AN ASSESSMENT OF ASSESSMENTS KAZAKHSTAN AND KYRGYZSTAN: AIR, CLIMATE CHANGE, BIODIVERSITY AND WASTES

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LIST OF ABBREVIATIONS

AoA Assessment of Assessments

ALRM The Agency for Land Resources Management of the Ministry of Regional Development of the Republic of Kazakhstan

ASK Agency of Statistics of the Republic of Kazakhstan

CA Central Asia

CAREC The Regional Environmental Centre for Central Asia

CERC Committee on Environmental Regulation and Control of the Ministry of Environmental Protection and Water Resources of the Republic of Kazakhstan

CGSU Committee of Geology and Subsoil Use of the Republic of Kazakhstan

CFH Committee on Forestry and Hunting of the Ministry of Environmental Protection and Water Resources of the Republic of Kazakhstan

CITES Convention on International Trade in Endangered Species of Wild Fauna and Flora

CWR Committee on Water Resource of the Ministry of Environmental Protection and Water Resources of the Republic of Kazakhstan

DPSIR Drivers– Pressure – State – Impacts – Response

DWR Department of water resource under the Ministry of Agriculture and Melioration of Kyrgyz Republic

EEA European Environment Agency

EE-AoA Europe's Environment – Assessment of Assessments

EECCA Eastern Europe, the Caucasus and Central Asia

EfE Environment for Europe

ENPI European Neighbourhood and Partnership Instrument

EPSD Environmental protection and sustainable development of the Republic Kazakhstan, Statistical Yearbooks

EPR Environmental Performance Review

EU European Union

FAO UN Food and Agriculture Organisation

GEF Global Environment Facility

GHG Green house gases

IAC EP Information and Analytical Centre on Environmental Protection of the Ministry of Environmental Protection and Water Resources of the Republic of Kazakhstan

IBSE Information Bulletins on the State of Environment in the Republic of Kazakhstan

KazHydromet	Hydrometeorological Service of the Ministry of Environmental Protection and Water Resources of the Republic of Kazakhstan
KazRIEC	Kazakh Research Institute of Environment and Climate
Kyrgyz Hydromet	Agency of Hydrometeorology under the Ministry of Emergencies and Civil Defense of Kyrgyzstan
MA	Ministry of Agriculture of the Republic of Kazakhstan
MAM	Ministry of Agriculture and Melioration of Kyrgyzstan
MDG	Millennium Development Goals
MEAs	Multilateral Environmental Agreements
MES	Ministry of Education and Science of the Republic of Kazakhstan
MoEPWR	Ministry of Environmental Protection and Water Resources of the Republic of Kazakhstan
MOG RK	Ministry of Oil and Gas of the Republic of Kazakhstan
MTC	Ministry of Transport and Communications of the Republic of Kazakhstan
MINT	Ministry of Industries and New Technologies of the Republic of Kazakhstan
MONECA	Environmental Monitoring in CA (the component of Forest and Biodiversity Governance Including Environmental Monitoring EU project)
NFEI	National Fund of the Environmental Information of Kazakhstan
NIR GHG	National Inventory Report on GHG
NR-BC	National Report to Basel Convention
NR – CBD	National Report to UN CBD
NR GRF	National Report on the state of genetic resources of forests of Kyrgyzstan
NR-TAP	National Report to the UNECE Convention on Long-range Transboundary Air Pollution of the Kyrgyz Republic
NSC	National State Committee of the Kyrgyz Republic
NSoERs	National State of Environment Reports
ODA	Official Development Aid
OECD	Organisation for Economic Co-operation and Development
POPs	Persistent organic pollutants
SAEPF	State Agency on Environmental Protection and Forestry of the Kyrgyz Republic
SEIS	Shared Environmental Information System
SLCF	Short – lived climate forcers
SNC	Second National Communication for UNFCCC
UNCBD	United Nations Convention on Biological Diversity
UNCCD	United Nations Convention to Combat Desertification

List of Abbreviations

UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNECE JTFEI	UNECE Joint Task Force on Environmental Indicators
UNECE WGMA	UNECE Working Group on Environmental Monitoring and Assessment
UNEP	United Nations Environmental Programme
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
WB	World Bank
WBK	Working Body of Kazakhstan on NIR GHG

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AN ASSESSMENT OF ASSESSMENTS
KAZAKHSTAN AND KYRGYZSTAN
AIR, CLIMATE CHANGE, BIODIVERSITY AND WASTES

1. INTRODUCTION

The Europe's Environment: An Assessment of Assessments (EE-AoA)[1], was commissioned by the stakeholders of the Pan-European "Environment for Europe" (EfE) process in connection with the EfE Seventh Ministerial Conference in Astana (Astana Conference), the Republic of Kazakhstan held on September 21-23, 2011.

The EE-AoA was developed by the European Environmental Agency (EEA) in cooperation with the United Nations Economic Commission for Europe (UNECE), Regional Environmental Centres of Caucasus, Central Asia, Moldova and Russian Federation

after consultations with the wide range of stakeholders.

The Central Asian component[2] of the EE-AoA is its integral part. It was developed by the Regional Environmental Center for Central Asia (CAREC) under the substantive and technical guidance from the EEA, funding support from the Italian and Swiss Governments, and UNECE. It was also a fruitful collaboration exercise with the appointed Focal Points and nominated national experts from the Central Asian countries.

The EE-AoA covering two major topics – the Inland Water Resources and the Green

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1 http://www.eea.europa.eu/themes/regions/pan-european/europes-environment-an-assessment/europes-environment-2014-an-assessment

2 http://www.carecnet.org/en/international-events/europe%e2%80%99s-environment-an-assessment-of-assessments-ee-aoa/

Economy – was highly appreciated at Astana Conference and recognized by stakeholders as a good basis for outlining the state of play and the needs of the countries with regard to environmental information, indicators and assessments[3].

The UNECE Working Group on Environmental Monitoring and Assessment (UNECE WGEMA) at its Thirteenth Session, held on October 30 – November 1, 2012 invited the REC Moldova and CAREC to further develop the methodology of the Assessment of the Assessments in the new areas as Biodiversity, Air, Climate Change and Wastes for the four selected countries of Eastern Europe, Caucasus and Central Asia (EECCA) following the EEA guidance and present outcomes of the work at the Fourteenth Session of the UNECE WGEMA in November, 2013.

The objective of the new AoA on Biodiversity, Air, Climate Change and Wastes is to assess the state of play in the environmental reporting, indicators and statistics in the above thematic areas in the selected EECCA countries. CAREC received positive feedback and agreement from Kazakhstan and Kyrgyzstan to prepare such AoA.

CAREC and REC Moldova carried out assessments by using the Assessment of Assessments' Methodology[4] and relevant tools of the EEA specifically designed for such assessments (EE-AoA web-portal[5]). EEA provided an extended facility in the EEA EE-AoA Virtual Library6 to upload the new assessments and presented four thematic areas each containing certain sub-topics and carried out a test to evaluate compatibility of these assessments with the EEA priorities in the respective thematic areas.

The Ministry of Environmental Protection and Water Reources of the Republic of Kazakhstan MoEPWR and the State Agency of Environmental Protection and Forestry of Kyrgyz Republic (SAEPF, appointed Focal Points from their senior staff) for coordination relevant AoA activities. Based on consultations with the Focal Points, CAREC employed four national experts in each country to carry out assessments.

National experts have identified assessments including the National State of Environment Reports (NSoERs), reports to Multilateral Environmental Agreements (MEA's), statistical compendiums, and relevant thematic publications in each area and uploaded them to the Extended Virtual Library at the EEA AoA web-portal. In order to avoid possible repetitions of uploading the same sources again, it was agreed to upload only those sources that start from 2007. Twenty sources have been identified and uploaded for Kazakhstan and twenty eight sources for Kyrgyzstan (Annex 1).

National experts also prepared Country Fiches (Annex 2) for respective thematic areas and approved them with appointed Focal Points. The process of uploading approved Country Fiches to the EEA AoA Web-portal is still pending.

Since the specific EEA on-line Review Templates were not accessible, for the purposes of review and analysis of the assessments, in consultations with the Focal Points and national experts, three major assessments per thematic area and per country have been identified. These assessments have been analysed against the use of UNECE core set of environmental indicators for the EECCA countries, compatibility with the sub-topics proposed by EEA and compliance with the DPSIR framework.

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3 http://www.unece.org/env/efe/Astana/documents.html

4 The EE-AoA Guide at http://aoa.ew.eea.europa.eu/

5 http://aoa.ew.eea.europa.eu/

Introduction

The current AoA report consists of Introduction and three Chapters. In the second and the third chapters an overview of the national systems on data and information management, reporting and assessments, and review and analysis of the selected assessments in each thematic area for Kazakhstan and Kyrgyzstan are presented.

The fourth chapter makes a comparative analysis of the outcomes of the assessments between two countries, provides relevant conclusions and recommendations discussed with the involved national experts and approved by the appointed National Focal Points.

AN ASSESSMENT OF ASSESSMENTS

KAZAKHSTAN

2.1. SETTING THE SCENE

2.1.1. Country situation with assessments: post-Astana progress and trends

Kazakhstan is a Party to twenty six MEA's and majority of environmental assessments are developed for fulfilling country's obligations under them (Annex 3, Table 1). There are obligations to report to the specific MEAs on biodiversity, air, climate change, and wastes. There is an obligation under the Aarhus Convention to develop the NSoER's and ensure public access to them. NSoERs cover all thematic areas that have been reviewed and results presented in this report.

The group of involved national experts from Kazakhstan uploaded 20 new sources to the EEA Virtual Library:

- One NSoER

- Seven reports to MEAs (4-Biodiversity, 1- Air, 1-Climate Change, 1-Wastes)

- Five Statistical Compendiums

- One Informational Bulletin on the State of Environment in Kazakhstan

- Three thematic publications on Climate Change

- One Strategic Plan of the MoEPWR 2011-2015

- One National Plan on Green Development «Zhasyl Damu», and

- One National Plan on Waste Management.

The NSoER-2010 and obligatory reports to MEAs, several other thematic reports and relevant statistical compendiums were uploaded to the Virtual Library and proposed for conducting assessment within the current AoA.

Publication of NSoER-2010 (2011) and statistical compendiums as Environmental Protection and Sustainable Development of

Kazakhstan 2007-2010 (2011) and 2007-2011 (2012), Agriculture, Forestry and Fishery in Kazakhstan 2007-2011 (2012), and National Inventory Report (NIR) on GHG to UNFCCC (2013) are to be named as the achievements of Kazakhstan in regard to practical implementation of post Astana EE-AoA activities.

The NSoER-2010 refers to the use of the UNECE Guidance «Environmental Indicators and Indicator-based Assessment Reports for EECCA countries» (2007)[6]. However, it should be mentioned that the NSoER-2010 and the previous NSoERs 2006-2009 only observe recommended set of indicators but do not exactly follow the UNECE Guidance on Indicator-based Assessment Reports for EECCA countries.

In the NSoER-2011 text information is prevailed over digitised information; data that are contained in the report mainly not aggregated by the types of indicator data.

The Statistical Compendium «Environmental Protection and Sustainable Development of Kazakhstan 2007-2010»[7] (EPSD 2007-2010), which was published in the fall of 2011, right after the Astana EfE Ministerial Conference, can be added to the list of post-Astana achievements. It contains 26 environmental indicators compiled out of 36 indicators recommended by UNECE. In 2012 the Agency of Statistics of Kazakhstan (ASK) published updated EPSD 2007-2011[8] that includes 32 environmental indicators out of 36 used by UNECE for EECCA countries.

6 http://www.unece.org/fileadmin/DAM/env/europe/monitoring/Publications/Indicators_Assessment/documents/Publication.Indicators_Reporting._ECE-CEP-140_Eng_final.pdf

7 http://www.stat.kz/publishing/20111/OhranaEnd.pdf, pg. 3

8 http://www.stat.kz/publishing/20121/%D0%98%D0%BD%D0%B5%D1%80%D0%B0%D0%BA%D1%82%D0%B8%D0%B2%20%D0%9E%D0%9E%D0%A1%2011.pdf

2.1.2. Current state of the environmental information and data flow

The system of the environmental data and information collection, data flow and data management in Kazakhstan is shown in Figure 2.1. The major player is MoEPWR with its Committees: Environmental Regulation and Control (CERC), Water Resources (CWR), Forestry and Hunting (CFH), Fishery (FC), and subsidiary entities: - the National Hydrometeorological Service (KazHydromet), Information and Analytical Centre on Environmental Protection (IAC EP) and newly established Joint Stock Company - «Zhasyl Damu» (JSC Zhasyl Damu), which is a successor of the Kazakh Research Institute of Environment and Climate (KazRIEC). KazRIEC was responsible for developing NSoERs and several other reports for MEAs.

Other responsible governmental agencies are the Agency of Statistics (ASK) and Committee of Geology and Subsoil Use (CGSU) of the Ministry of Industry and New Technologies (MINT). These agencies among other duties are also responsible for preparing reports on industrial and mining wastes.

After collecting the basic data, its exchange and sharing among responsible governmental agencies such as MoEPWR, MINT, ASK are usually done on the basis of the official written requests. However, in the past two years, Kazakhstan started to practice more regular sharing and use of needed data and information among several agencies with compatible IT facilities.

There is a Joint Order of MoEPWR and ASK dated as of August 15, 2012 «On the information exchange between ASK and MoEPWR», which provides regular flow of the aggregated data and

information from MoEPWR to ASK on the agreed list of indicators. Based on these data and information, the Agency of Statistics produces annual update of the environmental statistics accessible online

and publishes statistical compendiums «Environmental Protection and Sustainable Development».

Schematically the functional placement of the National Fund of the Environmental

Figure 2.1: Principal scheme of environmental data and information linkage and data flow in Kazakhstan
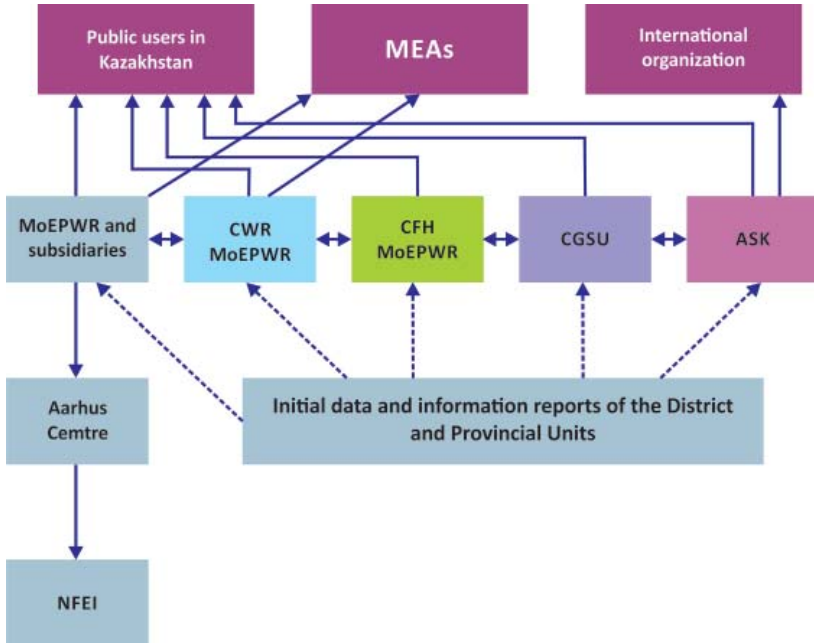
Information (NFEI) is illustrated in Figure 2.1 (on the left bottom corner). The Fund was established under the IAC EP in 2005 for collecting environmental data and information in order among other duties to send reports to MEAs. However, required data and information are not provided to NFEI on time hence, reports to MEA are prepared using post factum information.

In the EE-AoA-CA it was mentioned that Kazakhstan is the most advanced among Central Asian countries in providing internet access to the environmental information on water and the greening the economy, including to the NSoERs, environmental

and water statistics, reports to the MEAs either through own web-resources or through websites of relevant Conventions[9]. There are not much specific developments towards water. However, several web-resources were developed on green economy (http://g-global-expo.org/gbp/index.html, http://en.greenkaz.kz/ http://gbpp.org/) thus, mainly focused on the process and projects initiated by Kazakhstan towards promotion of green economy.

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9 Europe's Environment – Central Asia – An Assessment of Assessments, CAREC, 2011, Table 2.4, pg 23.

Table 2.1: Key web-resources on environmental information and data in Kazakhstan

Agency and its website	Key environmental information and data
MoEPWR http://eco.gov.kz/	• NSoERs 2006-2010, • Reports to MEAs for the period 2008-2013, • Information Bulletins on the State of Environment • Statistical reports of the Committee of Ecological Regulation and Control (CERC), • Statistical reports of the Committee of Water Resources (CWR), • Statistical Reports on hazardous wastes, • Reports on environmental pollution, • Reports on radiation monitoring of rural settlements, • Reports on environmental and demographic survey of rural settlements, • National Atlas of the Republic of Kazakhstan (2006)
ASK http://www.eng. stat.kz/digital/ Environmen-tal%20 protection/ Pages/default. aspx	• Running expenses on environment protection • Captured and neutralization of contaminants • Utilized pollutants • The number of stationary sources of pollution • Emissions of air pollutants emitted from stationary sources • Emissions of air pollutants emitted from stationary sources (per capita) • Emissions of solid pollutants • Emissions of liquid and gasiform pollutant substances • Emissions of the most widespread pollutants, divergent from stationary source of free air pollution • Expenses for environment protection
Aarhus Centre under IAC EP http://aarhus.kz	• NSoERs • Reports to UNECE Water Convention • Reports on implementation of the Aarhus Convention • Guidance and publications on the access to environmental information • Thematic publications on environment

Websites of MoEPWR, ASK, and the Aarhus Centre give free access to the official environmental information and data, including above mentioned thematic areas (Table 2.1). All assessments considered in this AoA are accessible through these websites.

