is underway.

There are three objectives to the project: (1) Streamlining and strengthening of Mongolia's environmental legislative framework; (2) Strengthening environmental mainstreaming mechanisms; and (3) Strengthening capacity of NGOs/CSOs to engage in environmental governance processes.

The first stage of the project carried out a review of Mongolia's many environmental legislative documents, an assessment of the implementation mechanisms of Mongolia's environmental management system, and an assessment of the institutionalization of Strategic Environmental Assessment (SEA) and Environmental Auditing (EA).

Stage II of the project has three objectives:

1. Developing a road map to harmonise Mongolia's environmental legislative framework;
2. Environmental mainstreaming mechanisms developed for adoption by Government; including a climate change library in aimags, developing a cost-benefit analysis for mining in Mongolia;
3. Develop a resource mobilization strategy for environmental NGO's/COS's.

An additional UNDP project for Environmental Governance is **Strengthening the Protected Area Network in Mongolia (SPAN)**. The project began in August 2010 and aims to improve the management effectiveness and financial sustainability of Mongolia's protected areas system. It also seeks to strengthen partnerships between PA authorities, local communities, local government, NGOs and the private sector to achieve the long-term sustainability of PA financing to allow Mongolia to cover the financing gap. The budget is US\$2.0 million and it is scheduled for completion in June 2015.

A project only just beginning in Mongolia is the **Poverty Environment Initiative (PEI)**. The PEI is a UNDP and UNEP programme that supports country-led efforts to build linkages between poverty and the environment into national development and sub-national development planning, from policymaking to budgeting, to implementation and monitoring. The project intends to improve the livelihoods of poor

people dependent on natural resources and improve their resilience to climate change and other external shocks.

The programme provides financial and technical support to countries to integrate environment and climate concerns into national, subnational and sectoral planning and economic decision-making processes. Through the programme, UNDP plans on building on national priorities of growth, poverty and decentralisation, and managing environment outcomes that matter to poor women and men.

The Nature Conservancy is supporting environmental governance in Mongolia, particularly through its Development by Design (DbD) strategy. Parliament's 2012 passage of the environmental impacts mitigation act signaled Mongolia's acceptance of the DbD philosophy. At the Government's invitation, the Conservancy is providing technical input on the design of regulations and guidelines that will enable the law to be implemented.

5.9. PROMOTING SUSTAINABLE MINING

The Asia Foundation's **Engaging Stakeholders for Environmental Conservation (ESEC)** project was initiated in August 2010 to help Mongolian's protect natural resources from the adverse effects of mining. Funded by the Embassy of the Kingdom of the Netherlands, the Swiss Agency for Development and Cooperation (SDC) and the Asia Foundation, ESEC has been working with Government agencies, citizens, NGOs and mining companies to promote responsible mining practices, mitigate negative environmental impacts, and reduce conflicts between stakeholders.

The ESEC programme has established local environmental monitoring groups in 39 soums across 14 aimags to improve citizens' awareness of responsible resource use and encourage active participation in environmental conservation, and has also established multi-stakeholder councils (LMCs) in 17 soums helping to reduce conflicts and tensions. The programme also has published 16 manuals and guidebooks to increase public understanding of responsible mining, stakeholder engagement, train environmental inspectors, water engineers, and

secondary school teachers in water and soil quality monitoring and to help improve environmental protection.

With the first phase now complete, a second phase of the programme (ESEC II) was launched in June 2013 to address the environmental impacts of artisanal and small-scale mining (ASSM). The project is designed to improve Mongolia's artisanal mining sector, including promoting respect for decent work and the right to a healthy environment. Among its activities, the project will introduce a model ASSM rehabilitation technique developed in Uyanga Soum of Uvurkhangai aimag.¹⁰²

The SDC is also directly supporting small-scale mining through its **Sustainable Artisanal Mining Project (SAM)**. Beginning in 2005, the project is now in its third phase and is scheduled to finish in 2014. CHF 4,980,000 has been budgeted for phase three. In its first and second phases, the project enabled more efficient and environmentally mining by introducing chemical-free ore processing, community development and the improvement of working conditions. The project also assisted the GoM in the development of an Artisanal Small-Scale Mining Law, which led to the formalization of the ASSM sector in April 2010. However, despite progress in the ASSM legal framework, the formalisation process has been slow, leaving many artisanal miners unorganised, trapped

in a vicious poverty cycle and engaging in hazardous mining practices.

SAM also sponsored the establishment of a mercury-free gold-processing plant in Bornuur soum, Tuv aimag, in 2008. The plant is now owned by HAMO LLC and has become the soum's largest employer, providing more than 60 permanent jobs. As a result of projects such as these, artisanal mining is now recognised as a viable employment option in Mongolia.¹⁰³

5.10. AGRICULTURE PROJECTS

There are a number of programmes aiming to promote a more sustainable and productive agricultural sector in Mongolia. In June 2013, the World Bank commenced the **Mongolia Livestock and Agricultural Marketing Project**. This project is being implemented by the Ministry of Food, Agriculture and Light Industry at a total cost of US\$11.5 million. The objective of the project is to improve rural livelihoods and food security in selected areas through investments in enhancing productivity, market access and diversification in livestock-based production systems.

The project has three components. (1) Create productive partnerships by linking producers of livestock products to markets and diversifying sources of income



and household nutrition. (2) Increasing livestock productivity and quality. Support will be provided for animal health, nutrition, breed improvement and feeding. (3) Assistance with project management through establishing a Project Implementation Unit (PIU) at the Ministry of Agriculture and Light Industry.¹⁰⁴ The Asian Development Bank is also managing the **Establishment of Climate-Resilient Rural Livelihoods** project, with US\$2.5 million in funding from the Japan Fund for Poverty Reduction. The project, which was approved in June 2012, has been operating in Bayankhongor aimag and will help herders to (i) strengthen their preparedness for recurrent dzud, and (ii) rehabilitate and/or improve their livelihoods. The project aims to promote sustainable herding including collective pasture management, water management, hay preparation, and management of herd sizes through effective marketing. The project was closed in December 2013.

The SDC is also working towards increasing the livelihoods of herders through its **Agriculture and Food Security Initiative**, particularly in the rural Western areas of Mongolia. This includes working towards improving local resources, services and skills to produce good market quality goods, support of regional and local economic development initiatives, and strengthening of livestock management, production, and support services for herders.

5.11. FORESTRY PROJECTS

As discussed in Chapter 2, UN REDD programme has been operating in Mongolia since 2011. It began its support by designing a framework for strengthening both functional and technical capacities of relevant national institutions to establish a strong foundation for the implementation of the Roadmap.

The GIZ is further promoting sustainable forestry through its **Biodiversity and Adaptation of Key Forest Ecosystems to Climate Change** project, including supporting REDD+. This will run from 2012 to 2015 and aims to conserve biodiversity by protecting important ecological areas and manage them in a sustainable manner. Management methods are adapted to meet the challenges of adapting to climate change, while ensuring an improvement in living conditions for rural populations. Pilot programmes are operating in Selenge and Khuvsgul Aimags, and will be expanded to the Bulgan region.

There are four elements of the project:

1. *Climate Change Adaptation Policy*: Implemented in agriculture policy, livestock management and forestry considering the role of people and ensuring the financing of relevant measures.
2. *Forest Certification and REDD+*: Developing guidelines, certification of forest enterprises, forest use and carbon calculations according to UN Reducing Emissions from Deforestation and Forest Degradation (REDD+) standards.
3. *Vocational Education of Forest and Environmental Technicians*: developing curricula and training manuals to educate qualified technicians for forest eco systems management.
4. *Sustainable Pasture Management in Protected Areas*: Sustainable pasture management will be implemented in protected areas of Khangai aimag.

The MNCCI has initiated a project aimed at planting saxaul trees in the gobi desert to stop desertification and save water resources. The project aims to plant 500,000 trees at a cost of MNT 330 million.

5.12. WATER MANAGEMENT STRATEGIES

There are a number of initiatives to improve water management. UNDP is undertaking the **Ecosystem-based Adaptation Approach to Maintaining Water Security in Critical Water Catchments** programme, which began in January 2013 and is scheduled to be completed in 2017. The Budget is US\$10.6 million consisting of US\$5.6 million in cash and US\$5 million of in kind services by Government. The project aims to maintain mountain and steppe water ecosystems by internalizing climate change risks within land and water resource management regimes. It also seeks to alleviate vulnerabilities and dismantle identified barriers.¹⁰⁵

The Korean International cooperation agency's (KOICA) supported the **renovation of Ulaanbaatar's water and heat pipeline system** from 2007-2009. The project supported the redevelopment of 44 centers, with a grant US\$5 million. A 2010 survey found that as a result of the project water and electricity consumption went down by 20 per cent. KOICA has agreed to implement a second project to renovate an additional 42 centers costing an additional US\$5 million up to 2013.¹⁰⁶

AusAID and the World Bank are teaming on the **Groundwater management in Southern Gobi** project which is providing support to strengthen groundwater management in Mongolia's south. Delivered as part of the World Bank's Mining Infrastructure Investment Support Project, the initiative will strengthen the capacity of Mongolian authorities to manage non-renewable groundwater resources. This will be achieved by piloting new institutional structures for groundwater management in three provincial capitals and strengthening the Ministry's ability to monitor groundwater.