The column «Key environmental information and data» in the Table 2.1 refers to the statistical reports as well as information and data on the state of environment and its management that are accessible online. The strategic documents, national programmes, relevant governmental resolutions and legal acts are also available, easily and freely accessible through these websites. These

websites are updated regularly on monthly and quarterly base. However, information contained in these web-resources are mainly in the Russian language the English version is very often not available.

2.1.3. Brief overview of the institutional settings and funding of the environmental reporting

Responsibility for the preparation of the NSoER is given to MoEPWR. From 1991 to 2003, the MoEPWR developed and published NSoERs with its own means. Since 2004, NSoERs were developed by KazRIEC, which was a subsidiary of the MoEPWR. Development of NSoERs was funded and coordinated by the MoEPWR.

From 2006 to 2011, KazRIEC produced five annual NSoERs under the above mentioned programme of MoEPWR. Since then, due to the reforms within the MoEPWR, including changes in the procurement procedures, the decision on which institution should take over the development of NSoERs and provide funding for it is still pending.

KazRIEC, which was reorganized to the JSC «Zhasyl Damu» in April 9, 2013 has a direct mandate of the Working Body from the Government of Kazakhstan and the MoEPWR to develop the Inventory of Greenhouse Gas Emissions and to create, maintain, update and publish the State Cadastre of Greenhouse Gases as for the implementation of country obligations under the Kyoto Protocol, and to prepare the National Communications of the Republic of Kazakhstan to the UNFCCC. Reporting to the Kyoto Protocol is funded by the Government of Kazakhstan and the National Communications to UNFCCC is funded by UNDP/GEF.

In 2009, IAC EP of the MoEPWR prepared the 4th National Report to the Convention on Biodiversity and the UNDP/GEF is the source of co-funding of reports to UNCBD. Kazakhstan has submitted all four reports since ratification of the Convention on Biological Diversity. There is a co-funding provided by the MoEPWR for the reporting to UNCBD as well.

For all other reports to MEAs, Kazakhstan provides its own funding. Development of the reports is entrusted by the MoEPWR to national professional entities selected through tenders. Several other national agencies and institutions, which are not subsidiaries of the MoEPWR, also bear responsibility in reporting or providing data for reporting to the MEAs.

Responsibility for preparation of the Report under the Convention on the Protection of the World Cultural and Natural Heritage is shared among the Ministry of Education and Science (MES) and MoEPWR, while the latest report for 2010[10] was prepared by IAC EP.

The Ministry of Agriculture (MoA) and its Committee of Forestry and Hunting (CFH) were responsible for preparing reports under the following conventions:

- Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention);
- Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention);
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Within the structural reform of the MoEPWR, the CFH, by the Resolution of the Government of Kazakhstan as of March 26, 2013[11], was assigned to become a subsidiary to the MoEPWR. Due to this change

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10 http://aarhus.kz/index.php?option=com_content&task=view&id=733

11 http://www.eco.gov.kz/new2012/ministry/komitet/kloh/

reporting to the above Conventions either will stay within CFH or will be changed. The above Resolution only stipulates that the international obligations in the area of forestry and wild life protection are responsibility of CFH[12]. The Fisheries Committee (FC), which has the function to protect and preserve fish and other water species, was transferred from the Ministry of Agriculture to the MoEPWR.

KazHydromet bears responsibility to collect data and publish monthly, quarterly and annually Information Bulletins on the State of Environment (2013)[13] and upload them to the website of the MoEPWR.

The ASK produces various publications on the state of environment, covering all considered thematic areas, including obligatory statistics on air pollution directly reported to the UNECE Convention on Long-range Transboundary Air Pollution, «Key indicators on air pollution for 2004-2011»[14]. ASK has also published the Statistical Compendium «Environmental Protection and Sustainable Development of Kazakhstan 2007-2011» (2012)[15], which is the most comprehensive statistical source on all considered thematic areas. Another valuable Statistical Compendium covering Biodiversity

is the «Agriculture, Forestry and Fisheries in Kazakhstan 2007-2011» (2012)[16].

UNDP Kazakhstan plays certain role in assessing the state of environment in the mentioned thematic areas being the implementing agency for GEF. Some thematic publications were produced within UNDP/GEF projects, including those on climate change mitigation and adaptation.

UNECE also plays an important role in the assessment process, specifically in the methodological guidance for the reporting, including NSoER and the reporting to the UNECE Conventions. UNECE actively involves the MoEPWR and ASK to the activities of the UNECE WGEMA and JTFEI. Experts from these agencies are involved in the discussion and the approval of the environmental reporting guidelines, the set of indicators and recommendations on environmental statistics. UNECE, based on the request from the Government of Kazakhstan, produced the Second EPR in 2008.

CAREC, after completion of the EE-AoA in 2011, was awarded the EU grant to implement the environmental awareness raising (AWARE) project in Central Asia. This project includes component on SEIS related awareness raising. Several expert assessments on the state of the environmental reporting, performance indicators and statistics were made under this component for each of the Central Asian countries. The next sub-chapter summarizes several thematic assessments on the state of the environmental information and data flow in Kazakhstan. In addition to the expert assessments, CAREC organized a national awareness raising seminar on SEIS in Astana.

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12 http://www.eco.gov.kz/new2012/ministry/komitet/kloh/, Paragraph 18, Item 7; Paragraph 20, Item 12.

13 http://www.eco.gov.kz/new2012/activity-of-state-authority/information-about-the-environmental-situation-in-the-regions-of-kazakhstan/ecobul/

14 http://www.stat.kz/digital/ohrana/Pages/default.aspx

15 http://www.stat.kz/publishing/20121/%D0%98%D0%BD%D0%B5%D1%80%D0%B0%D0%BA%D1%82%D0%B8%D0%B2%20%D0%9E%D0%9E%D0%A1%2011.pdf

16 http://www.stat.kz/publishing/20121/%D0%A1%D0%B5%D0%BB%D1%8C%D1%85%D0%BE%D0%B7_inter.pdf

2.2. REVIEW AND ANALYSIS OF ASSESSMENTS IN THEMATIC AREAS

2.2.1. Air

2.2.1.1. Overview of the reporting

MoEPWR is the governmental agency that organizes air quality and pollution monitoring. MoEPWR also monitors country's compliance with obligations under relevant MEAs on air. The CERC, KazHydormet and ASK are the major suppliers of the data on air monitoring and pollution in the country.

The CERC with its provincial (oblast) branches is responsible for collecting reports from enterprises – emitters of air polluting substances. CERC runs an Inventory of Enterprises – emitters of the air polluting substances, including harmful and hazardous pollutants.

Enterprises are responsible for installation of and running compatible monitoring equipments and systems. Enterprises submit reports on emission of air polluting substances in the form of approved statistical forms twice a year and in case of emergencies – directly to oblast branches of CERC. The data on emissions is regularly published on the website of MoEPWR[17].

Enterprises that are registered declare emitting the following air pollutants from the stationary sources: coal and lignite mining, oil and gas, mining of metal ores, other mining and metallurgic industries, petrochemical and chemical industries, agriculture, construction, energy supply, and processing industries.

KazHydromet monitors air quality in the country using the network consisting of 78 stations. The installation of automated air quality monitoring stations started about 3-4 years ago and the number of automated stations is steadily growing. The data on air quality is monthly, quarterly and annually published in the Information Bulletins on the State of Environment (IBSE)[18], which are accessible on-line.

According to MoEPWR Kazakhstan is fulfilling its Convention obligations by implementing certain environmental activities, core results of which are outlined in the report on Long-range Transboundary Air Pollution (2010)[19]. The report was developed following the principles of the Convention, i.e. all the available data on the amount of emissions for the period of 1995 to 2010 were collected in line with the Guidelines on provision of data on emissions. Convention obligations are also fulfilled by ASK, which bears responsibility to prepare statistical reports on air pollution using data from stationary sources and ensures on-line access to these reports as well[20].

The NSoER and IBSE are the main assessments that cover air quality and air pollution. Statistical Compendium «Environmental Protection and Sustainable Development 2007-2011» (EPSD 2007-2011) is another valuable source of information on air quality, accessible on-line and available in hard copies.

The IBSE regularly provides results of the environmental monitoring conducted

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17 http://www.eco.gov.kz/new2012/ministry/statistical-information/statistical-reporting/ved-kom/

18 http://www.eco.gov.kz/new2012/activity-of-state-authority/information-about-the-environmental-situation-in-the-regions-of-kazakhstan/ecobul/

19 http://www.eco.gov.kz/new2012/wp-content/uploads/doklady/zagr.vozdux2010.htm

20 http://www.eco.gov.kz/new2012/ministry/statistical-information/statistical-reporting/ved-kom/, pgs 110 -133

by KazHydormet. Major results of the monitoring are reflected in the Bulletins and presented in the form of charts, maps on atmospheric air pollution, tables with data on water and soil monitoring, and analytical information and assessments of air quality and pollution by major cities and selected regions. Since 2009 the Bulletin provides data obtained from the automated stations and since 2010 includes maps of the air pollution, which also show location of automated stations. A separate information and data collected by air quality monitoring stations «AGIP Kazakhstan Caspian Operating» and «Atyrau Oil Processing Plant» are included in IBSE as well.

The NSoER-2010 provides some analytical information on the quality of atmospheric air in the cities and emission of pollutants into the atmospheric air on the territory of Kazakhstan. For the purpose of NSoER, the data on air quality in settlements, emission of pollutants into the air, and public health are collected from the respective agencies. The Chapters on air are prevailingly descriptive. They also provide findings and recommendations on the quality control of the atmospheric air, to which Kazakhstan should pay particular attention.

2.2.1.2. Review and analysis

The NSoER - 2010, annual IBSE-2012[21], and the EPSD- 2007-2011 were selected in order to conduct more detailed review of the assessments on air quality.

These documents are checked for the compliance with the UNECE indicators on air and for the relevance of selected assessments of the sub-topics and subjects

to the sub-topics proposed by EEA and the UN-ECE guidelines[22] (Annex 4, Table 4.1).

The NSoER-2010 and IBSE-2012 are mainly consisted of descriptive information including some charts, tables, graphs, and figures. Therefore, assessment of these documents has been done by identifying the number of pages, where UNECE indicators and the EEA sub-topics and subjects have been mentioned. In EPSD-2007-2011, which is a statistical compendium, where information is presented in the form of tables without analytical information, only the number of relevant tables is counted. The overall proportion of air quality analysis in the selected environmental assessments is shown in Figure 2.2.

There are three UNECE indicators on air: emission of pollutants into the atmospheric air, ambient air quality in urban areas, and consumption of ozone depleting substances. All three assessments in combination provide the following proportion of proposed indicators on air (Figure 2.3).

If the NSoER-2010 considers all the UNECE indicators on air, IBSE-2012 makes entire focus on air quality and then EPSD-2007-2011 gives a little more information on emission of polluting substances comparing to other indicators. In an overall picture (total) the ambient air quality is the most prevalent, because the data provided by KazHydromet collected from its air quality monitoring stations are available and easily accessible due to the established practice to publish updated IBSE regularly.

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21 http://www.eco.gov.kz/new2012/3119-9/, Annual 2012

22 http://www.unece.org/fileadmin/DAM/env/ europe/monitoring/Publications/Indicators_ Assessment/documents/Publication.Indicators_ Reporting._ECE-CEP-140_Eng_final.pdf

Figure 2.2 Proportion of air quality analysis in the selected assessments, %

Figure 2.3. Proportion of air indicators in the selected assessments
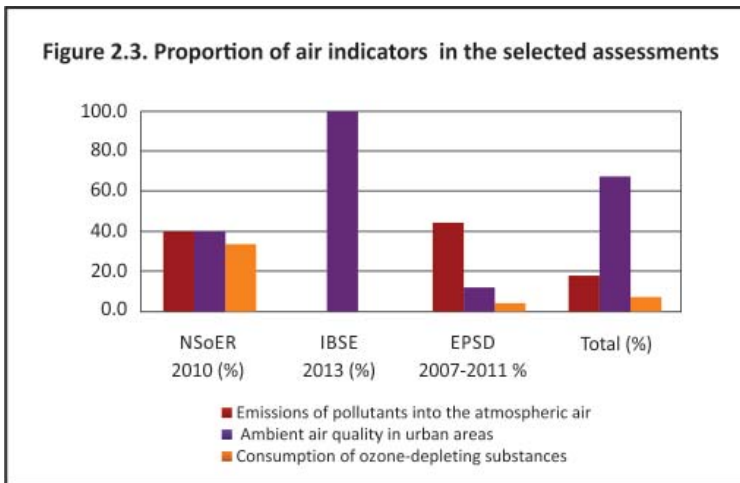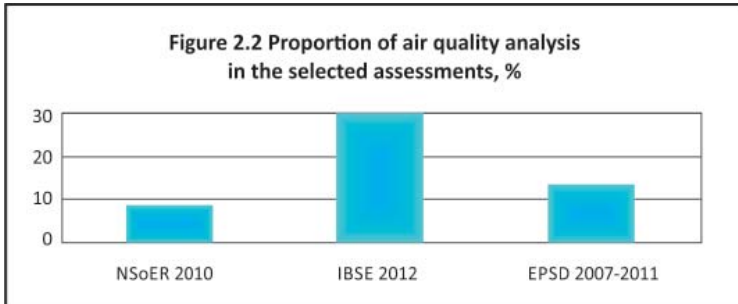
The comparison of sub-topics and subjects recommended by the EEA with selected assessments (Figures 2.4 and 2.5) proves that there are very limited data and information on air pollution aggregated by sectors, relevant results of monitoring and impact assessments. Such a situation is explained first of all by the process of collecting data by CERC MoEPWR, primary objective of which is mainly oriented to collecting information on emissions in order to make enterprises to pay fees for air pollution, while other important objectives as organizing and administering data collection and storage process are left with little attention. It should be noted that the system is not yet designed to collect data and information on impacts and response measures. Therefore, MoEPWR produces insufficient data and information for NSoERs on air pollution by sectors and impacts of air pollution, which can be seen in the following figures below.

In the EPSD-2007-2011 the ASK presented relatively well organized statistics on emissions of air polluting substances due to statistical reporting on emissions that are regularly prepared by enterprises.

KazHydromet collects data on air quality from its stationary points and as it can be seen from Figure 2.4 most of the data on air quality are presented per pollutants. It also shows air quality by locations and these data are presented in EPSD 2007-2010 and NSoER-2010, where assessments

on «per pollutants» are much better presented than the ones on «per sector» and the «related monitoring».

The DPSIR Framework complemented by policy, legal, hot spots, and trends analyses was recommended and then applied in

Figure 2.4: Air emission in the selected assessments

Figure 2.5: Air quality in the selected assessments

Figure 2.6: DPSIR analysis of assessments on air (%)
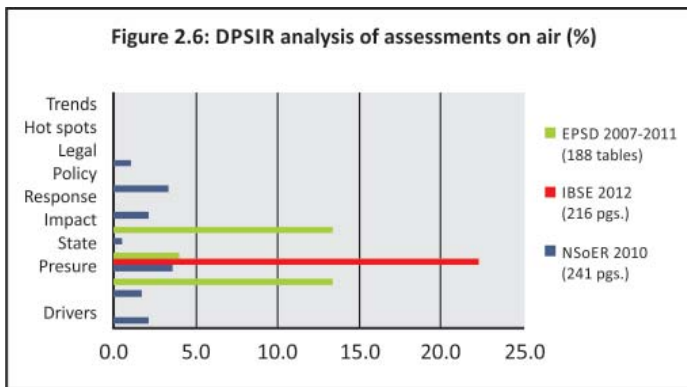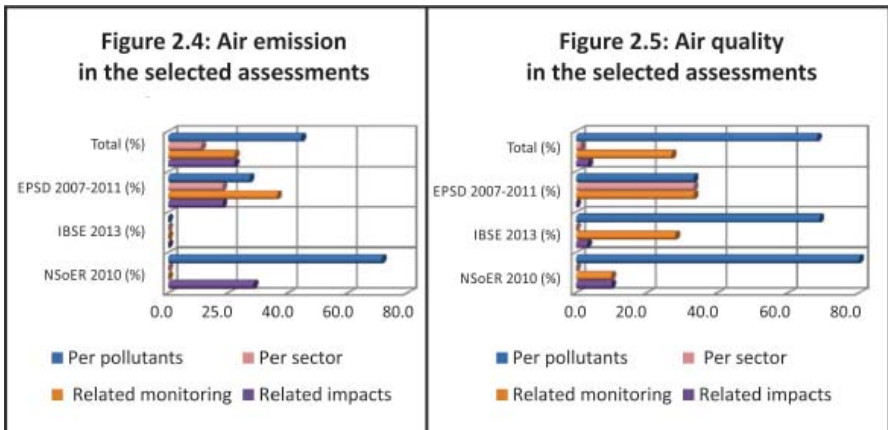
EE-AoA[23]. National experts involved in the development of the current AoA were proposed to analyse application of the DPSIR framework in the selected assessments.

It was recommended to national experts to review each of the three recommended assessments and find out all substantive items that could be considered relevant to the components of the DPSIR framework in each respective thematic area. Figure

2.6 shows application of DPSIR in the three selected assessments on air.

Overall low percentage of pages on air in NSoER-2010 and EPSD-2007-2011 can be explained by the comprehensiveness of these assessments covering many other thematic areas of the environmental management. The IBSE-2012 as more specialised, but also not a publication entirely dedicated to air quality and present only the «State» analyses, among the multitude of other DPSIR components.

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23 The EE-AoA Guide at http://aoa.ew.eea. europa.eu/

2.2.2. Climate change

2.2.2.1. Overview of the reporting

The JSC «Zhasyl Damy» is the assigned Working Body of Kazakhstan (WBK) to run the Inventory of greenhouse gas (GHG) emissions and to submit the relevant National Inventory Reports to the UNFCCC Secretariat, while keeping responsibility for preparation and reporting to the National Communications on Climate Change to UNFCCC[24].

According to the requirements of the UNFCCC and subsequent decisions of the Conference of Parties, Kazakhstan ensures regular GHG National Inventory Reports (NIR) on collection, processing, storage and analysis of data required for determination of the actual emissions and absorption of greenhouse gases. The data for the national inventory of GHG emissions is based on statistical reports of the ASK, as well as on the data provided by the other state agencies and enterprises.

For the purpose of preparation of the NIR GHG, the MoEPWR sends requests to the other agencies and institutions holding baseline data required for assessing GHG emissions and absorption. These agencies and institutions provide the WBK with the required data within one month after the receipt of relevant requests.

The main supplier of the baseline data is the ASK. The Ministry of Oil and Gas (MOG) provides data on fuel consumption for the purpose of calculation of GHG emissions. MINT provides data on production of metals, crude iron and steel, chemicals, and minerals. The Ministry of Agriculture (MA) provides data on livestock population and total fertilizers application. The Ministry

of Transport and Communications (MTC) provides data on the number of vehicles and the Ministry of Health (MH) – on the amount of medical waste incinerated since 2006. The Agency for Land Resources Management of the Ministry of Regional Development (ALRM) provides data on the state and use of forests and agricultural land for various purposes. The Customs Committee supplies data on export and import of fuel, certain chemicals, calcium carbide, cement, and others. In addition, data is also requested from the local provincial authorities (Oblast Akimiats) on solid wastes and wastewater.

Results of systematic climate observations by KazHydromet are part of the reporting on climate change. KazHydromet provides data on monthly and annual average main climatic characteristics – the atmospheric pressure at sea level, air temperature, maximum and minimum air temperatures, monthly and annual precipitation for certain periods of observation, including the Global Climate Observation System from 14 Hydromet stations of the national hydro meteorological network in Kazakhstan. Monitoring of climate and climate change is based on this data. National Data Base «KazHydromet» containing main climatic features is accessed for the purposes of reporting on climate change including development of the National Communications.

The EPSE-2007-2011[25] provides statistics on climate change. It contains data on climatic characteristics received from KazHydromet (rainfall, the monthly average temperature with breakdown by cities for 2011), the data on greenhouse gas emissions annual/ yearly breakdown, emissions of pollutants

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24 http://unfccc.int/national_reports/ annex_i_ghg_inventories/national_inventories_ submissions/items/7383.php,

25 http://www.stat.kz/publishing/20121/ %D0%98%D0%BD%D0%B5%D1%80%D0% B0%D0%BA%D1%82%D0%B8%D0%B2%20 %D0%9E%D0%9E%D0%A1%2011.pdf

including soot and carbon oxide, the data on the volume of household solid waste, which are used for the calculation of methane emerging at landfills of solid waste, and the data on forest resources and forest-covered areas, which are used for the calculation of absorption of carbon dioxide by forest vegetation, as well as data on the areas of forest fires, which is used for the calculation of GHG emissions in the «Forestry, land use and land use change» sector.

Assessments on climate change are also made using statistics by sectors, which contain data on industrial production («Industry of Kazakhstan»), fuel and energy balance used in the calculation of GHG emissions in the sectors «Energy related activity», «Transport of Kazakhstan», and «Agriculture, forestry and fishery». For the purpose of accurate calculations data from certain enterprises and power plants are used according to international methodology and requested from enterprises directly by the organizations responsible for inventory.

The report on climate change, other than the reporting to the UNFCCC, is the part of NSoERs. There are thematic assessments on climate change mitigation and adaptation, provided by several UNDP and other international organizations' projects in Kazakhstan. However, assessments made by the projects do not have regular and continuous character.

2.2.2.2. Review and analysis

For the purpose of the thematic review of indicators and topics on climate change the NSoER-2010, SNC-2009 and the NIR on GHG (2013) were selected.

Due to the entire climate change focus of the SNC and NIR on GHGs, there is no graph showing the share of climate change

in the assessments. In the meantime in NSoER-2010 the climate change makes 7.9% of its total volume (Annex 4, Table 4.2).

The NSoER-2010 contains the Chapter on climate change[26] with topics on GHG emission, weather and hydrological features for 2010, condition of the surface and the ice/frost conditions of the Caspian Sea, hazardous hydro meteorological events and ozone distribution.

Atmospheric temperature, atmospheric precipitations and the GHG emissions are in the set of the UNECE indicators on climate change for the EECCA countries (Annex 4, Table 4.2). NSoER-2010 considers all three recommended indicators and additionally considers hazardous hydro meteorological events and ozone distribution. For the purpose of comparison of NSoER-2010 and other climatic assessments in Kazakhstan, there are sub-topics and subjects proposed by EEA (Annex 4, Table 4.2).

The set of UNECE climatic indicators (Figure 2.7) is covered in all three assessments. The NSoER-2010 contains separate chapter on climate change, but it is not entirely focused on the UNECE indicators on climate change. More than 60% of it is dedicated to hazardous hydro meteorological events and ozone distribution. Each of the three UNECE recommended indicators make less than 20% in NSoER-2010. GHG emission makes almost 20% and two others covered at considerably lower rate.

The SNC makes better focus on GHG emissions, while other indicators are presented to a lesser extent. The NIR on GHG-2013, in a view of its objectives, makes almost entire focus on GHG emission.

As for the overall picture on indicators, the major climate change assessments in Kazakhstan reflect the nature of country's

26 http://www.eco.gov.kz/doki/Monografy.pdf, pgs. 15-29

obligations under the major climatic MEAs with considerable prevalence of GHG emissions, for which Kazakhstan puts efforts to assess and reduce emissions. Also, it should be taken into consideration that one of the three major climatic assessments in the country is specifically dedicated to GHG emissions'.

The overall comparison of three assessments with the sub-topics proposed by EEA is shown in Figure 2.8. The GHG

Figure 2.7: The share of CC indicators in the selected assessments

Figure 2.8: Proportion of proposed sub-topics on CC in the selected assessments
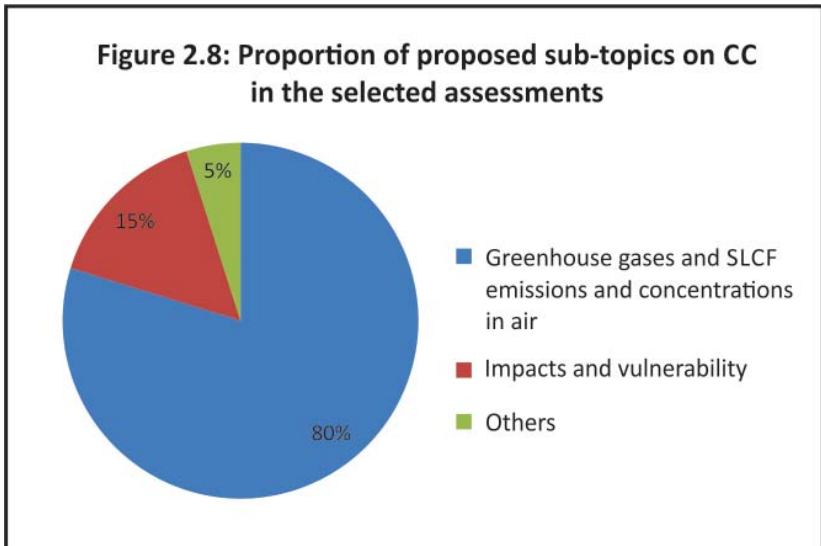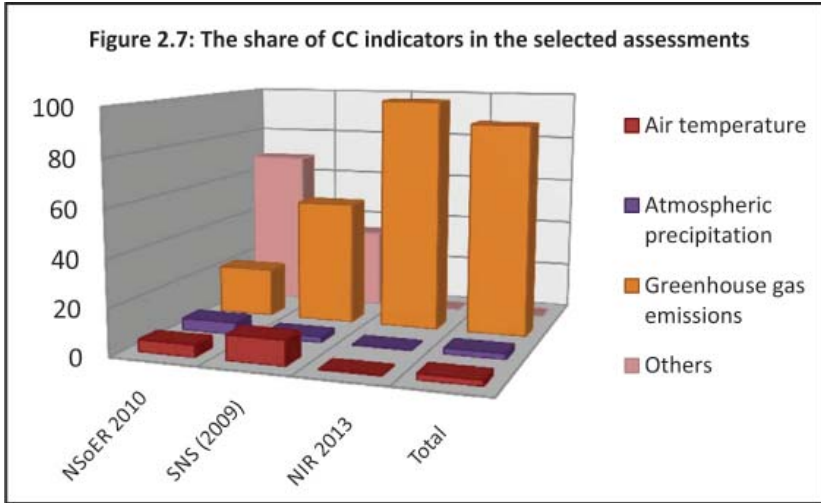
emissions make up to 80% against 15% of the impact and vulnerability.

Further consideration of thematic features of climatic assessments (Figure 2.9) shows that in GHG and SLCF emissions, the NSoER-2010 pays even more attention to emissions per pollutants and per sector, while it does not show the related monitoring.

The SNC-2009 presents comparably even consideration of all three subjects with some prevalence of the related monitoring. The NIR-2013 makes almost entire focus

on the per sector emissions. Because the NIR-2013 is specifically focused on GHG emissions, the overall picture shows that Kazakhstan improved its assessment on per sectors GHG emissions.

As for the impact and vulnerability (Figure 2.10) the NSoER-2010 and SNC-2009, because of their focus and comprehensiveness covering climate change issues, give information on related mitigation and adaptation measures. In the meantime the NIR-2013 also in a view of its objectives and scope does not provide any

Figure 2.9: GHG and SLCF emission in the selected assessments

Figure 2.10: Impact and vulnarability in the selected assessments
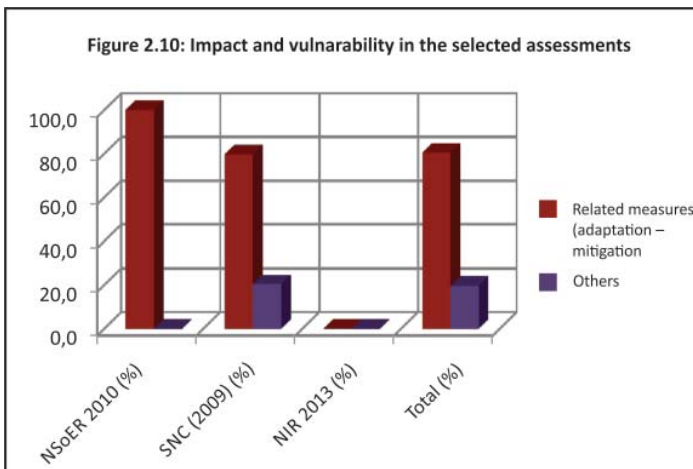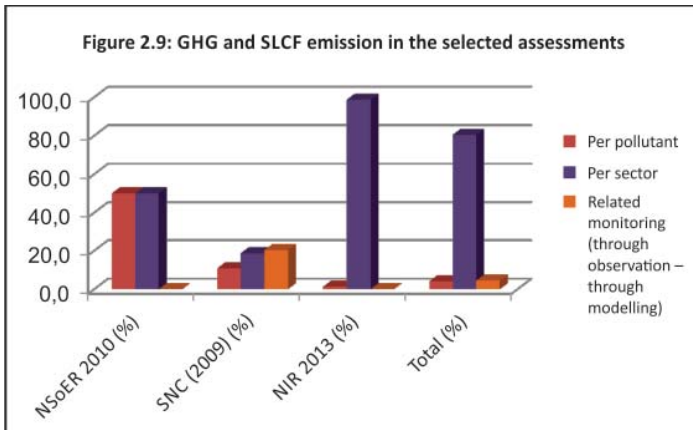
data related to the climate change impact and vulnerability.

Future NSoERs and the upcoming Third National Communication on climate change in Kazakhstan could benefit from NIR-2013, which can be used as a valuable source providing detailed per sector inventory of GHG emission. Thus, assessments on mitigation and adaptation measures can be improved.

The Figure 2.11 shows DPSIR analysis of climate change in the selected assessments. Despite the fact that the pure data and information on climate change constitutes only 7.9% of the NSoER, it includes chapters containing «drivers» for climate change, «response», «policy» and «legal» measures towards climate change mitigation and adaptation. NSoER considers as a hotspot

the situation on Aral Sea, which is mainly manmade and partially climatic by its impact.

The SNC as the most comprehensive assessment on climate change covers most of DPSIR components focusing mainly on «impact», and to a lesser extent on «response» and «trends» related to climate change.

The NIR on GHGs due to its nature and objectives makes the strongest focus on «drivers» causing the climate change and their «pressure».

Aggregated consideration of the DPSIR observance in Figure 2.11 shows good reporting of «drivers», «pressure» and «trends», which was not the case in the EE-AoA-CA. Thus they are better sources for decision makers to undertake «policy»,

Figure 2.11: DPSIR analysis of assessments on climate change (%)
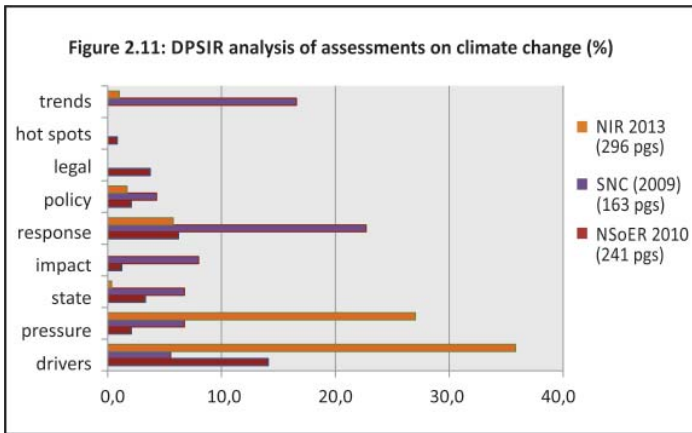
«legal» and further «response» measures towards climate change mitigation and adaptation.

2.2.3. Biodiversity

2.2.3.1. Overview of the reporting

Biodiversity monitoring is a complex aspect of the environmental monitoring, which is in most of the cases cannot be based on the

static observations. And, there are two areal peculiarity of the biodiversity monitoring: within and outside of protected areas.

Monitoring in protected areas (nature reserves and national parks) is the most consistent and continuous process of monitoring of the biodiversity in the country. The data reporting system is historically formed in use of a specific set

of indicators in the «Chronicle of Nature», reported by administrations of protected areas to the CFH MoEPWR.

The Chronicle of Nature is the annual summary of data on the status of the protected areas and biodiversity components, including protected plant and animal populations and protected nature sites. Some Reserves maintain such records for already 40-50 years and include ongoing data on the number of animals, biodiversity and dynamics of the ecosystem. However, it was always the problem that the Chronicle of Nature was the set of separate facts, results, measurements, animals' counts and other observations with very weak link to the ecosystem.

The reasons for the lack of information on biodiversity is based on outdated system of data and information gathering from protected areas, limited use of modern remote methods of the biodiversity monitoring and data gathering, absence of the network and facilities to collect relevant information outside of protected areas.

Data and information on biodiversity outside of protected areas are provided by CFH MoEPWR and the ASK mainly reflecting performance of the Forestry and the data of the hunting entities.

CFH presents its performance based on the data collected from its entities around the country on the land covered by forest, the total stock of standing timber, forest land with breakdown by the main dominant species (pine, hardwood, softwood, saksaul), data on reforestation, forest area and other wooden lands, including protected areas, on the ratio of the total forest area and other land covered by forest to the total land area, forest stock and composition by species in cubic meters.

Currently, the most comprehensive data on the status of biodiversity, ecosystems and landscapes, habitats for flora and fauna, as well as on biological resources of the country are in NSoERSs, published from 1991 to 2011. Another official source of information on biodiversity is the national reports on biodiversity to the Secretariat of UNCBD, produced once per 3-4 years.

The ASK based on the data from MoEPWR and its Committees, provides statistics on biodiversity, which are then used for reporting under MEAs and in NSoERs. The statistical compendiums EPSE 2007-2010 (2011) "Agriculture, forestry and fishery in the Republic of Kazakhstan 2007-2010" (2011) with statistics on biodiversity are published and accessible on-line.

The national report on the Implementation of Ramsar Convention on Wetlands is reported to the Conference of Parties of the Convention[27]. The last report was developed in 2008 and reported to the 10th Meeting of Parties. This report is available on the website of the Secretariat of the Convention in English.