5.13. A GREENER TRANSPORT SECTOR

In efforts to create a greener transport sector, Mongolia opened a vehicle factory in January 2014 to produce **green buses**, the country's first vehicle factory. The Ecobus LLC factory began producing Euro IV standard, environmentally friendly buses powered by J-800 diesel engines. The factory was funded by Nomin Holding.¹⁰⁷

The GGGI is conducting a **green public transport study** in conjunction with the Korea Transport Institute, and DEBUHDE Co., Ltd. (a Mongolian Local Consulting Firm). The initiative aims to promote green (i.e. low carbon) public transport in Ulaanbaatar City and thereby reduce GHG emissions and improve air quality. The project is developing a technical and economic assessment of converting diesel buses to eco-friendly buses and examining how to enhance inspection rules and regulations for vehicle emission control, effective management and operation strategies for the public transport system and the future extension to eco-station development for green transport.

Their findings suggest simple strategies such as more efficient bus routes or buses driving more quickly would dramatically reduce emissions.

5.14. GREEN FINANCING

Currently there are a number of investment projects aimed at contributing to green development. A noticeable example would be "The two-step loan project" (TSL loan project) funded by JICA (The Japan International Cooperation Agency) in accordance with

the loan agreement signed between the Japan Bank for International Cooperation (JICA) and the Ministry of Finance, the Government of Mongolia. This project was introduced in 2006, with the purpose of promoting sustainable growth and poverty reduction in Mongolia through long-term financing to SMEs involved with private sector development and environmental protection.

The main purpose of the TSL project was to support Mongolia's economic development, to promote job creation, to strengthen the banking and financial sector and to encourage environmentally friendly activities. Within this purpose, the project provides credit lines with favorable conditions that are aimed at financing qualified private sector projects. Furthermore, TSL project supports local commercial banks by reinforcing their credit evaluation capacity in the long term. As for the business owners, they also benefit as they improve their project writing skills as well as receive consulting services and financing.

This project credit line was issued through local commercial banks. The amount of loan available to a single customer is between US\$10,000-600,000. The payment term is 1-3 years with this initial period exempt from principal payment. The interest rate is discounted at 7 per cent (floating rate). The general requirements are that the borrowers must finance at least 20 per cent of the project themselves. It must also be feasible and meets health and environmental standards, while the investment yield must not be less than 13 per cent.

Due to the success of the phase one and the high demand, the GoM made a request to extend the project. The Japanese affirmed the request and the Parliament sanctioned the second phase of the project during its regular meeting on 27 January 2011. The second phase introduces ¥5 billion, which is roughly equal to MNT80 billion.

The first phase of the project started in March 2007. The credit was issued through Capitrone, Golomt, Trade and Development, Khan, Xac and State banks. A total of US\$25 million of credit was granted to 108 business entities in Ulaanbaatar, Darkhan, Erdenet and 18 other aimags. The second phase started in June 2011 and the credit was issued through Capital, Golomt, Khan, Xac, Trade and Development and Ulaanbaatar city banks. As of 31 December 2013, a total of 225 project loans were granted.

6. WORKING TOGETHER: RELEVANT INSTITUTIONS AND ACTORS FOR ACHIEVING PAGE OBJECTIVES

Collaboration and involvement of the Government, private sector, civil society, researchers, academia and international development organizations are all central to the successful implementation of the PAGE project. The results of the project can be defined through the long-term goals and objectives as well as willingness to support green development of the key ministries (such as the Ministry of Environment and Green Development and the Ministry of Economic Development) and other relevant actors. Furthermore, the implementation of this project should not be limited only within the terms of the current Government, but also through a long-term national programme.

In the private sector, recognition of incentives aimed at green activities as well as general standards and regulations would be effective in promoting green activities. In doing so, organizations like MNCCI and the Business Council of Mongolia (BCM) would act as effective mediums.

On top of this, international agencies and donor organizations are working on a number of Green Economy-related projects. NGOs such as the WWF and the Global Green Growth Institute will also be critical partners.

6.1. THE “NEW GOVERNMENT FOR CHANGES”

Elected in 2012, the Government of Mongolia is known as the “New Government for Changes”. It consists of a coalition including members from the Democratic Party, the Mongolian People’s Revolutionary Party, the Mongolian National Democratic Party, and the Civil Will-Green party. The Government has 19 ministers, including the Prime Minister, Deputy Prime Minister and the Minister of the Cabinet Office.

There are 16 Government Ministries, an increase from the previous Government’s 11 Ministries. This includes four central ‘general direction’ ministries: the Ministry

of Environment and Green Development, Ministry of Foreign Affairs, Ministry of Finance and Ministry of Justice and 12 outer ‘directional ministries’.¹⁰⁸ The most significant ministry for environmental management and promotion of the green economy is the Ministry of Environment and Green Economy. But there are a number of other ministries with important functions for managing the environment.

The **Ministry of Environment and Green Development (MEGD)** is the leading Mongolian Government agency for environmental management. It has responsibilities spanning a broad range of environmental areas including: nature and environment conservation, appropriate resource usage, rehabilitation and ecology policies; combating desertification and forestation issues, improving and protecting water resources, biodiversity, protected areas and environmental impact assessments.

The MEGD was established in 1987. It was known as the Ministry of Nature and Environment prior to the 2012 election, when it was transformed into one of Mongolia’s four central ‘general orientation’ ministries. Its name was changed to include Green Development to reflect the new Government’s focus.

The Ministry’s mission statement is: “To ensure human rights to live in healthy and sound environment by promoting social and economic development taking into consideration of ecological balance, promoting the sustainable use of natural resources, and facilitating the natural rehabilitation and restoration of environmental degradation to support green development, and to develop cooperation and participation of the Government, citizens, private entities and organizations on supporting sustainable development.”

The Ministry has four key functions:

1. To plan and implement environmental and green development policies and strategies in consistence

with the objectives of sustainable development, national economy, budget, financial resources and with strong ties of international cooperation;

2. To support private entities, local administrative units, non-governmental organizations, citizens initiatives and their cooperation on protecting the environment and supporting green development, and to direct their activities in compliance with relevant policies;

3. To support MEGD staff to introduce scientific achievements and globally-leading practices on environmental protection and green development, and to improve their professional skills;

4. To study and research the state of the natural environment, its evolution and trends, to introduce and apply scientific achievements and green technologies in production and service of environmental protection.

The **Ministry of Economic Development (MED)** was established in 2012 following the election of the new Government. The role of the Ministry of Economic Development is to formulate, develop and coordinate the Government's economic policies. The Ministry is responsible for: investment policies, consolidated policy on state economic and social development, loan and grant aid, trade policy, advanced technology and national innovation systems.

The MED is responsible for signing off any distribution of grants or loans from international organizations, such as the World Bank and Asian Development Bank. Within the Ministry, the **Department of Foreign Investment Regulations and Registration** is responsible for the promotion and facilitation of foreign direct investment in Mongolia. It holds the following functions:

- To promote Mongolia as an investment attractive destination;
- To implement policies and legislation with respect to foreign direct investment;
- To obtain the statistical data from state administrative body in charge of labour, taxation, custom, social insurance and foreign citizens;
- To register business entities with the foreign investment and representative office;
- To review foreign direct investment policies and regulations; and
- To analyse foreign direct investment and making forecasts.

The **Ministry of Mining (MoM)** provides policy guidance on geology and mineral resources, oil issues, fuel supply and reservoir, transparent and responsible mining development.

The **Mineral Resources Authority (MRA)** is a regulatory agency within the Ministry. The goal of the MRA is to support developing government policy on mineral resources sector and to provide investors, customers and other interested stakeholders with quick, convenient and customer-oriented services. The Agency has the following strategic objectives:

- Support the central administration of mineral resources and energy in formulating development policies, provide required information and create every favorable environment in implementing policy guidelines and increasing investment in this sector;
- Provide services related to exploration and mining special permits in order to implement the governing minerals law;
- Provide leadership and human resource management of public administration.

The **Petroleum Authority** is another authority under the MoM, responsible for the import and pricing of petroleum in Mongolia.

The **Ministry of Energy** is responsible for the consolidated policy on Energy, as well as the renewable energy development.

Within the Ministry of Energy, the **National Renewable Energy Center (NREC)** is responsible for Mongolia's National Renewable Energy Program, governed by the Law of Mongolia on Renewable Energy (2007). The NREC is a state-owned enterprise which conducts research on renewable energy resources and utilisation. The Center employs around 49 staff.

The Center's main activities are to:

- introduce sustainable development principles to Mongolia;
- achieve the goals of the Renewable Energy National Program;
- complete detailed studies on renewable energy resources and utilization;
- introduce new renewable energy technologies to Mongolia;



- undertake research on introducing new technology suitable to the special features of Mongolia's climate;
- implement projects, programmes and surveys throughout the country; and
- develop Mongolia's technical capacity.

The center is split into two main divisions: the Research & Business Development division and Production & Technology division. The Research and Business Development (R&BD) division conducts research into the production, testing and consumption of renewable energy. This includes solar, wind, geothermal, new energy sources and clean development mechanisms. The Centre's Production & Technology division includes the photo-voltaic factory, and the technical drawing and controlling group.

The **Ministry of Industry and Agriculture** is responsible for heavy and light industry policy, industrial parks, food supply, policy on animal husbandry and agriculture, livestock, wild animals and plant quarantine, export/import issues on livestock and plant products.

The **Ministry of Labour (MoL)** is responsible for labour engagement and poverty reduction, working conditions, salaries and living costs, issues on foreign nationals employment within Mongolia, and labour force exports. The Ministry will be a critical partner for the development of green job strategies.