The Second National Report on the implementation of the Cartagena Protocol[28] for the period from 2008 to 2011was prepared by the National Centre for Biotechnologies of the Committee of Science of the MES. Free access to the report is available on UNCBD web-portal.

2.2.3.2. Review and analysis

The NSoER-2010, he Fourth National Report to UNCBD (the 4th NR-CBD) and the EPSD 2007-2011 are the assessments reviewed and analysed on relevance to the UNECE indicators' set, on sub-topics and subjects provided by EEA.

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27 http://www.ramsar.org/pdf/cop10/cop10_nr_kazakhstan.pdf, pgs 2-3

28 http://bch.cbd.int/database/record.shtml?documentid=102592

The total coverage of the biodiversity in NsoER-2010 is 7.5% and in the EPSD 2007-2011 is 10.6%, while the 4th NR-CBD is entirely dedicated to the biodiversity (Figure 2.12).

Protected areas, forests and other wooded lands, threatened and protected species, trends in the number and distribution of selected species are the UNECE environmental indicators on biodiversity.

NSoER-2010 is the source covering these four indicators. The most widely presented among indicators are the forests and other wooded lands (44%) and protected areas are the second well covered indicator (22%) (Figure 2.13).

Availability of sectoral statistics on Forestry, data and information on the base of reporting by protected areas are the sources and the reason for comparably strong presence of these indicators in

Figure 2.12: Proportion of biodiversity in the selected assessments (%)

Figure 2.13: Proportion of biodiversity indicators in the selected assessments

Legend:
- Protected areas
- Forest and other wooded land
- Threatened and protected species
- Trends in the number and distribution of selected species
- Others
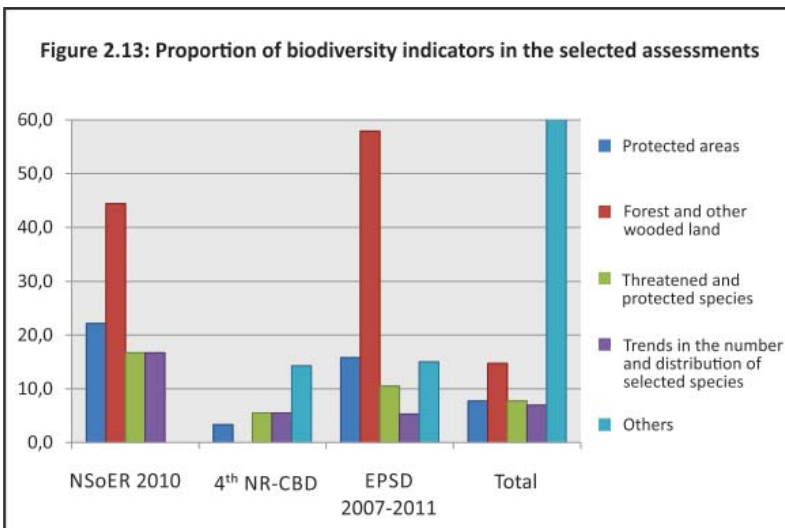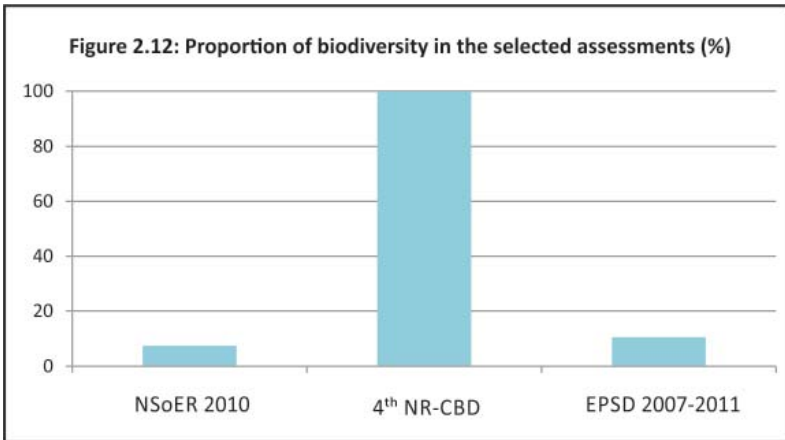
NSoER-2010. There are two separate sub-chapters dedicated to the above two indicators with clearly presented graphs.

Two remaining indicators are covered by one sub-chapter and with only one table dedicated to only one of the protected species[29]. Other data and information in this sub-chapter are sourced from the reports of hunting and fishing entities and this is descriptive information, mostly counting species.

The same is observed in the EPSD 2007-2011, which uses the same data and statistics as for NSoER. More than 50% of these statistics and data cover forests and wooded lands. Protected areas are covered for 15% and other two indicators less than 10% for each. Such a situation can be explained by the low availability of required data and information.

The 4th NR-CBD due to the focus on other priorities and its scope does not fully cover the UNECE indicators.

The summed up composition of selected assessments on biodiversity (Figure 2.13) in comparison to the set of the UNECE indicators shows low coverage of these indicators and presents almost 60% of the information not directly related or uncertain to these four indicators.

The set of sub-topics proposed by EEA includes three subtopics: species (fauna, flora), protected areas and ecosystems, and habitats. Then the «Species» are considered as protected internationally (CITES), protected nationally and invasive and alien ones. Protected areas, are also considered as protected either internationally or nationally.

In the NSoER-2010 as well as in the EPSD 2007-2011 (Figure 2.14), due to comparably

extended availability of statistics on forests, hunting and fishery, data and information from protected areas and about the species as the sub-topics are better presented than sub-topics of ecosystems and habitats. Meanwhile in both sources, information and data not relevant to the sub-topics presented by EEA makes more than 40% and up to 40%. («Others» in Figure 2.14).

Ecosystems and habitats in the EPSD 2007-2011 are presented comparably well (15.8%), because the lands under the forest and protected territories are counted as ecosystems and habitats. In the meantime the NSoER-2010 presents almost no description of ecosystems.

The 4th NR-CBD presents ecosystems and habitats (15%) and provides very weak presence of two sub-topics as species and protected areas, while prioritising the other sub-topics and subjects (28%).
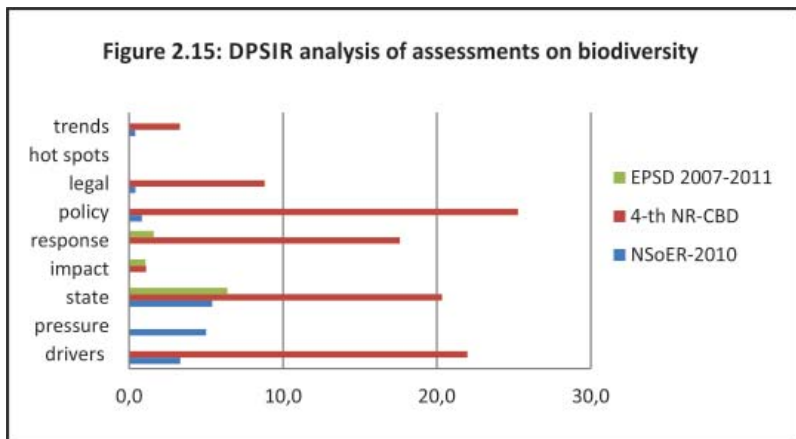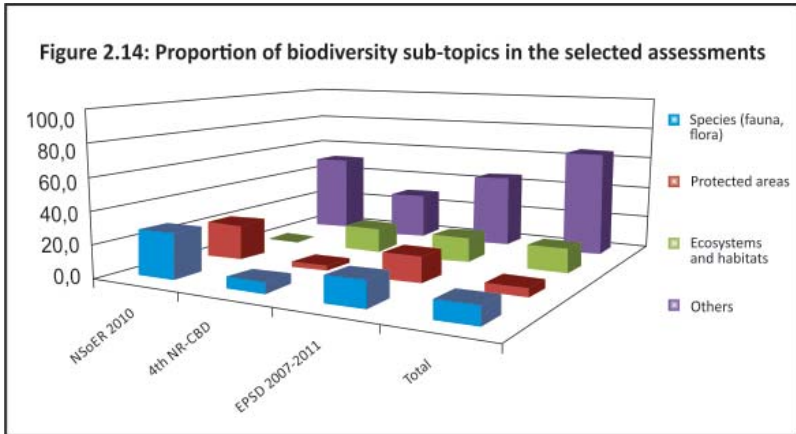
Consideration of other biodiversity assessments such as the national report to the Ramsar Convention might slightly change the picture, where the situation is better due to the presence of protected areas and species in the assessments. However, considering that three assessments per each thematic area were taken as the term for equal consideration of them on the base of the same number of sources.

The 4th NR-CBD in Figure 2.15 presents comparably good assessments on policy settings, on drivers, on the state, and then on the responses within the DPSIR framework. It also shows some emphasis on legal aspects of the biodiversity conservation and management, much lesser on trends and no focuses on the hot spots.

In the EPSD 2007-2011 it was difficult to classify statistics for drivers, pressure, legal aspects, trends and hot spots. Meanwhile, the state of the biodiversity, impact, and

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29 http://www.eco.gov.kz/doki/Monografy.pdf, pg 115

Figure 2.14: Proportion of biodiversity sub-topics in the selected assessments

Figure 2.15: DPSIR analysis of assessments on biodiversity

responses were found in the statistics presented in the EPSD 2007-2011.

The NSoER-2010 observes the state, policy, legal aspects, and trends in its biodiversity chapter[30]. However it does not contain any information on impact and responses. Drivers and pressure were included as the review of chapters on agriculture and land resources. It is to be noted that for the DPSIR analysis the NSoER-2010 consisting of 241 pages and EPSD 2007-2011 containing of 188 tables were fully reviewed.

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30 http://www.eco.gov.kz/doki/Monografy.pdf, Chapter 12, pgs: 105-119

2.2.4. Wastes

2.2.4.1. Overview of the reporting

The ASK and MoEPWR are in charge for producing extensive statistical reporting on the state of waste management in the country.

Basic statistical reporting on formation and disposal of the municipal and hazardous industrial wastes is done by municipalities and CERC MoEPWR and submitted to ASK.

EPSD-2007-2011 presents statistics on hazardous industrial and municipal wastes

in Kazakhstan. NSoERs are the other source of information on the state of waste management in Kazakhstan.

Kazakhstan submits regular reports on wastes under the three Conventions: Basel, Stockholm, and the Rotterdam Convention. IAC EP is responsible for reporting to the Secretariats of these conventions. The status of the reporting is presented in the Table 1, Annex 3.

2.2.4.2. Review and analysis

For the purposes of review and analysis the NSoER-2010, EPSD-2007-2011 and the National Report to Basel Convention on Controlling Transboundary Movement of Hazardous wastes and their Disposal for 2009 (NR – Basel Conv – 2009) have been selected.

As it was already mentioned, the NSoER-2010 and EPSD-2007-2011 have to be reviewed and analysed in comparison with the other thematic areas. It also should be noted that gradually the content of these two national documents has been improved due to the joint efforts undertaken to develop and promote Pan-European cooperation on environmental reporting and environmental statistics. These reports are also a subject for comparison of their
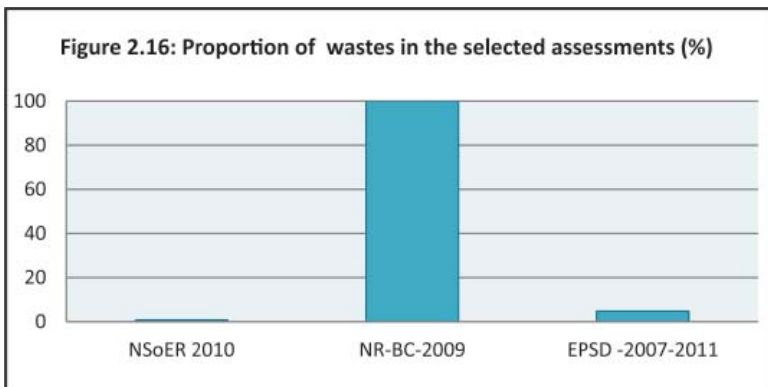
contents and the analysis of the state of reporting in relevant thematic areas among countries, where the current AoA is being conducted.
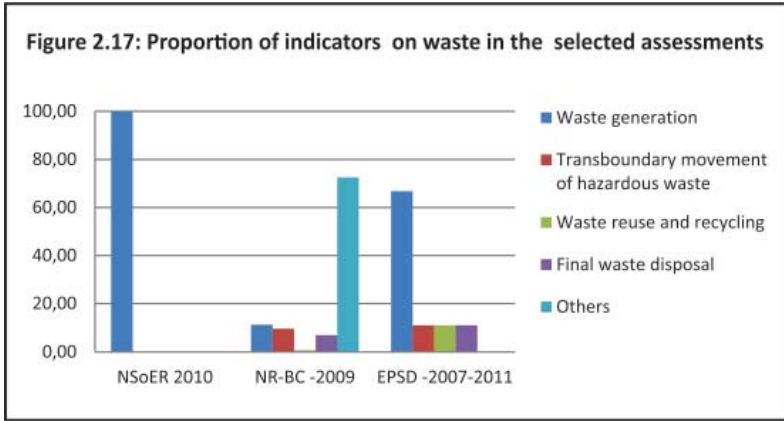
Figure 2.16 shows that the waste in NSoER-2010 makes less than 1% of its total volume. In EPSD-2007-2011 wastes make less than 5% and NR-BC-2009 is fully dedicated to waste assessment.

There are following four indicators on wastes in the UNECE set of environmental indicators: waste generation, transboundary movement of hazardous waste, waste reuse and recycling and final waste disposal.

In Figure 2.17 it is shown that the waste disposal is the only indicator found in NSoER-2010 and through the whole document consisting of two pages it was not possible to find any indicators related to wastes.

The NR-BC-2009 shows all four UNECE indicators, but at the rate less than 10% each and the waste reuse and recycling even less than 1%. Meanwhile, more than 70% of the report, which is supposed to be entirely dedicated to waste, is contained of information on other aspects of waste management, including the methodology, special questionnaire, and templates.

Figure 2.16: Proportion of wastes in the selected assessments (%)

Figure 2.17: Proportion of indicators on waste in the selected assessments

The EPSD-2007-2011 shows all indicators and various aspects of waste generation and mainly presented in the six tables, while the other three indicators each are presented in separate table bearing identical names with these indicators.

Selected assessments are consisted of a very limited information and data on the UNECE waste indicators. These assessments are presented as the short briefings with some tables, which make it quite difficult for using indicators for comparison and analysis; basically indicators are not used for their original purposes.

The EEA for the purpose of this assessment has proposed waste stream and waste management as the sub-topics and each of them comprise of the same four subjects as municipal/household, industrial, hazardous wastes, and the transboundary movement of the waste.

For classifying subjects either under waste streams or under waste management, it was found if assessments or statistics consider only quantity of generated waste and its trasboundary movement then these are the waste streams; and when assessments consider efforts on waste reuse and recycle, disposal, landfill management then these are the waste

management. Data and statistics on entities collecting and disposing waste were considered under the waste management.
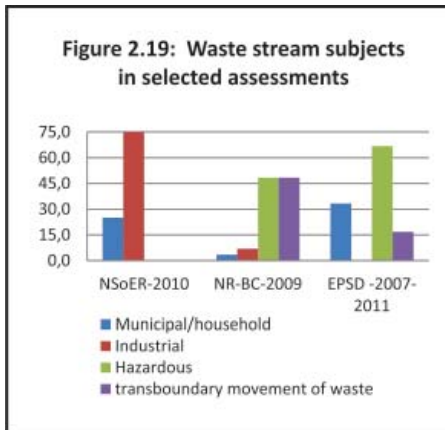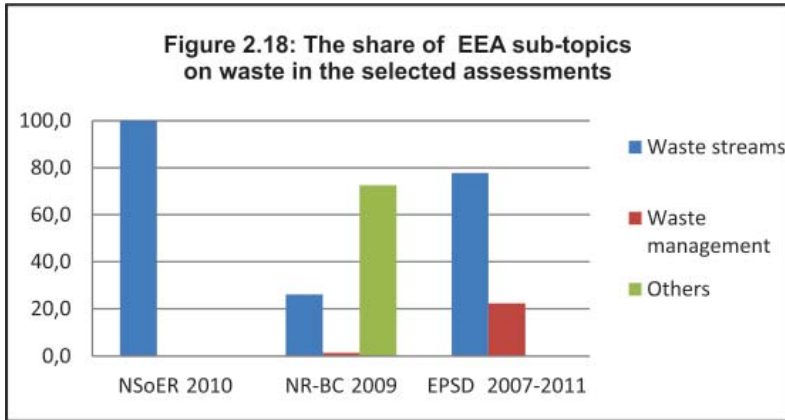
It was not possible to find subjects under the waste management in NSoER-2010 because it is almost entirely dedicated to describing the state of waste generation and the waste stream (Figure 2.18).

Reviewing the indicators of NR-BC-2009 revealed that more than 70% of the information in the document is devoted to the methodology and only 27% and 2% to the waste streams and waste management, respectively.

The EPSD-2007-2011 are consisted of some statistics on waste management presented in the form of several tables on waste recycling and disposal, and the list of entities collecting and disposing waste, but however up to 80% of statistics are on waste streams.

The NSoER-2010 considers the subject on waste streams mainly focusing on industrial and municipal/household wastes (Figure 2.19) and no waste management is regarded in the document (Figure 2.20).