MoL is made up of six departments. These are: Vocational Education, Employment, Labor and Employment Policy, Small to Medium Enterprise, Monitoring and Internal Auditing and Administration.

The **Ministry of Population Development and Social Welfare** focuses on population development and planning issues, issues on children, youth, women

and elders' development, gender issues, social welfare and social insurance.

The **Ministry of Health**. The Ministry of health manages the consolidated policy on population health.

These ministries are defined as the main stakeholders within this stocktaking study. In addition to this, the research team interviewed representatives of several key agencies and institutions. These are:

State Specialised Inspection Agency (SSIA) is responsible for implementing some 200 laws and other regulations, over 400 legal instruments in all. The SSIA is at the forefront of implementation of environmental policies and laws in Mongolia.

The **Mongolian Development Institute (MDI)** is a Government-funded research organization operating under the Office of the President of Mongolia and the Mongolian Academy of Sciences with a staff of around 30 researchers. There are three pillars to their organization: economy, society and environment. For the past three years, the MDI has focused on vulnerability assessments of climate changes and adaptation policies. Their research has focused on assessing the sensitivity of socio-ecological conditions on pastureland in Bayankhongor aimag. Their next research focus will be on green development. They have chosen six aimags to conduct this research on and will particularly focus on vulnerability assessments for the aimags, and basing aimag budgets on land vulnerability.

Standing Committee on Environment, Food and Agriculture of Mongolian Parliament for Supporting Green Development in Mongolia.

The Mongolian Parliament has seven standing committees. The Standing Committee on Environment, Food and Agriculture of Mongolian Parliament for Supporting Green Development in Mongolia in one of these committees, and has between 17 and 21 members.

The scope of the Committee is broad, covering all areas of agricultural and environmental policies in Mongolia. The committee has a major role to play in environmental protection and management through its consideration and review of draft laws and other draft resolutions of Parliament submitted

by law drafters and make recommendations and conclusions. The Committee is also charged to make proposals to improve state policy and parliamentary initiatives and to implement parliamentary control within its mandate.

With such a broad mandate and such a prominent position, the Committee is in an excellent position to influence environmental protection and the development of the Green Economy in Mongolia.

6.2. EMPLOYEE AND EMPLOYER ASSOCIATIONS

The ***Mongolian Employers' Federation (MONEF)*** is an independent and non-government organization that advocates employers and promotes the private sector. Established in 1990 by 35 private company owners, MONEF is now a nationwide organization embracing 21 regional employers' associations, agencies in 60 soums, 41 professional associations, 12 sector associations and representing collectively around 8,100 business in the manufacturing, construction, transportation, banking, insurance and service sectors. MONEF works in collaboration with the GoM as well as the Confederation of Mongolian Trade Unions, and is a member of the International Employers Organization.

The ***Confederation of Mongolian Trade Unions (CMTU)*** is a national trade union founded in 1927. Until 1991 the CMTU was affiliated with the World Federation of Trade Unions, a Soviet front organization, but has since joined the International Trade Union Confederation. CMTU was previously tied to the Mongolian People's Revolutionary Party, but in 1990 the link between the party and trade union was broken.

6.3. MONGOLIA'S PRIVATE SECTOR: AN IMPORTANT DRIVER FOR GREEN DEVELOPMENT

The research team met with several representatives from the private sector who participate in green activities. These are:

The ***Mongolian National Chamber of Commerce and Industry (MNCCI)*** promotes the development of international trade and investment in Mongolia's business community. The organization was founded in 1960, and since the end of the socialist system in 1990 has established itself as one of Mongolia's leading non-governmental institutions.

Today the MNCCI has over 2,700 members with 23 subsidiary branches in all of the aimags. The organization actively cooperates with more than 40 international Chambers of Commerce and Trade Promotion Organizations. In addition, the MNCCI houses the Mongolian National Arbitration Center.

The MNCCI has close working relationships with Government Ministries, Ulaanbaatar city mayor and local governments.

In 2010, the MNCCI established the ***Council of Water Policy Support***. The purpose of the Council is to: save rivers and lakes of Mongolia, develop Mongolian law on water, to increase the stringency of water standards, to increase awareness of water issues, to improve legal, economic conditions for the introduction of latest technologies, to save water, and to develop Government and private sector partnerships in the water sector.

In 2009, the MNCCI established the ***Council for renewable energy promotion*** with the aim to promote investment, exchange ideas and experiences for developing the renewable energy sector in Mongolia. Activities of the Council include: supporting sustainable actions of the energy industry, organising discussion between members, to research and introduce new technologies on renewable energy, to develop recommendations to policy makers, and conducting an energy legislation survey.

Another organization which is often considered a prominent representative of the business community is the Business Council of Mongolia. Among its permanent working groups is the "Environmental working group".

Newcom Group LLC is a Mongolian telecommunications, airline and renewable energy conglomerate. Newcom introduced cell phones to Mongolia in 1996 by investing in and establishing Mobicom, the country's premier mobile telecom operator.

Newcom launched Eznis Airways in 2006. Newcom was also responsible for Mongolia's first wind farm completed in June 2013. Newcom was awarded "The 2014 Global Green Award" by the Other Ways Management and Consulting Association.

Banking and financial sectors:

The majority of Mongolia's financial services are carried out through commercial banks and their credit services. As of today, there are 13 commercial banks operating in Mongolia. The research team met with the Mongolian Bankers' Association, Golomt and XacBank as representatives of the banking sector. For example, XacBank currently supports several economic greening activities, such as the Ulaanbaatar clean air project, eco household loan, eco SME loan and mortgage loans aimed at lessening green house gas emissions.

XacBank operates in all 21 provinces and the capital city serving more than 500,000 customers through its 98 retail and business branches. It also has specialised banking outlets which include 400 AMAR mobile banking agents and 70 Savings and Credit Cooperatives. XacBank is Mongolia's largest microfinance institution, serving 21,000 microfinance clients.

Golomt Bank is also active in the development of the green economy.

6.4. INTERNATIONAL COOPERATION ORGANIZATIONS IN MONGOLIA

Mongolia became a member of the **World Bank Group** in February 1991. To date, the Bank has provided US\$578.7 million to Mongolia in loans and grants. The country has also received an additional US\$101.3 million from the global trust funds.

As of November 2012, there were 13 active World Bank-supported investment and Technical Assistance operations with US\$211.1 million in commitments, and 41 active Trust Funds in the portfolio with a total donor commitment of US\$67.4 million. The majority of the projects support infrastructure development, economic governance and institutional strengthening of the mining sector.

In addition to lending and grant operations, the World Bank also provides analytical and advisory services to Mongolia to support its medium- and long-term development objectives and capacity-building for the Government's reform strategy in key strategic directions.

The World Bank Group's Country Partnership Strategy (CPS) for Mongolia is aligned with the Comprehensive National Development Strategy for Mongolia. It thereby identifies three areas which the World Bank Group will support over the next five years :

1. Enhance Mongolia's capacity to manage the mining economy sustainably and transparently.
2. Build a sustained and diversified basis for economic growth and employment in urban and rural areas.
3. Address vulnerabilities through improved access to services and better service delivery, safety net provision, and improved disaster risk management.

Within the World Bank Group, the **International Finance Corporation (IFC)** seeks to provide equity and loan financing to private enterprises across all sectors in Mongolia, particularly in consumer goods and services, transportation and logistics, financial services, real estate and property management, and construction materials. IFC supports the development of Mongolian industries by directly investing in companies with high growth potential, helping to create jobs and raise incomes. Within the green economy space, the IFC invests in sectors such as transportation, clean and renewable energy, and cement manufacturing. These projects improve community welfare and create jobs while yielding profits for investors.

The **Asian Development Bank (ADB)** has been the Government's single largest source of official development financing. Between 1991 and 2011, Mongolia received loans for 45 projects from the ADB totaling US\$825.5 million. In addition, since 2007 when Mongolia became eligible for ADF grant financing, Mongolia has received grant projects totaling US\$172.2 million.

Based on its 2012- 2016 country partnership strategy (CPS) for Mongolia, the ADB will support the Government to achieve inclusive and sustainable growth. The ADB will assist the Government to generate and sustain employment by addressing priority infrastructure gaps, regional economic integration, and access to basic urban services. Second, the strategy will emphasize

social development, particularly access to education aimed at addressing a skills mismatch and efficiency delivered health services. Underlying the strategy will be an emphasis on capacity development, policy reform, and creating an enabling environment for PPPs.

The **United Nations Development Programme (UNDP)** opened its representative office in Ulaanbaatar in 1973 after more than a decade of successful cooperation with Mongolia. Ever since, UNDP has worked for equitable and sustainable development for the benefit of all Mongolians. UNDP is committed to helping the Government and people of Mongolia achieve its nine national MDGs as well as other national development priorities. UNDP's goal is to improve lives, especially the poorest and most vulnerable, and to work towards a future that offers equality, dignity and opportunity for all.

UNDP has three focus areas in Mongolia:

1. Poverty reduction;
2. Democratic governance;
3. Environment and energy.

The **European Bank for Reconstruction and Development (EBRD)** is very active in Mongolia, having conducted 55 projects from 2008 to 2012, a net business volume of €732 million and a total project value €2.3 billion. All these projects have been located in the private sector. The EBRDs projects in Mongolia have focused on financial institutions, property, retail, beverage production and mining. The EBRD provided funding for the development of the first successfully financed renewable energy project and the first privately owned generator in Mongolia, the Salkhit wind farm.

The Bank seeks to align its operations with the priorities of the Mongolian Government and will cooperate closely with other international financial institutions and multilateral and bilateral partners, including the European Union. The key challenges and strategic orientations for the strategy are:

- Promoting diversification through support for non-resource sectors;
- Promoting sustainable growth through broadening access to finance;
- Promoting responsible mining and strengthening governance institutions; and

- Modernizing infrastructure and bringing in the private sector.¹⁰⁹

The **Global Green Growth Institute (GGGI)** is also highly active in Mongolia. In November 2011, GGGI and the Ministry of Environment and Green Development signed an MoU for the cooperative pursuit of green growth. Then on June 9, 2013 Mongolia signed the "Agreement on the Establishment of the Global Green Growth Institute" and became the 19th Member State of the GGGI. GGGI aims to assist the Mongolian Government in developing and implementing national green growth plans, with a top-down strategic approach. At the same, it also promotes sectoral green growth strategies that are tailored to specific needs with a bottom-up practical approach. Mongolia's representative to GGGI is Minister Oyun.S.

As mentioned in Chapter 3, GGGI has completed two research projects since 2012 that relate to the green economy in Mongolia: Strategies for Green Public Transport in Mongolia and Strategies for Development of Green Energy Systems in Mongolia. GGGI is also planning research into green initiatives in the mining, construction and agriculture sectors. GGGI will be an important partner for the PAGE initiative in Mongolia.

The **GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit)** has been represented in Mongolia since 1991 and established its own office in Ulaanbaatar in 1998. Their aim is to improve the economic environment and thus indirectly help reduce poverty. GIZ is working in four key policy areas, with seven programmes in total, all of which are relevant to PAGE objectives. These policy areas and programmes are:

- Sustainable infrastructure: Efficiency of grid-based energy supply schemes and social development;
- Reform of the health insurance system;
- Environment and climate change, biodiversity and the adaptation of key forest ecosystems to climate change, integrated urban development;
- Economic development and employment: consolidating the legal framework for sustainable economic development, the Integrated Mineral Resources Initiative, and Regional economic development.

The **U.S. Agency for International Development (USAID)** plays a lead role in providing bilateral American assistance to Mongolia. The programme emphasises two main themes:

- Increased Opportunities for Inclusive Growth; and
- More Effective and Accountable Governance.

Total USAID assistance provided from 1991 through 2010 has exceeded US\$200 million in grants. The programme is managed by a nine-person USAID Mission based at the American Embassy in Ulaanbaatar. Specific projects are implemented through a network of contractors and grantees in cooperation with both public and private sector Mongolian partners.

The US also provides aid to Mongolia through its **Millennium Challenge Account (MCA)**, a compact to provide aid through grants. The MCA for Mongolia was established in October 2007 by an agreement that was signed between the Mongolian and US Governments. It provided a five-year contribution of around US\$285 million for Mongolia to reduce poverty through economic growth. This programme targets six-sectors of society: property rights, urban rangeland, vocational education, health, road, and energy efficiency.

The **Swiss Agency for Development and Cooperation (SDC)** has provided support to Mongolia through humanitarian aid since 2002. The SDC's programme has shifted to backing long-term development cooperation. According to the cooperation strategy for 2007-2012, the specific SDC contributions are aligned with respective country outcomes. The priorities are:

1. Improved legal framework and implementation capacities for management and monitoring of natural resources at the herders and at the national level;
2. Strengthened resilience of herders to vulnerabilities in the livestock sector and improved disaster preparedness and environmental stewardship;
3. Increased income of herders and ex-herders in targets areas based on improved productivity of their livestock and income diversification; and
4. Deepened Swiss-Mongolian relations.

This support is particularly located in the rural areas of Western Mongolia. The SDC's programme in Mongolia is scheduled for around 10 years, with a financial

contribution of CHF5-10 million a year. Switzerland is committed to support Mongolia with about CHF40 million over the next five years.

The **European Union** has been supporting Mongolia in its efforts towards a more environmental-friendly, energy-efficient and sustainable development through its SWITCH-Asia Programme that promotes sustainable consumption and production (SCP) with a focus on small and medium sized enterprises.

In the framework of this Programme, starting from 2009 the following three projects have been implemented.

1. "Green products" supported the development of green products and of eco-labelling for locally produced products so to strengthen national standards on sustainability, improve production quality while reducing their negative environmental impacts.
2. The "Sheep wool for building material" project has been contributing to the development of a sustainable supply chain of sheep wool building insulation as a green, environmentally-friendly, innovative product improving resource efficiency, contributing to poverty reduction, economic development and reducing air pollution and greenhouse gas emissions.
3. The "Greener construction" project seeks to reduce the environmental impact of the ongoing construction boom in Mongolia, promote SCP patterns and behaviour in the Mongolian construction industry by mobilizing the private sectors along with relevant public sectors authorities to develop construction products using fly ash and by advocating for the use of green construction products and practices.

The **Japanese International Cooperation Agency (JICA)** has been supporting Mongolia since 1990, and the JICA Mongolia office was established in 1997. JICA has three priority areas for Mongolia:

- Sustainable development of the mining sector and enhancement of Government including: Sustainable mineral resources development, and Enhancement of governance for appropriate management of minerals revenue and macro-economy;
- Assisting inclusive growth: including expansion of job opportunities and diversification of industries, and improvement of basic social services;

- Enhancement of the capacity and function of Ulaanbaatar as an urban center; and
- Improvement of infrastructure, urban planning and management.

The **Korean International Cooperation Agency (KOICA)** also provides development grants in Mongolia, including for water infrastructure development. Its country strategy and objectives, however, are not as transparent as other aid agencies present in the country.

The **Australian Agency for International Development (AusAID)** has a strong presence in Mongolia. Australia's assistance aims to promote a well-governed, economically resilient and equitable Mongolia.

Australia's assistance to Mongolia is focused on three priority themes:

1. Human resource development: building the leadership base of the public and private sectors through Australia Awards.
2. Mining for development: strengthening governance in the mining sector to help ensure mining revenues are equitably distributed, and the social and environmental impacts of mining are effectively managed.
3. Supporting vulnerable communities: improving water, sanitation and hygiene facilities for disadvantaged rural children to prevent illness among students, teachers and the community more broadly.

Australia has invested US\$29.6 million in Mongolia over the previous three years, and provided US\$14.6 million in development assistance to Mongolia in 2012–13.

In 2012–13, AusAID:

- support 38 masters-level students to study in Australia in 2012–13 through Australia Awards in Mongolia to meet critical human resource needs;
- partnered with UNICEF to improve water and sanitation facilities for 7,800 disadvantaged rural children in northwest Mongolia, improving health outcomes and contributing to increased school attendance rates;
- support local authorities to manage groundwater resources in the Southern Gobi region, a key mining

area that is also home to communities of pastoral nomads; and

- design a programme to support sustainable mining development to boost overall economic development.

6.5. NON-GOVERNMENTAL ORGANIZATIONS

Since its founding in 1951, the **Nature Conservancy** has become the leading conservation organization working around the world to protect ecologically important lands and waters for nature and people. The organization has around one million members.

The **World Wide Fund (WWF) for Nature** is also active in Mongolia. It works in the following areas: target species conservation, freshwater ecosystem conservation, education for sustainable development, protected area management and responsible mining.

7. A WAY FORWARD: PRIORITY WORK STREAMS AND ACTIONS UNDER PAGE

Mongolia would benefit greatly from a long-term strategic policy document as observed during the study. The previous chapters outlined why it is important for Mongolia to pursue an ambitious green development strategy. In summary, Mongolia has a range of economic, social and environmental problems, and finding a balance between economic development and sustainability will alleviate these pressures.

Although the Government, non-government organizations and international organizations are funding a range of projects that will assist in developing the green economy, these projects are not coordinated by an overarching strategy. The Government's GDS provides such a strategy that if executed successfully will put the country on a path of sustainable development under specific pre-determined goals.

The PAGE project provides an opportunity for assistance from the international community to implement the GDS. However, exactly how PAGE partners will assist in this development remains unclear. This chapter helps to address this uncertainty by outlining current knowledge gaps, priority sectors for PAGE partners to focus on, key actors to engage in the PAGE process and our recommendations regarding a way forward for the GDS in Mongolia.

7.1. KNOWLEDGE GAPS AND DATA

There are a number of knowledge gaps regarding the key economic, social and environmental challenges in Mongolia, as well as the programmes and policies designed to tackle these challenges. These are areas where the PAGE project could assist in resolving.

For instance, there are differences in the level of knowledge and understanding of green economy among the Government, business community and the general public. Due to lack of knowledge and understanding, utilising efficient usage of resources, recycling and environmentally-friendly activities are

often neglected. Therefore, it would be useful to promote new perceptions and knowledge. Another example would be that environmental challenges are often cited in association with mining only. A broader array of activities and efficient methodologies would be useful.

Businesses usually aim to minimise marginal costs and increase their profit within a short time period. At the same time, diverting this attention into more long term sustainable development goals through more efficient would help increase corporate social responsibility. Therefore it should be a collaborative effort with participation from the Government, business and other stakeholders alike.

Some of the biggest knowledge gaps relate to environmental research. There has been significant research conducted on the state of Mongolia's environmental problems, with one report on the country's environment concluding that "the information base for effective environmental protection and management in Mongolia is adequate."¹¹⁰ However, a number of stakeholders we interviewed felt that critical information in many areas is still lacking.