The NR-BC-2009 comprising of limited factual information on wastes (Figure 2.18) and due to its scope makes focus on hazardous waste

Figure 2.18: The share of EEA sub-topics on waste in the selected assessments

Figure 2.19: Waste stream subjects in selected assessments

**Figure 2.20: Waste management subjects in selected assessments**

and its transboundary movement; it also includes limited information on industrial and municipal/household waste under the waste streams and waste management (Figure 2.19), making less than 2% (Figure 2.18), and presents evenly distributed information on municipal/household and hazardous wastes (Figure 2.20).

The EPSD-2007-2011, with limited consideration of waste management, presents only some statistics on municipal/household and hazardous wastes (Figure 2.20) and under waste streams (Figure 2.19) it presents statistics on hazardous wastes and their transboundary movement.

For DPSIR analysis, selected assessments on waste were considered separately in Figures 2.21 and 2.22. The reason for separation was the small scale (0% - 3,5%) of DPSIR observance in NSoER-2010 and EPSD 2007-2011 (Figure 2.21), comparing to NR-BC-2009, where the waste related state made up to 20% of the publication (Figure 2.22).

While analyzing NSoER-2010 and EPSD 2007-2011, entire publications were checked for the subject of the DPSIR chain presence in the documents. Some aspects of general legal, policy, and response measures on environmental protection were found reasonable to consider for wastes in the NSoER-2010.

Figure 2.21: DPSIR analysis of wastes in the selected assessments

Figure 2.22: DPSIR analysis of NR-BC-2009
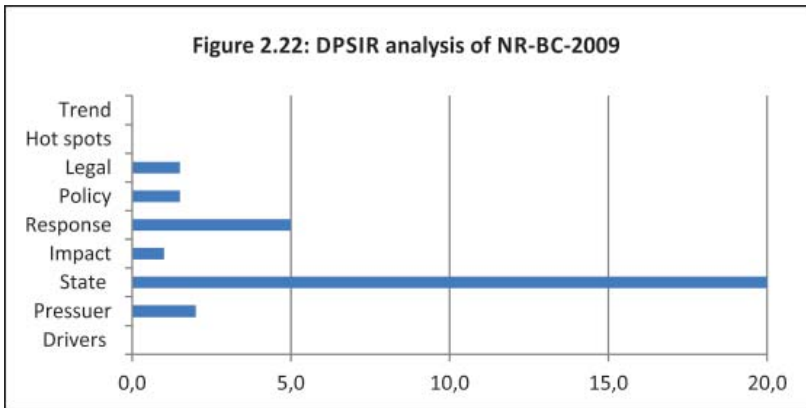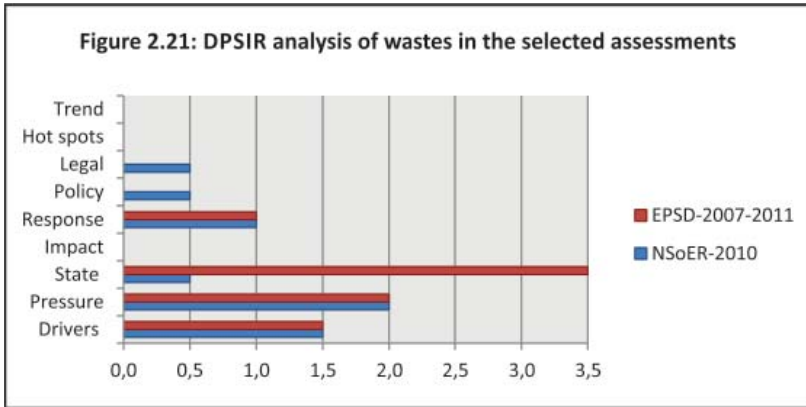
The chapter on waste and industries in NSoER-2010[31] was partly considered under the state analysis and the other half under the pressure. Introductory chapters describing general features and social-economic conditions[32] provide comprehensive overview of the remaining part of pressure and drivers.

The EPSD-2007-2011 demonstrates better presentation of the state of situation due to a number of tables on the waste statistics and some of the tables on waste recycling and disposal can be considered as the response measures. Presence of drivers and pressure were found in the chapter on social, economic and environmental factors[33].

The NR-BC-2009 is prevailingly focusing on the state of hazardous waste management and their transboundary movement. The documents are revealed to have some analysis on response, pressure, policy, impact, and legal aspects as well (Figure 2.22).

31 http://www.eco.gov.kz/doki/Monografy.pdf, Chapter 12, pgs 103-104

32 http://www.eco.gov.kz/doki/Monografy.pdf, Chapters 1-2, pgs:13-17

33 http://www.stat.kz/publishing/20121/ %D0%98%D0%BD%D0%B5%D1%80%D0% B0%D0%BA%D1%82%D0%B8%D0%B2%20 %D0%9E%D0%9E%D0%A1%2011.pdf, Chapters 2-4, pgs: 6-61

AN ASSESSMENT OF ASSESSMENTS

KYRGYZSTAN

3.1. SETTING THE SCENE

3.1.1. Country situation with assessments: post-Astana progress and trends

As it was mentioned in the Introduction, twenty eight assessments (Annex 1, Table 2) on air, climate change, biodiversity and wastes to be uploaded to the Virtual Library of the EEA EE-AoA web-portal have been identified. These assessments include:

- One NSoER for 2006-2011[34]
- Three national reports to MEA
- One national strategy[35]

- One national programme[36]
- One UNECE Guidelines[37]
- Four statistical compendiums
- Fourteen thematic publications, funded by the international organizations (UN System, World Bank, etc), and
- Three thematic publications by national institutions.

Kyrgyzstan is a Party to thirteen MEAs[38], including three UNECE Conventions. Kyrgyzstan implements its reporting obligations under the eleven MEAs and has not yet started reporting to Stockholm Convention (Annex 3, Table 2). Among MEA reports to be referred and assessed

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34 http://www.nature.kg/images/files/bookND_web.pdf

35 http://www.nature.kg/index.php?option=com_content&view=article&id=565%3A2013-01-25-09-38-35&catid=34%3A2009-01-28-16-47-09&Itemid=69&lang=ru

36 http://www.med.kg/Articles/ViewSection.aspx?ArticleID=383

37 http://www.unece.org/index.php?id=30339

38 http://www.nature.kg/index.php?option=com_content&view=article&id=37&Itemid=74&lang=ru

in the current AoA are the Second National Communication on Climate Change (SNC), Fourth National report to UNCBD[39], reports to Ramsar Convention and the UNECE Convention on Long-range Transboundary Air Pollution.

The NSoER-2006-2011 is the report based on environmental indicators[40]. The report consists of nine chapters including chapters on air pollution, climate change, biodiversity, and wastes – all these indicators have been assessed in the current AoA. The thematic area «Environment and health of population» has been introduced as an additional chapter to the report, which was not foreseen by the UNECE Guidelines. The report reviews applicability of all thirty six recommended indicators and fulfills existing gaps in the environmental data and information in compliance with the set of these indicators.

Statistical data/indicators of the National Statistical Committee (NSC) and the Agency of Hydrometeorology under the Ministry of Emergencies and Civil Defence (KyrgyzHydromet), data from the Department of Water Resources under the Ministry of Agriculture and Melioration (DWR MAM) and from several other agencies were collected, aggregated, and reported. Data and information of respective institutes of the National Academy of Sciences were also used in this report.

It was recommended to Kyrgyzstan by Astana EE-AoA to explore opportunities to improve the state of environment reporting[41] in compliance with the

relevant UNECE Guidelines. Therefore, new NSoER- 2006-2011 can be considered as implemented recommendation of the Astana EE-AoA.

Astana EE-AoA also recommends to Kyrgyzstan to revive nationally funded regular publication of NSoERs[42]. In this regard it is to be noticed that SoER type «Environmental Outlook of the Kyrgyz Republic»[43] published in 2009 was funded by UNEP and NSoER-2006-2011 was funded by UNDP-UNEP «Poverty and Environment Initiative»[44] (PEI) project in Kyrgyzstan. Therefore, above mentioned recommendation is still valid for the country.

Dependence of Kyrgyzstan on the official development aid (ODA) and international programmes and projects[45] and fourteen new assessments done by international development agencies uploaded to the EE-AoA Virtual Library also revealed the tendency of dependence of the country on ODA in undertaking environmental assessments.

One of the key recommendations of Astana EE-AoA to Kyrgyzstan as well as to the other Central Asian countries was to establish cooperation with the relevant EU institutions and other international organizations for development of SEIS[46].

Kyrgyzstan in cooperation with CAREC made certain progress in this direction. Inter-agencies working group on SEIS

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39 http://www.cbd.int/doc/world/kg/kg-nr-04-en.pdf

40 http://www.unece.org/fileadmin/DAM/env/europe/monitoring/Publications/Indicators_Assessment/documents/Publication.Indicators_Reporting._ECE-CEP-140_Eng_final.pdf

41 Europe's Environment – Central Asia – An Assessment of Assessments, CAREC, 2011, pg 73.

42 Europe's Environment – Central Asia – An Assessment of Assessments, CAREC, 2011, pgs 72-73.

43 http://www.nature.kg/images/files/eco.pdf

44 http://www.undp.kg/en/component/resource/article/1-projects/2094-poverty-environment-initiative

45 Europe's Environment – Central Asia – An Assessment of Assessments, CAREC, 2011, pg 72.

46 Europe's Environment – Central Asia – An Assessment of Assessments, CAREC, 2011, pg 73.

(SEIS WG) has been established, including officially appointed representatives of the Ministry of Economy (ME), SAEPF, NSC, KyrgyzHydromet, and the DWR MAM.

The SEIS WG was a platform to discuss gaps in data and information availability for NSoER -2006-2011 and to propose solutions to improve water and wastes statistics, among other components of the environmental statistics. Under the recommendations of SEIS WG the national activities on the SEIS related component of the EU AWARE project and the project on improvement of the environmental statistics on water by CAREC in 2011 and 2012 were designed and implemented.

Upcoming EU project on improvement of the environmental monitoring in Central Asia (MONECA) will contribute to the establishment of cooperation with SEIS WG in Kyrgyzstan as a platform for further promotion of SEIS in the country.
It was also recommended to Kyrgyzstan to explore opportunities for further integration of relevant recommendations of the Second EPR of Kyrgyzstan (2009)[47] to the relevant policies of the country.
In this regard, results of the current AoA in terms of review of recommendations made for thematic areas and analysis of the current state of environmental data and information collection and reporting will be useful for the further needs of the country.

3.1.2. The current state of environmental information and data flow

Environmental data and information in the country are aggregated and reported to MEAs and presented in the NSoERs. Initial data is gathered by NSC, KyrgyzHydromet,

SAEPF, and several other agencies and institutions.

The principal scheme of the environmental data and information flow among responsible governmental agencies and institutions as data providers and the general public, expert communities, international organizations and Secretariats of MEAs as data users is shown in the Chart 3.1.

In order to assure comprehensive reporting to MEAs all the, missing data and information are gathered in the project format within the ODA funded international projects.

Availability of the environmental data and information is an issue for Kyrgyzstan, because of limited narrow environmental monitoring base, covering only some parts of the country. Data gathering on emissions, wastewater and wastes is under the NSC and it requires considerable improvement. There is no significant difference between availability of data and access to the data and information. Usually, what is available and exists in the country is also accessible on-line on bellow web-resources.

In reality, the data and information gathering is a huge work undertaken by experts, usually employed for ODA funded projects to prepare reports to MEAs or NSoER. They spend enormous time and efforts to collect required data and information. Very often they start from the websites of MEAs in order to extract data from the previous reports, and then go to the websites of other international organizations and only after that they go to websites of the national institutions, where normally required data is very limited and not enough for producing reports.

There is an official procedure of written official requests, if required information is not accessible on-line. But usually as data are not available, requested governmental agency or national institution either

47 http://www.unece.org/env/epr/publications.html

Figure 3.1: Principal scheme of the environmental data and information linkage and flow in Kyrgyzstan
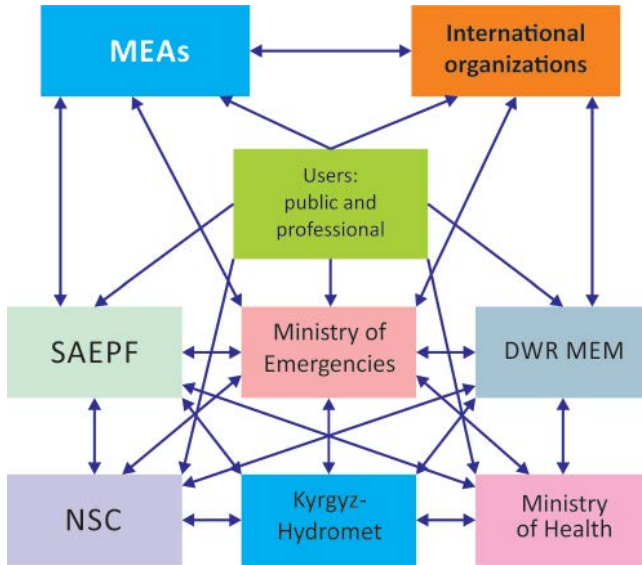
provides roughly estimated data or does not provide requested information at all. For delivering estimated data, there is a need in additional time and resources to employ experts to produce these data. In some cases, when data is kept in hard copies, it takes time for responsible agency to provide soft copies of it.

There is a legal requirement to exchange data and information among governmental agencies for reporting purposes to MEAs, which is also not effective because of the above mentioned issues with data availability.

Most of the environmental data used for various reporting to MEAs and NSoER differed from each other but mainly data are available for the period 1995-2008. Data for that period was compiled and made available due to the last Statistical Compendium «Environmental protection in the Kyrgyz Republic for 2000-2006»[48]

48 http://www.caresd.net//site. html?en=0&id=21962

published in 2008 under the financial support of UNDP. It is still the most comprehensive and full environmental data source for Kyrgyzstan. The fact that the SNC – KG to UNFCCC and the Fourth National Report to UNCBD are consisted of good range of environmental data produced in 2008 also explains why most of the data are available only before 2008. This is another evidence of project and ODA dependence of Kyrgyzstan when it comes to environmental data and information gathering and aggregation.

In order to improve data and information availability, it is necessary, first, to establish the system of effective data gathering and its exchange among responsible governmental agencies, second, to develop facilities for data digitizing and storage.

One of the ways of improving data availability could also be in further improvement of capacities of NSC with further improvement of the statistical reporting directly from local

Table 3.1: Key web-resources on environmental data and information in Kyrgyzstan

Agency/institution and its websites	Key environmental information and data
SAEPF http://www.nature.kg/	– Brief overview of the state of environment, including on: • Air quality • Climate change • Water and land resources • Biodiversity and forestry • Protected areas • Wastes; – Reports to Aarhus Convention – Publications (in total 27), including NSoER-2006-2011, SNC-Kg
KyrgyzHydromet http://www.meteo.ktnet.kg/	– Air quality for four cities (monthly updates) – Water quality for Chui River basin
NSC http://www.stat.kg/	– Statistical compendium: Kyrgyz Republic 2007-2011, including: • air emissions • wastes, • forests; – MDG indicators – Country development indicators
Web-Portal CARNET http://www.caresd.net/	– Publications

entities, authorities, and institutions to local statistical departments.

Table 3.1 presents the most valuable national web-resources with environmental data and information. CARNET is a Central Asian web-portal in the field of environment and sustainable development. It contains «Publications» section with sub-sections for each Central Asian countries including Kyrgyzstan.

Major on-line sources of the environmental data and information are the website of the SAEPF, NSC, KyrgyzHydromet, and UNDP funded environmental web-portal CARNET. All the sources are available only in the Russian language. There is no national web-resource with uploaded national reports to MEAs. These reports can be found on websites of respective MEAs only.

3.1.3. Brief overview of the institutional settings and funding of the environmental reporting

The SAEPF with its subsidiaries is responsible for producing most of the reports under MEAs. DWR MAM is responsible for reporting to UNCCD, KyrgyzHydromet and NSC participate in reporting to UNECE Convention on Long-range Transboundary Air Pollution and NSC also shares responsibility on reporting on wastes.

Annex 3 Table 2 shows that for the reporting to some of the MEAs, Kyrgyzstan uses GEF funding through UNDP and UNEP. SNC was funded through UNDP/GEF and ongoing preparation for the Third National Communication to UNFCCC funded by UNEP. Development of the Fourth National Report to UNCBD (2008) was funded by UNDP.

The SAEPF has produced and published NSoERs in 1997, 2000, and in 2004 using own funding. Then it was updated online on the periodic base but was not published untill 2009. In the same year the report «Environmental Outlook of the Kyrgyz Republic»[49] was published using UNEP funding. It reviewed the state of environment and made an attempt to develop it using the DPSIR framework[50].

Funds for producing NSoER 2006-2011 were provided by UNDP/UNEP PEI project. This report was also approved by the special Resolution of the Government of Kyrgyzstan (Resolution № 553 dated August 7, 2012). This Resolution also confirms responsibility of SAEPF in further development of indicator-based NSoERs with three-year periodicity and using national funding from the National Nature Protection Fund.

The role of ODA and international organisations in production of assessments is crucial. Fourteen assessments uploaded to the Virtual Library were produced within the international projects implemented in Kyrgyzstan.