Knowledge gaps are particularly evident for the sustainability of Mongolia's water supply, particularly groundwater. A representative from the World Bank stated in an interview that there are some uncertainties over the concerns whether groundwater can sustain longer-term water needs in vulnerable areas, further resource and demand assessments need to be conducted to build a sophisticated knowledge and achieve effective water resource management and planning.¹¹¹

There are also considerable knowledge gaps for the damage caused by mining. Although the Minerals Authority records how much land has been affected by mining, there are limited records regarding the extent of damage and what levels of rehabilitation are required. Moreover, the research and data that has been collected in regards to these problems is often incomplete and difficult to locate or unavailable.

Other experts voiced concern over knowledge gaps regarding the impact of unsustainable animal herding practices and what affect climate change is likely to have on Mongolia.

The PAGE project will need to support the Government and research institutions in their research and data collection, and in making their research and data publically available. Accurate data will be important for monitoring the goals specified under the GoM's Green Development Strategy.

In addition, there are considerable knowledge gaps as to the effectiveness of current programmes and policies on resolving the challenges. For instance, little is known about many new Government initiatives and strategies, such as the green mining strategy or the Government's new ecotourism strategy. Hopefully, these will become clearer once these initiatives are publically released. Also, the monitoring and evaluation of existing programmes, particularly those of the GoM, is often inadequate and opaque. For instance, detailed information on the expenditure of the GoM's Clean Air Fund was unavailable, and many question its efficacy.

The investments required for developing the green economy in Mongolia is also unclear. For example, the renewable energy sector has great potential. But there have been few feasibility studies conducted for specific projects. More work is needed into what level of investment is required to develop the green economy.

7.2. PRIORITY SECTORS

The key priority sectors of the green economy in Mongolia are: **agriculture and renewable energy**. Although other sectors such as transport, waste treatment and tourism will be important for Mongolia's green development, agriculture is the largest economic sectors in Mongolia while renewable energy has considerable potential for Mongolia's future.

The agricultural sector is critical for Mongolia's future given it provides employment for 35 per cent of Mongolia and holds major cultural significance. Sustainably managing agriculture given land degradation, increasingly volatile water supply and climate change will be critical for a green economy. Although there are many existing initiatives in the

agricultural sector, better coordination of current programmes and improved monitoring and evaluation is needed.

There is considerable potential in developing the renewable energy sector in Mongolia, particularly wind and solar. As companies and countries search for low carbon electricity, renewable energy could become an import-export for the country. The Salkhit wind farm demonstrates that large-scale renewable energy projects in Mongolia can succeed. With further investment and support from international partners, it will grow into an important sector for Mongolia.

Due to economic development and cold winters, demand for energy is expected to increase significantly in the future. Combined with the diversification of Mongolia's energy sector policy, it is important to increase the contribution of renewable energy and low carbon emission technologies.

7.3. KEY ACTORS AND STAKEHOLDERS TO ENGAGE IN THE PAGE PROCESS

The GoM has already developed some of the necessary laws and programmes to steer Mongolia in a green path. There have been steps towards developing a less damaging mining sector and a more environmentally-friendly and productive agricultural sector. The 100,000 Solar Ger project was a big success, while The Law on Renewable Energy (2007) created the necessary incentives for development of the wind-farm, and the possibility of further renewable energy.

While the Government's measures so far will improve the county's green credentials in investors' eyes and contribute to reducing carbon emissions, it needs to develop a wide-ranging set of subsidies and incentives to get business leaders and the public on board.

The Government action plans sometimes turn out to be "dream goals" which are not fully achievable. On the other hand, incentives and penalty for damages caused by businesses should be clearly stated and monitored. Similar to the success of "formalising" small-scale artisanal mining activities, introducing initiatives in other sectors should be efficient.

In an effort to address the country's environmental problems, fulfill its Rio+20 commitments and set Mongolia's economy on a sustainable path, the GoM is seeking to pursue a green development strategy. The GDS was considered by Parliament in the 2013 autumn session, but has not yet been passed into law. If passed, this document will provide goals and benchmarks for Mongolia to progress towards green development. Therefore the Government and particularly the Ministry of Environment and Green Development will be a crucial partner for the PAGE project.

However, the Government is not the only area leading the push towards green development. Elements of the private sector recognise the importance of the green economy and are also seeking a path toward green development.

An important business lobby group, the Mongolian National Chamber of Commerce and Industry, is pursuing its own green strategy, the "5x20" goals, while the Business Council of Mongolia has its own "Environmental working group" as one of its five permanent working groups. Banks such as XacBank and Golomt bank are pursuing strategies for green loans and investment because it makes good business sense. Companies, such as Newcom, are developing green energy sources.

Meanwhile, international organizations such as the World Bank, the ADB and the EBRD, are providing funding for environmental projects to address air pollution and water management, plus lending to support renewable energy infrastructure. NGOs, such as the Nature Conservancy and the World Wildlife Fund, are also establishing their own environmental projects and lobbying Government.

7.4. RECOMMENDATIONS FOR THE PAGE PROJECT

PAGE's technical assistance will have an invaluable importance to the successful passage and implementation of the Government GDS. The EPCRC has found five key areas to focus within the PAGE project. These are:

1. To support the National Green Development Strategy and its implementation as a long-term national programme. Consequently, the activities and action plan of the current Government and the

subsequent governments should be in line with this strategic document.

2. This strategic programme should not be implemented by only one ministry. It should rather be a cooperative effort. Facilitation should be organised, with broad-based consultations on setting realistic priority targets based on the existing documents and strategies and a comprehensive study of existing programmes and initiatives.
3. To help assess the adequacy and appropriateness of the existing investments and commitments that may contribute to the selected targets and to help identify policy actions required to induce investments and enhance the effectiveness of these investments.
4. To help improve training and awareness of green economy aimed at tackling the knowledge gaps.
5. To introduce and supporting new and advanced technologies, green initiatives and best practices from other countries.

In order to achieve these goals, there are five areas of actions the EPCRC recommends the PAGE partners should pursue. These are:

1. To facilitate broad-based consultations on setting realistic priority targets based on the existing documents and strategies should be.

There is a risk that the MEGD's Green Development Strategy will not lead to any fundamental change for Mongolia, even if the strategy is approved by Parliament. For example, Mongolians Law on Science and Technology (2006) mandated that 1.5 per cent of GDP be spent on research and development. However, it is suspected that Mongolia is currently nowhere near that target. This is because there appears to be no mechanism for monitoring or enforcing the action plan.

It seems the MEGD has not undertaken the necessary consultation with other key ministries that will provide the strategy with 'teeth'.

It is important for the MEGD and the PAGE partners to build consensus amongst the other crucial ministries. This includes the Ministry of Mining, the Ministry of Energy and the Ministry of Industry and Agriculture on how to pursue this strategy for green development. Each ministry must have a realistic action plan to implement the green development strategy. If there are



goals or targets in the strategy that certain Ministries do not agree with, these will need to be developed through compromise.

Furthermore, it is important that the targets included in the plan are realistic and on the day-to-day issues of Mongolians, not just focused on reducing greenhouse gases. In other words, it should not be pursuing technologies that are only green, whether wind or solar power.

As well as setting goals, the PAGE project needs to focus on strategies that will support Mongolian industries to develop their own technologies within its manufacturing base so that the private sector can use them in developing demand-driven solutions to the environmental problems.

2. Providing coordination and focus for domestic and internationally funded environmental, social and economic development projects.

There needs to be improved coordination of projects in Mongolia for the development of the green economy. This includes projects that promote green investment, green jobs and environmental projects. For Mongolia's size, there are incredible number of development agencies with active development and environmental projects in Mongolia. These projects are often in line with the objectives of the CND and the Mongolia's four-year Government plan. However, while individually these projects align with various goals, increased coordination could provide a

mutually beneficial impact for environment projects and increase their influence.

There also needs to be an increased focus on addressing causes of green development problems rather than the symptoms. For example, efforts to move people from gers into apartments, or to develop regional areas of Mongolia so that people are not forced to move into urban areas, will be far more effective in the long-term than simply reducing pollution from ger stoves.

However, it is recognised that this is not always easy. For example, land degradation has been at least partly due to an increasing number of livestock and herding, a facet of Mongolian culture for thousands of years. Tortell (2008) notes that "addressing the cause is not always easy or straightforward because of root causes that mitigate against these projects' success. If the root causes can be removed, the solutions are more likely to survive on a sustainable basis."¹¹²

An increased effort to steer projects funded by international donors towards green development would help to address this focus on addressing symptoms. This coordination role seems like a critical job for the new Ministry of Economic Development. The MED already has been given oversight of all the international development lending and grants for Mongolia.

Generally speaking, the current and the past governments of Mongolia collectively lack continuity of actions and policies. On the other hand, decisions

are made without being researched sufficiently and coherency among various studies is poor. These may be indicators of poor governance.

3. To help assess the adequacy and appropriateness of the existing investments and commitments that may contribute to the selected targets.

There are a number of development projects that the Government of Mongolia are planning that may contribute towards further environmental problems. The PAGE project needs to assist with assessing the direction of these projects and to help to modify them if necessary.

For example, the Sainshand Industrial Project is designed to introduce advanced processing technology and industry-leading techniques that will increase the competitiveness of Mongolian industry. However, many of the developments at the park are largely fossil fuel producing. Assisting to change the direction of the industrial park to include more green-focused industries, such as solar panel production, would be an important step towards green development.

4. To help identify resources to fill any investment gaps.

There has been significant research conducted on the state of Mongolia's environment problems. Tortell et al. (2008) concluded that "the information based for effective environmental protection and Management in Mongolia is adequate."

However, a number of stakeholders we spoke to for this report felt that critical information about Mongolia's water supply, the actual impact of mining and the impact of grazing were still unclear. In its development of the green economy, the PAGE project may need to fund additional research into these areas.

Supporting technical assistance and advisory to develop environmentally friendly energy efficient technologies will also be an important aspect of the PAGE project. For example, the MNCCI's programmes for action of the green economy are worthy of support by the PAGE project. The MNCCI has business connections across all the aims of Mongolia and will be a crucial partner in promoting green business.

PAGE could also support the MNCCI in translating manuals and material on energy efficiency as well as supporting the MNCCI's efforts to train the Government agencies and the public on climate change issues and international commitments.

PAGE may also be able to support technical assistance and advisory studies. In the future, Mongolian businesses will see that they can do things and save energy. But the gap for many businesses revolve over financing and the ability to develop it.

Stakeholders also suggested the importance of the PAGE project supporting feasibility studies for environmental and energy efficient infrastructure. Although there have been a lot of feasibility studies into green energy developments, stakeholders expressed that few of them have been good enough to use for fund-raising purposes.

5. To assess policies required to induce the investments and enhance the effectiveness of these investments.

It is unclear whether the GoM's proposed Green Development Strategy, its regime of green development policies and new policies will be effective towards developing the green economy. The PAGE partners will need to assist the GoM in assessing these policies to ensure they are effective and achieve their intended goals.

6. To support promotion and awareness aimed at reducing adverse effects of climate change and mining based economic activities, which would lead to easing unbalanced migration to urban areas.

Harsh weather conditions, such as desertification, water scarcity, and dzud, leads to loss of livestock and the herders' migration to the capital city. On the other hand, the herders face health and environmental problems such as air pollution, water pollution and ever shrinking pastureland.

The adverse effects of mining activities vary considerably among businesses due to the scale of the project, social responsibility practices and their operations. General regulation and monitoring is often not very efficient due to unclear legislation and uncertainty. Therefore, green development guidelines

for businesses operating in the countryside may benefit from including:

- Guidelines to take preventive actions against possible natural hazards;
- Recommendations and information to alleviate damages and adverse effects; and
- Policies and regulations related to rehabilitation.

Furthermore, many Mongolians are migrating to the urban areas looking for more economic opportunities. As mentioned earlier, there exists a significant inequality between the urban and rural areas. For example, while almost all people living in the cities have access to clean water, only 53 per cent of the

rural population has access to clean water from proper resources. Hence, it is important for Mongolia to focus on:

- Equal opportunities for everybody regardless of their geographical location;
- Better opportunities for decent work for targeted groups;
- Special policies and programmes aimed at aiding the migration population; and
- City planning and urbanisation.

REFERENCES

- ADB (2005). *Country Environmental Analysis for Mongolia, November 2005*.
- ADB (2008). *Transport and Trade Facilitation – Potential for Better Synergies in Mongolia*. Operations Evaluation Department, Ulaanbaatar Mongolia, July 2008.
- ADB (2012). *Asian Development Outlook 2012: Confronting rising inequality in Asia*. p.47.
- Aldrich & Melville. (2012). *Revision of Environmental Laws in Mongolia and its impact on the mining sector*, 8 October 2012, Hogan-Lovells Website. URL: <http://www.hoganlovells.com/revision-of-environmental-laws-in-mongolia-and-its-impact-on-the-mining-sector-10-08-2012/>.
- Altantuya, D., Zhongrui, Z., Li & H. (2012). *Municipal solid waste management of Mongolia: Analysis on the solid waste treatment of Ulaanbaatar city*. Advances in Asian Social Science (AASS) Vol. 3, No. 3 2012.
- Asia Pacific Observatory on Health Systems and Policies. (2013). *Mongolia Health System Review, Vol. 3, No. 2*.
- AusAID (2013). *Groundwater Management in Southern Mongolia*, Mongolia. URL: <http://www.ausaid.gov.au/countries/eastasia/mongolia/Pages/economic-development-init-1.aspx>.
- Badraa, M., Sanjaaruen, M., & Munkhgerel, A. (2012). *Mid-term evaluation of Building Energy Efficiency Project, Ulaanbaatar 2012*.
- Bank of Mongolia (2013). Орон сууцны ипотекийн санхүүжилтийн тогтвортой тогтолцоог бий болгох хөтөлбөрийн хэрэгжилтийн мэдээ. URL: http://www.mongolbank.mn/ipotek_statistic.aspx?id=2_43.
- Bayartogtokh, B. (2013). *The Beginning and End of Mortgages*. Mongolian Economy Magazine, No. 15, August 2013.
- Bekhbayar, D. (2013). *We have Even Further Dreams*. Mongolian Economy Magazine, No. 13, July 2013.
- Business-Mongolia.com (2011). *S.Demberel becomes member of Civil Will Party*, 28 October 2011. URL: <http://www.business-mongolia.com/mongolia/2011/10/28/s-demberel-becomes-member-of-civil-will-party/>.
- Choibalsan, N. (1998). *Characteristics of Permafrost and Foundation Design in Mongolia*, Permafrost – Seventh International Conference (Proceedings), Collection Nordicana no 55.
- Climatemps.com (2013) *Average Temperatures in Ulan-Bator/ Ulaanbaatar, Mongolia*. URL: <http://www.mongolia.climatemps.com/temperatures.php>.
- Dari (2014). *Mongolian first vehicle manufacturer opens*, UB Post, 16 January 2014.
- Darinchuluun, B. (2011). *Brief Evaluation Report on MDGs-Based Comprehensive National Development Strategy (CNDs) of Mongolia, 12.09.2011*, Cabinet Secretariat, Government of Mongolia.
- Economic Policy and Competitiveness Research Center. (2012). *Mongolia in World Competitiveness 2012*, Ulaanbaatar, Mongolia.
- ECSR-Net (2012). Joint Press Release: *Mining and Communities: Mongolian herders complain against Rio Tinto over Oyu Tolgoi mines*, 12 October 2012. URL: <http://www.escri-net.org/node/365339>.
- Edwards, T. (2013). *Mine-dependent Mongolia to push renewables as climate change bites –president*, June 5 2013, Reuters, Ulaanbaatar.
- Embassy of the United States, Ulaanbaatar, Mongolia (2012). *USAID partners with GIZ to Reduce Greenhouse Emissions in Mongolia*, Press Releases, May 4, 2012.
- European Bank for Reconstruction and Development (2013). *Salkhit, Mongolia's first wind farm, starts producing electricity*. 20 June 2013.
- Fisher, B. Tuvshintugs, B, Gurney, A., Ragchaasuren G., Begg, M., Buyantsogt, Bat, Esmedekh, L. & Chadraaval, B. (2011). *The development of the Oyu Tolgoi copper mine: an assessment of the macroeconomic consequences for Mongolia*, BAE Report, Canberra.
- Government of Mongolia (2008). *Resolution of the Government of Mongolia, 12 February 2008, Endorsement of the Millennium Development Goals (MDGs)-based Comprehensive National Development Strategy of Mongolia*. URL: http://mofo.gov.mn/coordination/images/stories/resource_docs/nds_approved_eng.pdf.
- Government of Mongolia (2012). *Resolution of the Government of Mongolia #193, 22nd December 2012 List of Equipment and Raw Materials for Import Duty Exempt and Value Added Tax Exempt for Small and Medium Enterprises*.