3.2. REVIEW AND ANALYSIS OF ASSESSMENTS IN THEMATIC AREAS

3.2.1. Air

3.2.1.1. Overview of the reporting

The key national agencies responsible for monitoring, collection and storage of data and information on air in Kyrgyzstan are the followings:

- NSC – data and statistics on the emission of air pollutants from the stationary sources;
- KyrgyzHydromet – data and information on air quality;
- Inspection on environmental and technical security - control over air pollution;
- SAEPF - reporting to MEAs, national environmental policy and reporting, and international cooperation.

The data and statistics on emission of air polluting substances from the stationary sources are based on statistical reporting prepared by air polluting entities and enterprises on sources and the quantity of the emission using statistical form – «on protection of the atmospheric air» officially approved by the order N14 of the NSC from 02.07.2010.

The data from the stationary sources includes: solid, gaseous and liquid substances, including volatile organic compounds. There are no reported data on heavy metals, POPs and some of the solid compounds.

In spite of the shortage of reporting on some pollutants, these data show the overall picture and trends on polluting sources and enterprises. There is a range

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49 http://www.nature.kg/images/files/eco.pdf

50 http://www.unece.org/fileadmin/DAM/env/europe/monitoring/Publications/Indicators_Assessment/documents/Publication.Indicators_Reporting._ECE-CEP-140_Eng_final.pdf, pg 66.

of private sector entities, including in agriculture, that are not yet reporting to NSC on air pollution.

Then NSC publishes statistics on air pollution in several publications, including: Kyrgyzstan in Figures[51], Statistical Yearbook of Kyrgyzstan[52], Social Trends in Kyrgyzstan[53], and in the Environmental Protection in Kyrgyzstan[54], which are published periodically once in 3-5 years. All publications are accessible online.

KyrgyzHydormet is regularly publishing a yearbook on the state of air pollution in the cities of Kyrgyzstan and on the background concentration of air polluting substances in the cities of Kyrgyzstan. Information presented monthly is accessible on the website of KyrgyzHydromet at www.meteo. ktnet.kg/environment_air.php.

Published data cover five major cities of the country, where 64% of country's entire population is concentrated. The data is sourced from the fourteen monitoring stations and covers only five polluting substances: nitrogen dioxide, sulphur dioxide, nitrogen oxide, ammonia and formaldehyde.

The National Ozone Centre collects data, analyzes, and develops reports on ozone depleting substances and submits them to the Secretariat of Montreal Protocol. Kyrgyzstan does not produce and correspondingly does not export ozone depleting substances. However it imports them as substances themselves or as compounds. The State Custom Service

under the Government of Kyrgyzstan quarterly reports to SAEPF on import and export of ozone depleting substances, including data on importers and exporters for reporting purposes to the Secretariat of the Montreal Protocol.

Kyrgyzstan is the Party to the UNECE Convention on Long-range Transboundary Air Pollution (Annex 3, Table 2). The Secretariat on the base of data received from its Parties publishes regular reports on «Transboundary air pollution by major polluting substances (S, N, O_3)» and makes them available on the website of the Convention.

So far, there is no monitoring and no data collection on air pollution from the mobile sources in the country. Therefore, for the purposes of reporting within the NSoER 2006-2011, the basic emission from the mobile sources was estimated using recommendation of Intergovernmental Panel on Climate Change. However, there is a problem with obtaining required data on fuel consumption and vehicle fleet in the country.

The SAEPF is the agency responsible for the development of NSoERs and the last NSoER-2006-2011 including the chapter on air quality and pollution[55], which was developed using the UNECE Guideline on indicator-based reporting[56] as well as data and information mentioned above.

3.2.1.2. Review and analysis

The NSoER 2006-2011, Statistical Yearbook of Kyrgyzstan 2006-2010 (St-Y-2006-2010) and the National Report to the UNECE Convention on Long-range Transboundary Air Pollution for 2010 (NR-TAP- 2010) were

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51 http://stat.kg/images/stories/docs/tematika/ svod/KG%20v%20cifrah.pdf

52 http://stat.kg/images/stories/docs/tematika/ svod/Yearbook%202007-2011.pdf

53 http://stat.kg/images/stories/docs/tematika/ svod/Soz.%20Trendy%202006-2010.pdf

54 http://www.caresd.net//site. html?en=0&id=21962

55 http://www.nature.kg/images/files/bookND_ web.pdf. Chapter 1, pgs: 8-21

56 http://www.unece.org/fileadmin/DAM/env/ europe/monitoring/Publications/Indicators_ Assessment/documents/Publication.Indicators_ Reporting._ECE-CEP-140_Eng_final.pdf
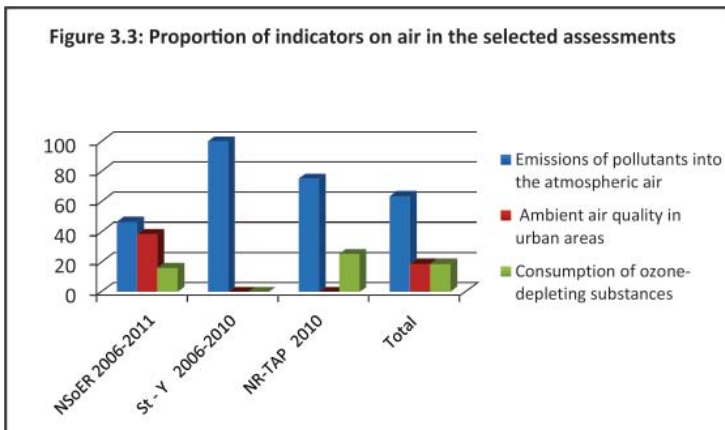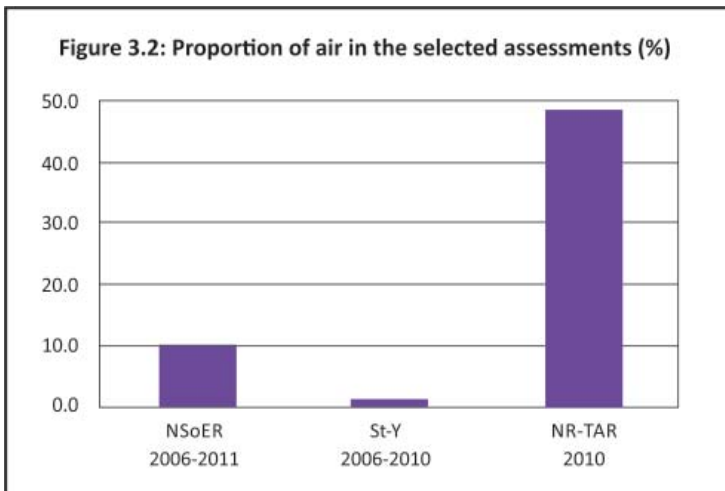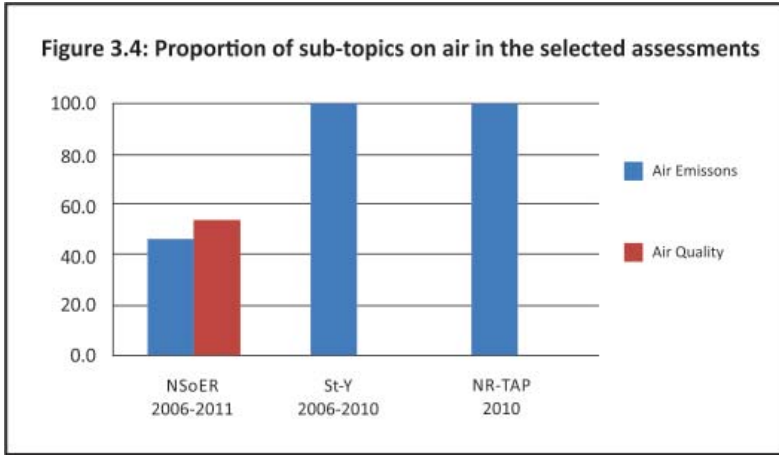
selected for the review and analysis of the air in the selected assessments.

Figure 3.2 shows proportion of air in the selected assessments, which is not high in NSoER 2006-2011 (11%) and less than 1% in the Statistical Yearbook 2006-2010 and makes almost half of the NR-TAP-2010, and another half of the report is dedicated to the general features and methodology.

Among UNECE indicators on air pollution (Figure 3.3), the emission of air pollutants into the atmospheric air is well presented in all the three assessments. Ambient air quality in urban areas is presented only in NSoER-2006-2011, where consumption of ozone depleting substances appears as well. These two make around 40% and 17% respectively in the relevant chapter of NSoER 2006-2011. Consumption of ozone depleting substances makes a little more than 20% in NR-TAP-2010. Statistical Yearbook 2006-2010 provides only two tables on air entirely focusing on the emission of pollutants into the atmospheric air.

Figure 3.2: Proportion of air in the selected assessments (%)

Figure 3.3: Proportion of indicators on air in the selected assessments

Figure 3.4: Proportion of sub-topics on air in the selected assessments

Comparison with the sup-topics proposed by EEA (Figure 3.4) shows that the NSoER- 2006-2011 makes emphasis on the sub-topics proposed by EEA with slight prevalence of air quality compared to air emission. The NR-TAP -2010 and the Statistic Yearbook 2006-2010 are fully focused on Air Emission.

Further analysis of both sub-topics under the same set of subjects (related impact,

related monitoring, then per sector, and per pollutants) is shown in Figures 3.5 and 3.6.

Observing the vast prevalence of the air emission over the air quality in the selected assessments are mainly focused on air emissions per pollutants (Figure 3.5).

NSoER-2006-2011 also assesses per sector air emission, while NR-TAP-2010 focuses on related impacts of the air emission.

Figure 3.5: Proportion of air emission subjetcs in the selected assessments

Figure 3.6: Proportion of air quality subjects in the selected assessments
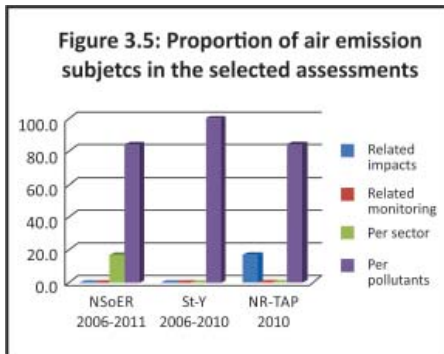
Very limited presence of air quality in NSoER-2006-2010 (Figure 3.6) is shared by per pollutants' air quality (70%) and the related impact (30%). Other subjects of the air quality are not presented in the selected assessments.
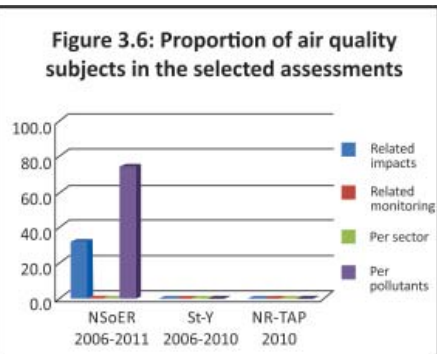
Limitation and unavailability of required data and information are the main reason of difficulties for conducting assessments on air emission by the sector. The major reason of lack of proper data and information is poor monitoring of air

emission from the stationary sources as well as lack of relevant national statistical reporting by NSC. Pollution of air by the emissions from the mobile sources is evaluated, although collection and use of data on vehicle fleet is restricted within the legal framework of the country.

The situation with air quality monitoring and data reporting is even worse. Per pollutants data are collected based on the monitoring conducted by KyrgyzHydromet. There is no data collection and respectively no reporting in the country on such subjects as per sector air quality.

Absence of reporting on the results of relevant monitoring both, on air emission and the air quality is explained by the absence of the requirement to prepare reports for NSoER-2006-2010 and NR-

TAP-2010. But however, basic monitoring is conducted and its major results can be provided upon certain requirements.

The DPSIR analysis of selected assessments (Figure 3.7) shows that the Statistical Yearbook 2006-2010 with its two tables on per pollutants' air emission is entirely on the air related pressure.

The NSoER 2006-2011 focuses on air related drivers (7%) and pressure (7%), observes the state of situation (4%), impact (2%) and the policy (2%) on air quality. Chapters on energy sector and transport were reviewed to count pages to be presented as drivers for the air pollution.

The NR-TAP-2010 comparably well observes the DPSIR with better focus on pressure and in a descending order on air related state, impact, responses and policy.

Figure 3.7: DPSIR analysis of the selected assessments on air
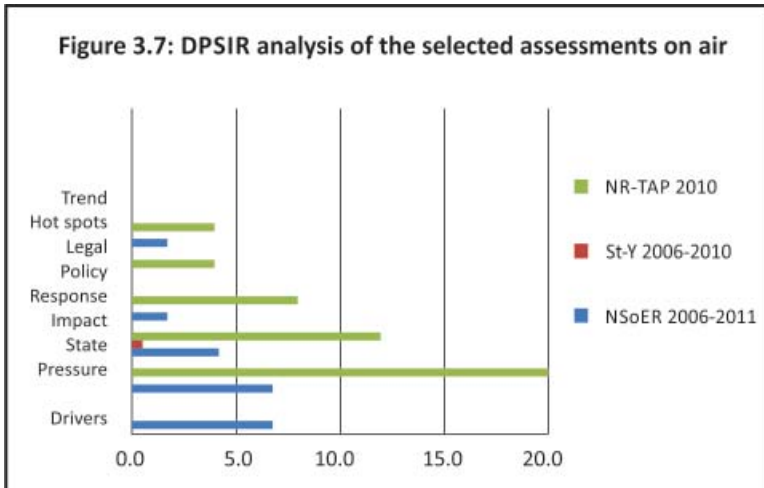
3.2.2. Climate change

3.2.2.1. Overview of the reporting

As a Party to the UNFCCC Kyrgyzstan is reported the First (FNC) and the Second National Communications (SNC) on climate

change to the Secretariat of the convention in 2003 and 2008, respectively.

Collection of data and when it is not possible then estimation of the GHG emission are carried out in the country only within above mentioned two Communications prepared and

implemented as part of the relevant UNDP/ GEF projects.

Within SNC the Inventory of GHG emission for 2001-2005 was made for seven provinces and two major cities of the country. The Inventory includes emission of the following green house gases: carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydro fluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF6). It is also included the precursor gases: carbon monoxide (CO), nitrogen oxides (NOx), and non-methane volatile organic compounds (NMVOC) and sulphur oxides (Six).

Since 2005 the inventory of GHG emission was not conducted in the country and no further data on it was gathered and consolidated. The Third National Communication (TNC) is currently under development and within this document the data on GHG emission is to be updated and reported.

KyrgyzHydromet regularly monitors the air temperature on one hundred fifty four stations. The network covers all provinces and major settlements of the country. However, there is a problem with accurateness of data due to considerable reduction of the number of stations.

KyrgyzHydromet regularly monitors atmospheric precipitations and aggregates data by major cities and provinces. Currently there are thirty hydromet stations that operate to monitor situation on air precipitation but however collected data and information are not aggregated, hence it is difficult to use them for a certain needs at the national level. Some data on air temperature and atmospheric precipitations is available on the website of KyrgyzHydromet at www.meteo.ktnet.kg.

The NSoER 2006-2011, which is indicator-based report[57], provides data and information on climate change. The information on air temperature and atmospheric precipitations is based on relevant data of KyrgyzHydromet, which is provided on the base of the official requests from SAEPF.

Chapter on GHG emission is developed on relevant data and information made available by SNC. There is an additional topic on natural weather hazards in the climate change chapter of the NSoER 2006-2011, which was added due to its high relevance for Kyrgyzstan.

The NSC does not work with climate change data and statistics yet. However, the situation is to be changed soon. There is the State programme on development of national statistics for 2010-2014, which foresees improvement of the national environmental statistics in accordance with the UNECE Guidance on environmental indicators for EECCA countries, including climate change.

It is to be noticed that NGOs in Kyrgyzstan work on collection and distribution of data and the information on climate change. They develop publications on different aspects of climate change. There is an informal network of NGOs – INFOCC, which unites the group of relevant experts and organizations and focuses on raising awareness on the international processes of climate change mitigation and adaptation and relevant practical steps.

International organizations are also active in Kyrgyzstan in assessing climate change mitigation and adaptation and they often

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57 http://www.unece.org/fileadmin/DAM/env/ europe/monitoring/Publications/Indicators_ Assessment/documents/Publication.Indicators_ Reporting._ECE-CEP-140_Eng_final.pdf

Figure 3.8: Proportion of climate change in the selected assessments
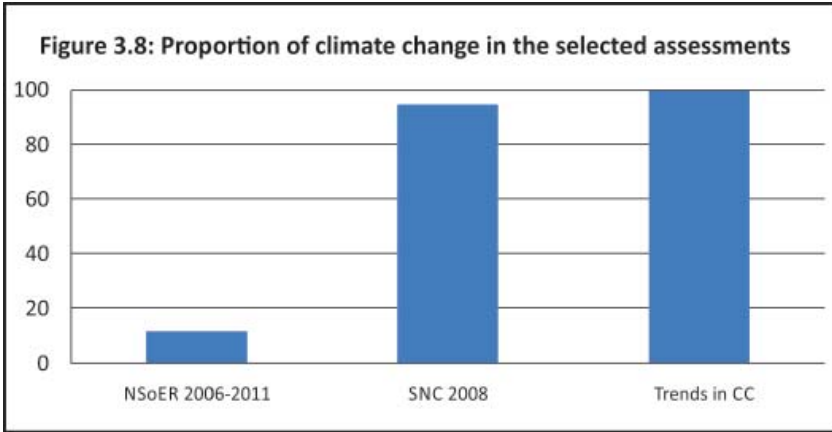
support activities of experts and NGOs involved in climate change assessments.