- Government of Mongolia (2013). *Draft, Annex 1 of Resolution, Green Development Concept*.
- Government of Mongolia (2013). *Draft, Annex 2 of Resolution, Mid-Term Green Development Programme*.
- Hilker, T., Natsagdorj, E., Waring, R.H., Lyapustin, A.I., Wang, Y. (2013). *Satellite observed widespread decline in Mongolian grasslands largely due to overgrazing*. Global Change Biology.
- Humber, Y. (2013). *Mongolia to Sell Up to US\$1 Billion in Samurai Bonds, Premier Says*, Bloomberg, September 15, 2013.
- InfoMongolia (2011). *Koica to reinstall the water pipeline system in Ulaanbaatar*, November 3 2011.
- InfoMongolia (2013). *Gal Undesten Movement Members who Threatened with Grenades and Firearms were arrested*, September 16 2013. URL: <http://www.infomongolia.com/ct/ci/6693>.
- InfoMongolia (2013). *As of today, US\$347 million is left from the "Chinggis" bond, said Premier Altankhuyag*. URL: <http://www.infomongolia.com/ct/ci/6020>.
- InfoMongolia (2013). *The SME Development Programme was introduced to donor organizations in Mongolia*. November 29, 2013. <http://www.infomongolia.com/ct/ci/7085#>.
- International Monetary Fund (2013), *World Economic Outlook*, October 2013.
- Jacob, P. (2013). *Mongolia: New Heating Technology Struggles to Combat Pollution Scourge*, Eurasianet.org, March 8, 2013.
- Kang, J. (2013) *GGGI Mongolia Country Programme*, GGGI Presentation to PAGE Workshops.
- Khuder, B. (2012) *Law on Social Welfare Revised Beneficial for Many*, January 23, 2012 Mongolian Daily Economic Update. URL: <http://www.mongoliaeconomy.com/law-on-social-welfare-revised-beneficial-for-many/>.
- Khuder, B. (2013). *Mongolia to have policy on Green Development*, Friday, Jul 05 2013. Montsame News Agency, URL: <http://www.montsame.gov.mn/en/index.php/politics/item/1378-mongolia-to-have-policy-on-green-development>.
- Kohn, M. (2013). *Severely Polluted Mongolia Tries a Cleaner Power Source*, New York Times, December 3, 2012.
- Liu, YY. Evans, JP. McCabe, MF. de Jeu, RAM. van Dijk, AIJM. et al. (2013) *Changing Climate and Overgrazing Are Decimating Mongolian Steppes*. PLoS ONE 8(2): e57599.
- Marshall R, Nixson F & Walters B. (2008). *Tracking economic policy and poverty outcomes in Mongolia*, February 2008, BWPI Working Paper 27.
- Ministry of Foreign Affairs, Mongolia (2009). *National Mongolian Livestock Programme (Draft)*. <http://www.mofa.gov.mn/mn/images/stories/busad/mmeng.pdf>.
- Mineral Resources Authority (2013). *Statistical News of Mining Sector*, August 2013. URL: www.mram.gov.au.
- Ministry of Foreign Affairs, Mongolia(2010). *Government policy towards herders* translation.
- Mining Mongolia Exhibition Website (2013). URL: <http://www.miningandconstructionmongolia.com/en/index.asp>.
- Mongolian Air Pollution Project (2013). URL: <http://www.indiegogo.com/projects/mongolian-air-pollution-project>.
- Mongolian National Chamber of Commerce and Industry (MNCCI) (2012). *Green paper: From Brown to Green Economy*, Ulaanbaatar Mongolia 2013.
- National Statistical Office of Mongolia. (2010). *The 2010 Housing and Population Census of Mongolia*. URL: <http://www.toollogo2010.mn/index.php?language=en>.
- National Statistical Office of Mongolia. (2013). *Monthly Bulletin of Statistics*. URL: <http://www.nso.mn/v3/index2.php>.
- National Statistical Office of Mongolia. (2013). *1212 Database*, <http://www.1212.mn/en/>.
- Purejav, Bolormaa (2011). *Artisanal and Small-Scale Mining: Gender and Sustainable Livelihoods in Mongolia*, Chapter 11 of *Gendering the Field: Towards Sustainable Livelihoods for Mining Communities*, edited by Kuntala Lahiri-Dutt. Canberra: Asia-Pacific Environment Monograph 6. Published by ANU E Press. The Australian National University.
- Shari, M. (2012). *Salon: Alisher Ali*, Mongolian Growth, Global Finance May 2012. URL: <http://www.gfmag.com/archives/153-may-2012/11751-salon-alisher-ali-mongolian-growth.html#axzz2giPXuTVm>.
- Swiss Agency for Cooperation and Development (2013). *Sustainable Artisanal Mining Project*. <http://www.sam.mn/>.
- Tortell, P., Borjigidhkan, A. & Naidansuren, E. (2008). *Institutional Structures for Environmental Management in Mongolia*, Ulaanbaatar and Welling, August 2008.
- Tovuudorj, P. (2013). *Mongolian National Energy Agenda and Policy Measures: Scope for subregion cooperation*, Presentation to Senior Officials Committee on Energy Cooperation in Northeast Asia Eighth Session 10-11, April 2013, Ulaanbaatar.

- Tsenddavaa, A. (2010). *Employment and social welfare policies and programmes of Mongolia*, For Conference Skills development in the Post-Crisis Context 28 – 30 September 2010, Tokyo.
- UB Post (2013). *Ministry reports reduction in air pollution*. URL: <http://ubpost.mongolnews.mn/?p=6578>.
- UNIDO (2014). *Making It Magazine. Mongolia: looking to diversify*. URL: <http://www.makingitmagazine.net/?p=8446>.
- United Nations Environment Programme (2001), *Mongolia: State of the Environment*. UNEP Regional Resource Center for Asia and the Pacific, Thailand.
- United Nations Development Programme, Mongolia (2012a). *Building Energy Efficiency*.
- United Nations Development Programme, Mongolia (2012b). *Mongolia's Sustainable Development Agenda: Progresses, Bottlenecks and Vision for the Future*, Ulaanbaatar 2012.
- United Nations Development Programme, Mongolia (2012c). *Strengthening Environmental Governance in Mongolia, Phase II*, UNDP/UNEP Joint Project Document Website URL: <http://www.undp.mn/snrm-segm.html>.
- United Nations Development Programme, Mongolia (2013a). *About Mongolia*. URL: <http://www.undp.org/content/mongolia/en/home/countryinfo/>.
- United Nations Development Programme (2013b). *Mongolia: HDI values and rank changes in the 2013 Human Development Report* URL: <http://hdrstats.undp.org/images/explanations/MNG.pdf>.
- United Nations Environment Programme (2013c). *What is the Green Economy?* URL: <http://www.unep.org/greeneconomy/AboutGEI/WhatIsGEI/tabid/29784/language/en-US/Default.aspx>.
- Watts, B (2003). *Mongolia's hard times*. The Magazine of the International Red Cross and Crescent Movement, Volume 1, 2003. URL: http://www.redcross.int/EN/mag/magazine2003_1/20-21.html.
- World Bank (2003). *Mongolian Forestry Sector Review*.
- World Bank (2011). *Air Quality Analysis of Ulaanbaatar: Improving Air Quality to Reduce Health Impacts*, December 2011, The World Bank.
- World Bank (2012). *Environment in East Asia and Pacific, Mongolian Environment Overview*, World Bank Website. URL: <http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/EASTASIAPACIFICEXT/EXTAPREGTOPENVIRONMENT/0,,contentMDK:20266325~menuPK:537827~pagePK:34004173~piPK:34003707~theSitePK:502886,00.html>.
- World Bank (2012). *Environment in East Asia and Pacific, Netherlands-Mongolia Trust Fund for Environmental Reform (NEMO)*, World Bank Website. URL: <http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/EASTASIAPACIFICEXT/EXTAPREGTOPENVIRONMENT/0,,contentMDK:21080050~pagePK:34004173~piPK:34003707~theSitePK:502886,00.html>.
- World Bank (2012). *Projects and Operations, Ulaanbaatar Clean Air Project*. Website URL: <http://www.worldbank.org/projects/P122320/ulaanbaatar-clean-air-project?lang=en>.
- World Bank (2013). *Country and Lending Groups*. URL: <http://data.worldbank.org/about/country-classifications/country-and-lending-groups>.
- World Bank (2013). *Data, Mongolia*. The World Bank Group. URL: <http://data.worldbank.org/country/mongolia>.
- World Bank (2013). *Mongolia: Gender Disparities in Labour Markets and Policy Suggestions*.
- World Bank (2013). *Mongolia: Portable Solar Power for Nomadic Herders*, April 8, 2013. URL: <http://www.worldbank.org/en/results/2013/04/08/portable-solar-power-for-nomadic-herders>.
- World Bank (2013). *Mongolian Economic Update*, November 2013.
- World Bank (2013). *Poverty Rate Came Down to 27.4 Percent in 2012*, May 21, 2013. URL: <http://www.worldbank.org/en/news/press-release/2013/05/21/poverty-rate-came-down-to-27-4-percent-in-2012>.
- World Health Organization (2012). *Government Platform 2012-2016*, Unofficial translation. http://www.wpro.who.int/countries/mng/mongolia_government_action_plan_2012-16.pdf.
- World Health Organization (2013). *Database: outdoor air pollution in cities*. URL: http://www.who.int/phe/health_topics/outdoorair/databases/en/index.html.
- World Health Organization and UNICEF (2013). *Progress on sanitation and drinking-water - 2013 update*. WHO Press, World Health Organization, Geneva, Switzerland.
- Zoljargal, M. (2013). *Desertification affects 77 per cent of Mongolian territory*. UB Post, September 20, 2013. URL: <http://ubpost.mongolnews.mn/?p=610>.
- Zoljargal, M. (2013). *Ulaanbaatar might run out of water by 2015*, UB Post, Friday, March 22nd, 2013.

NOTES

¹ Tortell et al. (2008). Institutional Structures for Environmental Management in Mongolia. p.10

² Ibid.

³ Arable land is defined by the Food and Agriculture Organization as land currently used to grow crops or suitable for growing crops.

⁴ Choibalsan, N. (1998). Characteristics of Permafrost and Foundation Design in Mongolia

⁵ Climatemps.com (2013) Average Temperatures in Ulan-Bator, Ulaanbaatar, Mongolia.

⁶ Tortell et al. (2008). Institutional Structures for Environmental Management in Mongolia.

⁷ Ibid, p. 11.

⁸ National Statistical Office (2013). 1212 Database.

⁹ National Statistical Office (2013). 1212 Database.

¹⁰ Ibid.

¹¹ National Statistical Office (2013). 1212 Database.

¹² Ibid.

¹³ International Monetary Fund (2013), World Economic Outlook, October 2013

¹⁴ Ibid.

¹⁵ World Bank (2013). Country and Lending Groups

¹⁶ World Bank (2013). Poverty Rate Came Down to 27.4 Percent in 2012. The poverty rate is based on a poverty line constructed from the 2010 Household Socio-Economic Survey data.

¹⁷ National Statistical Office (2013). 1212 Database.

¹⁸ World Bank (2013). November Eco Update, p.19

¹⁹ UNDP (2013). About Mongolia.

²⁰ Fisher, B. et al. (2011).

²¹ Mineral Resources Authority (2013). Statistical News of Mining Sector, August 2013.

²² Purevjav, Bolormaa (2011). Artisanal and Small-Scale Mining, Chapter 11, ANU.