3.2.2.2. Review and analysis

The NSoER-2006-2011, SNC-2008 and the publication «Climate change in Kyrgyzstan: analysis of trends in impact and adaptation in Kara-Kulja district of the Osh Province»[58] (Trends in CC) published in 2012 were selected for conducting the review and analysis.

The last publication is produced by the Public Foundation «MSDSPKG» in official partnership with KyrgyzHydromet within the project «Improvement of climate change adaptation related sustainability of mountain communities in Kyrgyzstan», which was funded by Aga Khan Foundation.

Official partnership with KyrgyzHydromet and the use of official data of KyrgyzHydromet was the main reason to include this assessment for the review and analysis. Also the tendencies of climate change have been selected for the review due to the special publications on temperature and air precipitations change
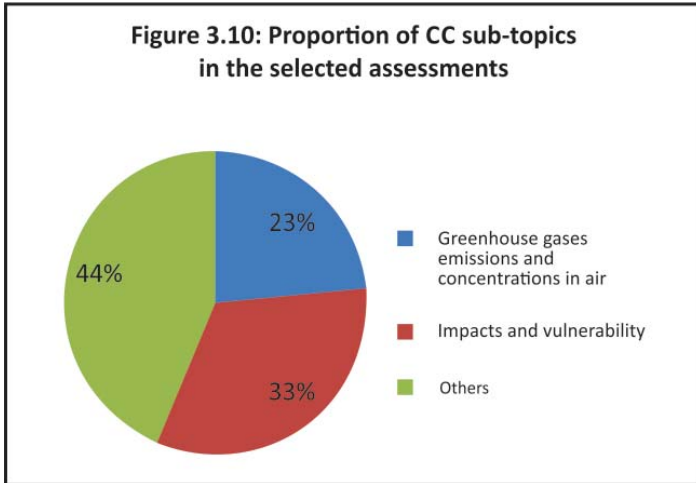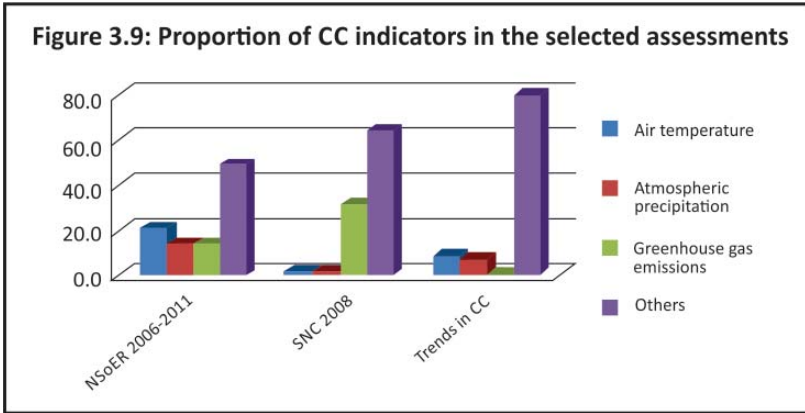
that have been already considered in the previous reviews.

It is also to be mentioned that the last publication does not cover the whole country, but it may show – how the available data of KyrgyzHydromet is to be used for analysis of climate change in different scales within the country.

The proportion of climate change in the selected assessments is presented in Figure 3.8. The climate change makes 12% in NSoER 2006-2011, 94% in SNC and the Trends in CC is entirely devoted to climate change.

Proportion of the UNECE indicators on climate change is shown in Figure 3.9. Up to 50% of information contained in the NSoER – 2006-2011 are provided in compliance with the UNECE set of indicators, including 20% of information on air temperature, about 15% on atmospheric precipitations and on GHG emissions. The other 50% of information provided in the document is shared evenly among distribution of the climate change within the country, natural hazards caused by climate change and the other impacts of climate change, such as on human health.

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58 http://www.infoik.net.kg/images/files/ cc_analysis_ru.pdf

Figure 3.9: Proportion of CC indicators in the selected assessments

Figure 3.10: Proportion of CC sub-topics in the selected assessments

SNC, because of its scope, makes considerable focus on the GHG emissions (32%) among the UNECE climate change indicators, while air temperature and the atmospheric precipitations make less than 2% each. Meanwhile 64% of the SNC is on the other climate change aspects or commitments towards its mitigation or adaptation.

Trends in CC focuses on air temperature and atmospheric precipitations by 9% and 7% respectively, while, in a view of its objectives and scope, does not make any focus on the GHG emissions. More than eighty percent (84%) of the publication is dedicated to the climate change impact, scenarios of change, and adaptation measures.

As it is shown in Figure 3.10, the sub-topics proposed by EEA covers a little more than half (56%) of the climate change in the selected assessments.

The Figure 3.11 shows subjects of GHG emission in the selected assessments. The NSoER 2006-2011 is equally focused on GHG emission per pollutants and per sector (each 50%) and does not mention anything about the GHG emissions related monitoring.

Figure 3.11: GHG emission in selected the assessments
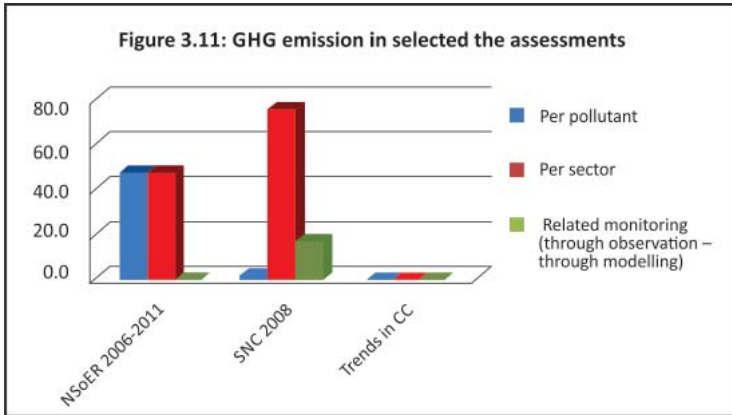
The SNC focuses mainly on per sector GHG emission (80%). Per pollutants' GHG emission makes less than 2%, meanwhile the related monitoring is close to twenty percent (18%). Related monitoring is reflected in SNC, since it was an objective to describe the state of monitoring, data collection and the methodology of estimation used. Trends in CC, due to the different objective, do not focus on GHG emission at all.

The impact and vulnerability, as it is shown in Figure 3.11, in NSoER-2006-2011 focuses on the state of the impact and the vulnerability through describing natural hazards, caused by the climate change and then on some aspects of its impact, but not on related mitigation and adaptation measures.

The SNC is equally focused on mitigation and adaptation (50%), related measures and others (50%) and dedicated to the state of impact, risks and vulnerability to climate change.

Trends in CC, as it is focused on adaptation to climate change, makes an assessments of the state of impact (48%) and related adaptation measures (52%).

The NSoER 2006-2011 in DPSIR analysis (Figure 3.13) considers drivers (8%) for

**Figure 3.12: Impact and vulnarability in the selected assessments**
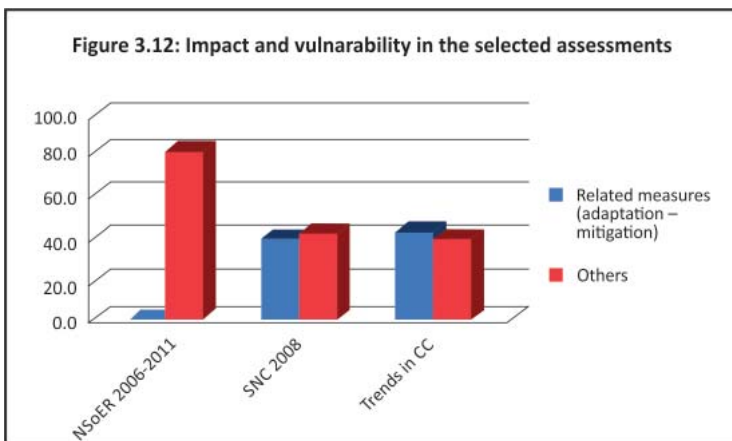
which the energy, transport and wastes chapters are analysed, the pressure, state, impact, response and policy issues are prevailed in the descending order.

The SNC maximally focuses on climate change related pressure (28%) through the inventory of the GHG emissions and through the national circumstances describing the economy of the country, presents "drivers" (9%). It does not focus much on climate change related state, but well considers the impact of the climate change (16%). It also proposes mitigation and adaptation response measures (8%). The SNC, due to its objectives, considers climate change related trends (11%).

Trends on CC as a special publication analysing the climate change effects and

Figure 3.13: DPSIR analysis of the selected assessments on climate change
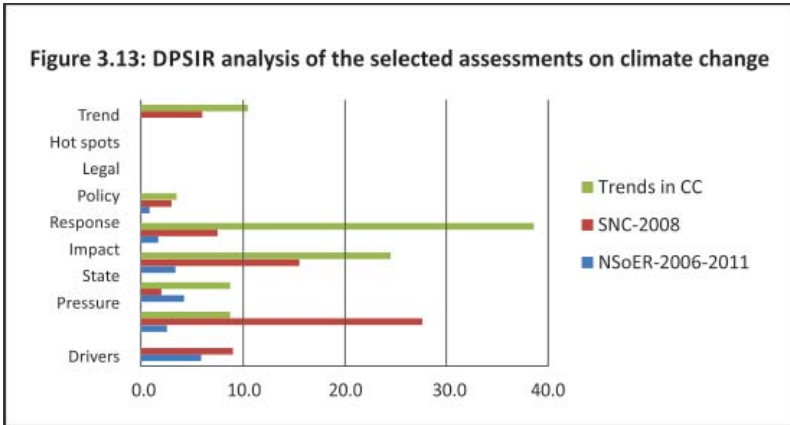
proposing the adaptation measures, considerably focuses on the impact (25%) and on proposed response measures (38%). While assessing the climate change it stronger focuses on climate change trends (12%) comparing to the state of climate change (8%) and the pressure causing it (8%).

3.2.3. Biodiversity

3.2.3.1. Overview of the reporting

The SAEPF is responsible for reporting to the several MEAs on biodiversity (Annex 3, Table 2), including on:

- The Convention on Biological Diversity (UNCBD);

- The Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitats;

- The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES);

- The Cartagena Protocol on Biosafety under UNCBD.

Except CITES, other reports are assessment type of reports, however part of them are fulfilling the special templates and questionnaires.

The Fourth National Report to UNCBD (2008)[59], National Report to Ramsar Convention (2012) and NSoER 2006-2011 are the reports on the base of which

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59 http://www.cbd.int/doc/world/kg/kg-nr-04-en.pdf

the reporting on biodiversity is to be overviewed here.

Reports are prepared in accordance with the approved format of the respective conventions. The process of data and information gathering is based on the written requests to the responsible authorities and entities.

It is a usual practice within responsible organization to have round tables, where all data and information are discussed analysed and summarised and draft version of the documents are circulated among concerned stakeholders. The 4th National Report to UNCBD was done under the relevant project funded by UNDP. Expert work on data collection and information gathering is usually crucial for the development of reports.

Statistical reporting made by NSC is an important data source for reporting on biodiversity in the country. NSC collects statistical reports from the Hunting Department of SAEPF and hunting entities on number of species, their habitats, on measures to protect species on their territories.

The NSC also collects reports from the Forestry entities on the expenses to protect forests and species, on the state of forest lands and their use. The third form of the statistic reports collected by NSC is from the administrations of protected areas on protected species and their habitats. Relevant statistics are available on the website of NSC.

The NSoERs are the assessments for which data and information from the NSC and all the other responsible agencies and entities are collected and reported.

The national statistics and reports on the progress of achieving Millennium Development Goals include information on protected areas as well.

International projects implemented by Food and Agriculture Organisation of UN (FAO), World Bank (WB) produce assessments on biodiversity, including forest resources.

3.2.3.2. Review and analysis

For the purposes of review and analysis the NSoER-2006-2011, the 4th National Report to UNCBD (NR CBD-2008) and the National Report on the state of genetic resources of forests (NR GRF-2012)[60] published in 2012 within activities of FAO in Kyrgyzstan were selected.

In NSoER 2006-2011 the biodiversity makes twelve pages and 6.12 % of its total volume. NR-CBD-2008 and NR-GRF are fully dedicated to the biodiversity.

The share of UNECE indicators on biodiversity is presented in Figure 3.14. It shows that NSoER 2006-2011 are fully focused on the UNECE indicators and considers them at the rate from 17% to 33%. The most focused are threatened and protected species and less focused are Forest and other wooded lands.

The 4th NR-CBD-2008 shows UNECE indicators at comparably low level and mostly focuses on other aspects of biodiversity protection and management (66%). However considerably enough information on indicators can be found in the document.

The NR-GRF-2012, due to its scope, focuses on numbers of productive and mostly wooden species and their distribution (54%). Forests and wooded land makes 8% of it and for more than thirty five percent it considers other aspects of genetic resources of forests.

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60 http://www.nature.kg/images/files/ndgenles.pdf

As for the EEA sub-topics such as protected species and areas, ecosystems and habitats (Figure 3.15) the NSoER-2006-2011 within its twelve pages on biodiversity gives priority to protected species (58%), then to protected areas (25%) and the last to ecosystems and habitats (17%).

Description and data on species is the leading sub-topic (19%) in the 4th NR-CBD-2008. Protected areas and then ecosystems and habitats make 12% and 6% respectively. In spite of relatively low proportion of ecosystems in the selected assessments, current AoA makes an effort

Figure 3.14: Proportion of biodiversity indicators in the selected assessments

Figure 3.15: The share of EEA sub-topics in the selected assessments
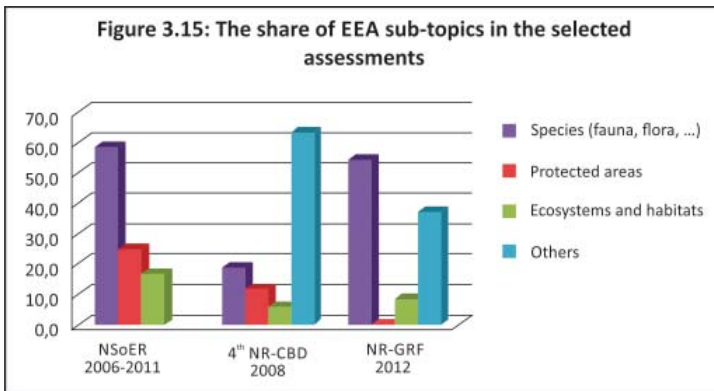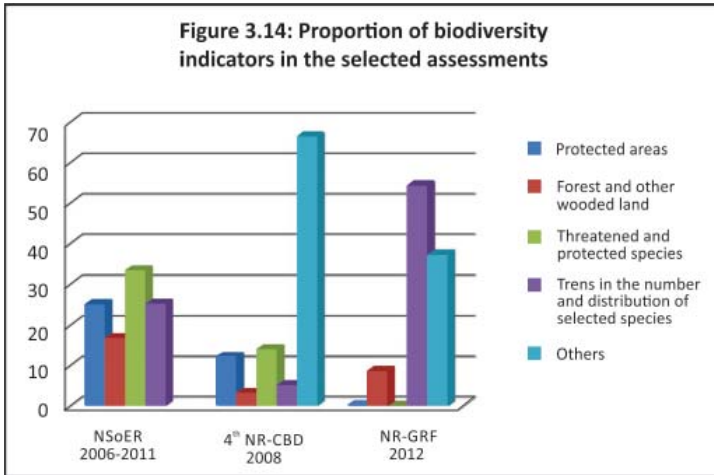
to focus on ecosystems and habitats and six pages of the document are dedicated to the description of their state as well as objectives towards protection issues. Major part of the assessment (63%) is dedicated to other aspects of biodiversity protection and management, including policy measures,

international cooperation, international projects and others.

The NR-GRF-2012 is a special publication, which is focused on species as genetic resources of forests and therefore the species make more than fifty percent in this assessment. Overall description of forests

Figure 3.16: Proportion of species in the selected assessments
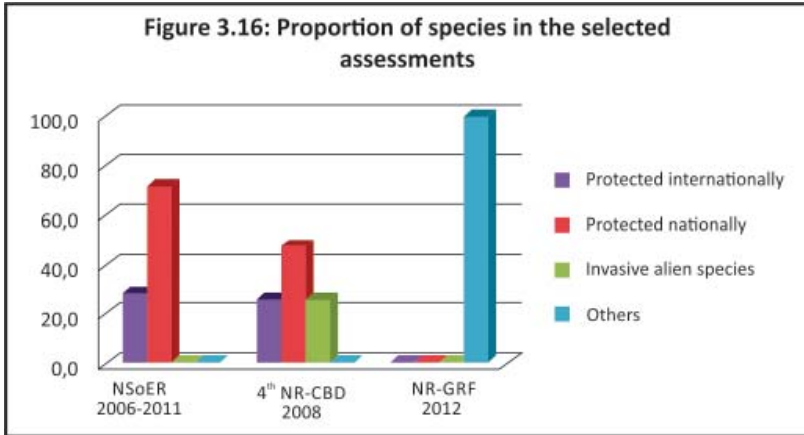
and their existing state is presented in Figure 3.15 as ecosystems and habitats (8%). More than thirty five percent of the assessment is about management aspects of the genetic resources, relevant cooperation and capacity building, policy and legal measures.