²³ National Statistical Office (2013). 1212 Database.

NB: Analysts blame the introduction of the 2012 Strategic Entities Foreign Investment Law (SEFIL) for the slump in FDI, although the suspension of the 2nd stage of the Oyu Tolgoi mine is also responsible.

²⁴ Ibid.

²⁵ World Bank (2013). Mongolian Economic Update.

²⁶ EPCRC (2012), Mongolia in World Competitiveness

²⁷ ADB (2012). Asian Development Outlook 2012: Confronting rising inequality in Asia. p.47.

²⁸ World Bank (2013). Database.

²⁹ National Statistical Office (2013). 1212 Database.

³⁰ World Bank (2013) Mongolia: Gender Disparities...

³¹ UNDP (2013). Mongolia: HDI values and rank.

³² National Statistical Office (2013). 1212 Database.

³³ Asia Pacific Observatory on Health Systems and Policies. (2013). Mongolia Health System Review.

³⁴ UNDP (2013). Mongolia: HDI values and rank changes in the 2013 Human Development Report

³⁵ Tovuuudorj (2013). Mongolian National Energy Agenda and Policy Measures: Scope for subregion

³⁶ Khash-Erdene, B. (2013). Mongolia to be energy self-sufficient by 2014, says minister. UB Post.

³⁷ Statistical Yearbook, 2012, NSO

³⁸ Tovuuudorj, P (2013).

³⁹ Ibid.

⁴⁰ ADB (2008), Transport and Trade Facilitation.

⁴¹ WHO and UNICEF (2013). p.24

⁴² Ibid. p.25

⁴³ Altantuya, D et al. (2012).

⁴⁴ World Health Organization (2013). Database: outdoor air pollution in cities.

⁴⁵ World Bank (2011). Air Quality Analysis of UB.

⁴⁶ Kohn, M. (2013). Severely Polluted Mongolia Tries a Cleaner Power Source, New York Times, 2012

⁴⁷ Mongolian Air Pollution Project (2013).

⁴⁸ MNCCI (2012). Green paper: From Brown to Green Economy, Ulaanbaatar Mongolia 2013.

⁴⁹ World Bank (2013). Database, Mongolia.

⁵⁰ - (2012). 4,256 hectares abandoned land damaged by mining, News.mn, April 11, 2013. Unable to locate original source.

⁵¹ ECSR-Net (2012).

⁵² Mineral Resources Authority (2013). Statistical News of Mining Sector, August 2013.

⁵³ Zoljargal, M. (2013). Desertification affects 77 per cent of Mongolian territory. UB Post, September 20, 2013

⁵⁴ The decline of state enterprise employment in the 1990s doubled the number of herders.

⁵⁵ Liu et al (2013), p. 3

⁵⁶ World Bank (2013). Database, Mongolia.

⁵⁷ UNEP (2001), Mongolia: State of the Environment.

- ⁵⁸ World Bank (2003). Mongolian Forestry Review.
- ⁵⁹ Arena, A. (personal communication, January 21, 2013)
- ⁶⁰ World Bank (2010). Mongolia: Groundwater Assessment of the Southern Gobi Region, April 2010
- ⁶¹ UNEP (2013). What is the green economy?
- ⁶² Government of Mongolia (2008).
- ⁶³ Darinchuluun, B. (2011).
- ⁶⁴ World Health Organization (2012). Government Platform 2012-2016, Unofficial translation.
- ⁶⁵ Government of Mongolia (2013). Draft, Annex 1 of Resolution, Green Development Concept
- ⁶⁶ Government of Mongolia (2013). Draft, Annex 2 of Resolution, Mid-Term Green Development Programme
- ⁶⁷ Khuder (2013).
- ⁶⁸ Development Bank of Mongolia (2013).
- ⁶⁹ InfoMongolia (2013). As of today, 347 million....
- ⁷⁰ InfoMongolia (2013). The SME Development Programme was introduced to donor organizations...
- ⁷¹ Tovuuudorj, P. (2013). Mongolian National Energy Agenda and Policy Measures: Scope for subregion...
- ⁷² - (2103). MoU between Minister S. Oyun and Mayor E. Bat Uul.
- ⁷³ Bayartogtokh, B. (2013).
- ⁷⁴ Bank of Mongolia (2013).
- ⁷⁵ More detailed information was unavailable.
- ⁷⁶ Khuder, B. (2012).
- ⁷⁷ World Bank (2013) Mongolia: Gender Disparities...
- ⁷⁸ ADB (2005).
- ⁷⁹ Aldrich and Melville. (2012). Revision of Environmental Laws in Mongolia and its impact on the mining sector, 8 October 2012
- ⁸⁰ Ibid.
- ⁸¹ InfoMongolia (2013).
- ⁸² UNDP (2012).
- ⁸³ Government of Mongolia (2012).
- ⁸⁴ Tovuuudorj, P. (2013).
- ⁸⁵ Edwards, T. (2013).
- ⁸⁶ UBPost (2013).
- ⁸⁷ - (2012). 4,256 hectares abandoned land damaged by mining, News.mn, April 11, 2013.
- ⁸⁸ Ministry of Foreign Affairs, Mongolia (2010).
- ⁸⁹ Ministry of Foreign Affairs, Mongolia (2009).
- ⁹⁰ National Programme for Food Security (2009)
- ⁹¹ MNCCI (2012).
- ⁹² Badraa M., Sanjaasuren M. and Munkhgerel A (2012). Mid-term evaluation of Building Energy Efficiency Project, Ulaanbaatar 2012.
- ⁹³ Embassy of the United States, Mongolia (2012).
- ⁹⁴ EBRD (2013).
- ⁹⁵ Bekhbayar, D. (2013), p. 14
- ⁹⁶ EBRD (2013).
- ⁹⁷ World Bank (2013). Mongolia: Portable Solar Power for Nomadic Herders
- ⁹⁸ Kang, J. (2013) GGGI Mongolia Country Program, GGGI Presentation to PAGE Workshops.
- ⁹⁹ One of the key ger stove models was developed by the German Technical Cooperation (GTZ) in 2009. The stove includes insulating bricks to retain heat, and thus uses less fuel, and two air intake channels to raise the combustion temperature and cut emissions. The stoves can burn all types of fuel, even high quality semi-coke coal. The energy efficient stoves subsidized by the project use 20 per cent to 30 per cent less fuel, and emit 70 per cent to 90 per cent less pollution than traditional stoves. Ger blankets were designed by the United Nations Development Program but are produced locally in Mongolia. They are essentially large insulating covers composed of three separate layers that wrap the entire outside of the ger. The specialised insulation helps to keep heat within the ger and results in a 50 per cent reduction in fuel burned each month.
- ¹⁰⁰ Jacob P (2013). Mongolia: New Heating...
- ¹⁰¹ Mongolian Air Pollution Project (2013).
- ¹⁰² Asia Foundation (2013). Environment Programs in Mongolia Factsheet, November 2013.
- ¹⁰³ SDC (2013). Sustainable Artisanal Mining Project.
- ¹⁰⁴ World Bank (2013). Livestock and Agricultural Marketing Project
- ¹⁰⁵ UNDP (2013) Ecosystem-based Adaptation...
- ¹⁰⁶ InfoMongolia (2011). Koica to reinstall the water pipeline system in Ulaanbaatar, November 3 2011
- ¹⁰⁷ Dari (2014). Mongolian first vehicle manufacturer opens, UB Post, 16 January 2014.
- ¹⁰⁸ The outer ministries are: the Ministry of Construction and Urban Development, Ministry of Defense, Ministry of Education and Science, Ministry of Roads and Transport, Ministry of Culture, Sport and Tourism, Ministry of Mining, Ministry of Industry and Agriculture, Ministry of Labour, Ministry of Human Development and Social Welfare, Ministry of Economic Development, Ministry of Energy and the Ministry of Health.
- ¹⁰⁹ <http://www.ebrd.com/downloads/country/strategy/mongolia.pdf>
- ¹¹⁰ Tortell et al. (2008).
- ¹¹¹ Arena, A. (personal communication, January 21, 2013)
- ¹¹² Tortell.

Photo copyright:

©Ministry of Environment and Green Development – ©Daniela Hartmann – ©Clean Energy LLC, Newcom Group – ©Mr. Erkhemchuhai Dorj – ©Brücke-Osteuropa – ©Dave Lawrence / World Bank – ©Kit Seeborg – ©Mr. Sergelenbat / MEGD – ©Eskinder Debebe / UN Photo – ©World Bank – ©Asian Development Bank – ©Sam Steiner – ©Mr. Sergelenbat / MEGD

Mongolia finds itself on the threshold of prosperity. With its vast mineral resources, the economy has expanded quickly and is expected to grow further. This rapid economic growth creates both opportunities and challenges.

To benefit from the opportunities, Mongolia has committed itself to transform its economy into a driver of sustainability. During the course of the publication of this report, the Mongolian Parliament passed its Green Development Policy, the world's first such legal instrument. The Green Development Policy sets 14 targets for a greener Mongolian economy by 2020 and 2030.

This report, produced by the Ministry of Environment and Green Development of Mongolia with PAGE support, analyses Mongolia's progress towards a green economy, taking stock of relevant policies and initiatives, and identifies the major actors who will drive a green economy transition. The report identifies opportunities for the international community to assist Mongolia to transform its economy.

For more information, visit the PAGE website and follow us on Twitter and Facebook.



www.un-page.org



twitter.com/PAGEXchange



facebook.com/unepgreeneconomy