As for the subjects under the sub-topics provided by EEA, the share of species, considered as protected internationally and nationally, invasive and alien are in Figure 3.16.

The NSoER-2006-2011 focuses only on the species either protected internationally

(29%) or nationally (71%) and it makes no focus on invasive alien species.

The 4th NR-CBD-2008 by 25% considers species protected internationally and invasive alien species and makes stronger focus on the species protected nationally (50%).

The NR-GRF-2012 is well focused on species, but neither on protected species nor on invasive alien species. It considers only wooded species for their productivity, genetic value and capacity.
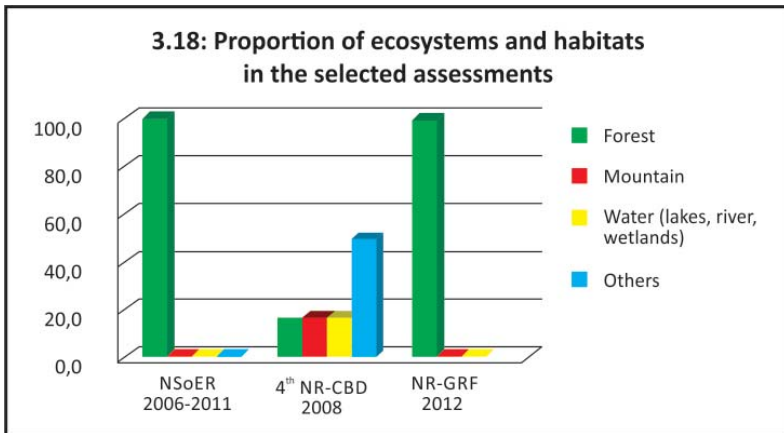
Figure 3.17: Proportion of protected areas in the selected assessments
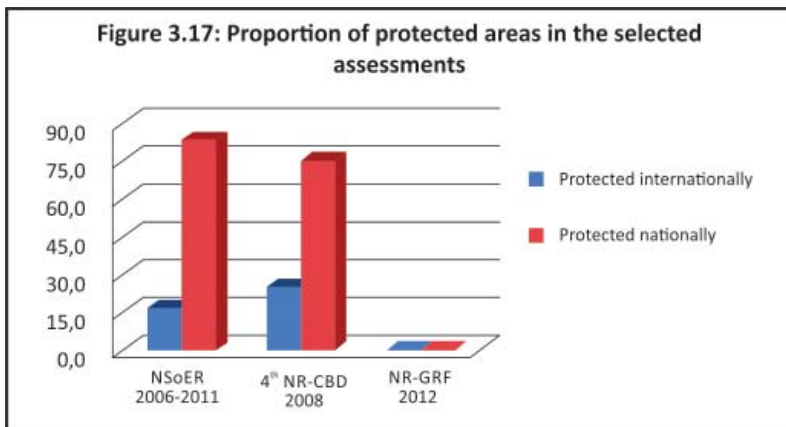
Protected areas are considered in NSoER-2006-2011 and the 4th NR-CBD-2008 and they are not covered by NR-GRF-2012 (Figure 3.17). Internationally protected areas make 15% and 20% in NSoER-2006-2011 and the 4th NR-CBD-2008 respectively and protected nationally are considered at much higher level both in NSoER-2006-2011(80%) and the 4th NR-CBD-2008 (70%).

As for ecosystems and habitats (Figure 3.18), the NSoER-2006-2011 is fully focused on forest ecosystems (100%) through presenting the UNECE indicators on forests and other wooded lands. However, NSoER-2006-2012 has not used the term of ecosystem.

The 4th NR-CBD well prioritises ecosystems and habitats and it presents the state of forest, mountain and water ecosystems in the country (16.6% each) and it puts objectives towards assessing ecosystems and their management internationally and nationally (50%). The NR-GRF-2012 describes the state of forests and forested land (100%), which is counted under relevant forest ecosystems here.

3.18: Proportion of ecosystems and habitats in the selected assessments

Figure 3.19: DPSIR analysis of the selected assessments on biodiversity
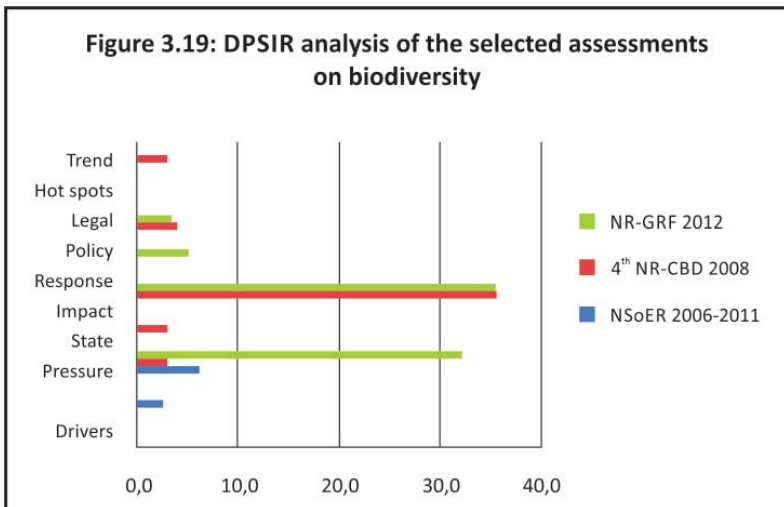
The NSoER 2006-2011 observes biodiversity related pressure and its state, as it is shown in Figure 3.19, which presents DPSIR analyses of selected assessments on biodiversity. Through reviewing chapters on agriculture and land use it was possible to find some aspects of the pressure on biodiversity (2.5%) and the biodiversity chapter itself entirely was considered as the state of the biodiversity (6.1%).

The 4th NR-CBD-2008 makes very strong focus on response measures towards biodiversity conservation (36%) and it also considers the state and the impact at much lower rate (3%), while considering some biodiversity related trends (3%) and legal measures (4%).

The NR-GRF 2012 considers biodiversity related response measures at highest rate (36%) and also pays considerable attention to the state of species and genetic resources (33%). It also considers at some rate the policy (5%) and legal measures (4%) towards management of genetic resources of forests in Kyrgyzstan.

3.2.4. Wastes

3.2.4.1. Overview of the reporting

The main institutions that collect data on wastes and their management are:

- the NSC – reporting on toxic waste, household waste, liquid waste;
- the Ministry of Emergency Situations (MES) – reporting on the state of radioactive tailings and toxic waste;
- the SAEPF – NSoERs, reporting to MEAs, policy formulation, legal acts;
- the Ministry of Health – utilisation of medical wastes;
- the Ministry of Agriculture – control over the import and use of obsolete

pesticides and banned POPs in agriculture and relevant reporting;
- the Ministry of Energy – control over the use and utilisation of PCBs in the sector and relevant reporting;
- local authorities – solid wastes handling and reporting to NSC.

Kyrgyzstan is a party to Basel, Rotterdam, and Stockholm Conventions (Annex 3, Table 2). SAEPF develops reports to the Basel Convention on transboundary movement of hazardous wastes and their disposal. Reports were submitted in 2009, 2010 and 2011 and were posted on the website of the Secretariat of the Convention (http://www.basel.int).

In NSoER -2006-2011, the chapter «Waste» is based on statistical data from NSC, data and information collected from MES, MAM, and the selected municipalities and entities.

The NSC collects, analyse and compiles information on solid and hazardous wastes. The methodology of data collection and reporting is gradually improving from the reporting used in the Soviet times and significant changes have been achieved due to the improved waste classification developed to meet requirements of the Basel Convention and regular integration of recommendations of UNECE and EuroStat added to further improvements. In the meantime, there are still considerable needs to improve reporting on the quantity and density of the waste, waste flow, separated waste disposal, waste recycling, etc.

There is a process of data collection and reporting on hazardous wastes in the country, which serves as the base for the NSC to collect data from the relevant entities. Up to now, no statistics on radioactive waste are collected in Kyrgyzstan. Waste statistics published officially, are very limited. The Statistical Yearbook of Kyrgyzstan 2006-2010, includes
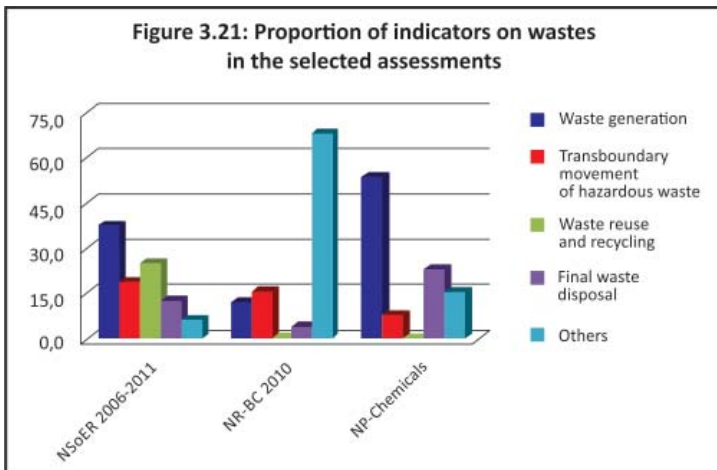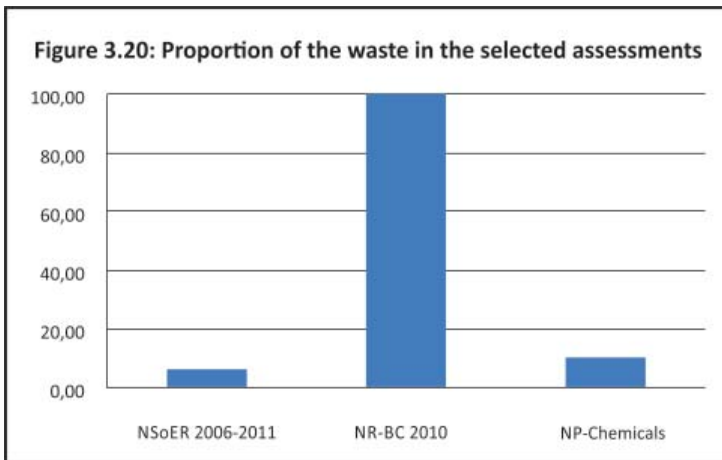
only one table with very limited information on waste statistics.

There are number of ODA funded projects on waste management in Kyrgyzstan, including improvement of waste data collection and reporting. Chemical profile of the country was prepared with the support of UNDP. It reflects not only hazardous substances production but it also describes hazardous wastes. However, its approval by relevant authorities is still pending.

3.2.4.2. Review and analysis

For the review and analysis of the assessments on wastes the NSoER-2006-2011, National Report to Basel Convention for 2010 (NR-BC-2010) and Chemical Profile of Kyrgyzstan (NP-Chemicals) have been selected.

It was mentioned above that NP-Chemicals is not approved yet by the relevant national authorities but it was selected for carrying out assessments within current document because of absence of other options. In

Figure 3.20: Proportion of the waste in the selected assessments

Figure 3.21: Proportion of indicators on wastes in the selected assessments

spite of bearing responsibility to provide data and information on wastes, the NSC does not publish much about wastes and it was found impossible to review and analyse here statistical publications after 2008.

The share of the waste in NSoER-2006-2010 made 6% and in NP Chemicals 10%. The NR-BC-2010 is entirely considered on wastes (Figure 3.20).
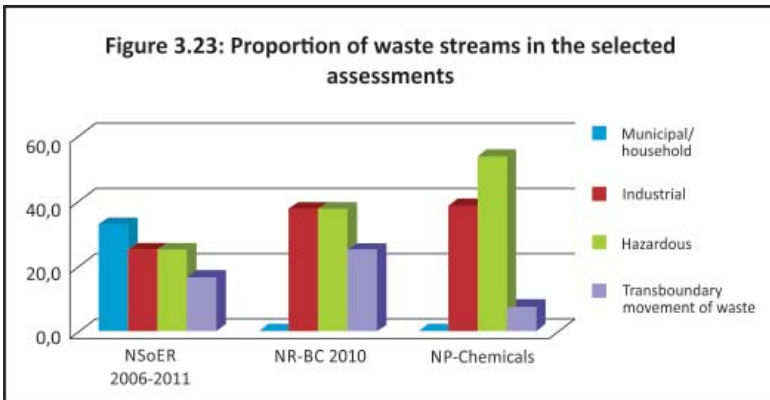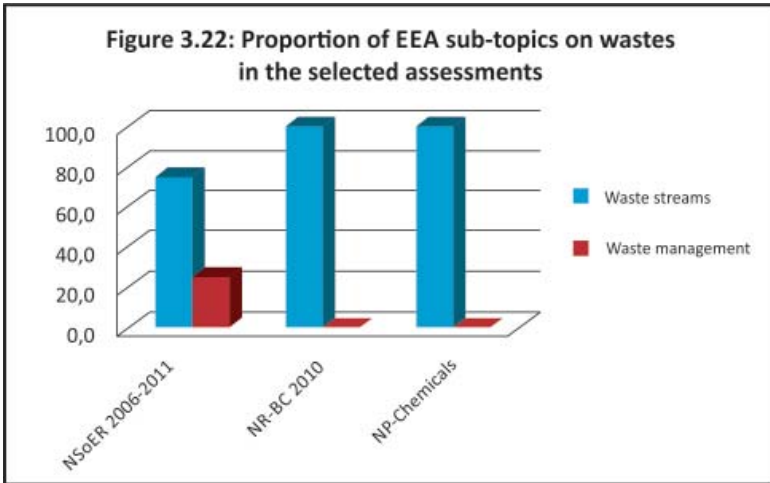
All four UNECE indicators on wastes are presented in NSoER -2006-2011 (Figure 3.21). Since there is a series problem with radioactive waste management in Kyrgyzstan, an additional indicator on

radioactive wastes was included in NSoER -2006-2011.

The NR-BC-2010 considers UNECE indicators, but does not prioritise them much. Among all UNECE indicators, it focuses on transboundary movement of hazardous waste (15%) and on waste generation (10%).

The NP-Chemicals focuses on industrial and hazardous waste generation (50%) and considers their disposal (20%).

Proportion of the sub-topics provided by EEA is shown in Figure 3.22 and among two of them, selected assessments prevailingly

Figure 3.22: Proportion of EEA sub-topics on wastes in the selected assessments

Figure 3.23: Proportion of waste streams in the selected assessments

consider waste streams and only in NSoER-2006-2011 up to 20% of assessments made focus on waste management.

The waste management in NSoER-2006-2011 is evenly distributed among four proposed subjects (municipal/household, industrial, hazardous and its transboundary movement). Because of that and since waste management is considered only in NSoER-2006-2011, there is no figure describing it in this AoA.

Distribution of the waste stream in the selected assessments is demonstrated in Figure 3.23. The NSoER-2006-2011 considers all four subjects with stronger

focus on municipal/household waste (33%), while NR-BC-2010 and NP-Chemicals make stronger focus on industrial and hazardous wastes. NR-BC-2010 in a view of its objectives for more than 25% considers wastes' transboundary movement.

The DPSIR analysis of selected assessments on wastes is shown in Figure 3.24. The NSoER-2006-2011 presents the state, pressure and hot spots in its chapter on wastes, while some relevance to waste related response measures are found in the chapter on the state of the environmental management.

Figure 3.24: DPSIR analysis of the selected assessments on wastes
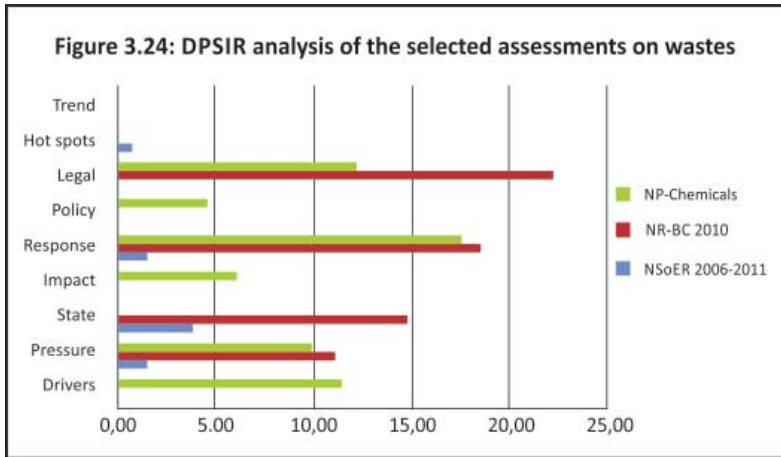
AN ASSESSMENT OF ASSESSMENTS

MESSAGES

The NR-BC-2010 considers most of the DPSIR components with stronger focus on legal and response measures as it is required by a reporting template. It also shows the state and pressure in regard to the hazardous waste and its transboundary movement.

The NP-Chemicals, considering country conditions with overall management of chemicals, focuses on drivers, pressure and impact as well as prioritises consideration of response and legal condition towards hazardous waste management in Kyrgyzstan.

Data and information flow and the environmental reporting in Kazakhstan and Kyrgyzstan have both, the common features and the differences. To review and analyse them based on the assessments of the processes of data collection and information gathering and environmental reporting in the selected thematic areas is the objective of this chapter.

Through the current AoA it was also an attempt to assess the level of relevance of the environmental data and information flow and environmental reporting against the relevant guidelines developed by UNECE. Results of these assessments have been also used for evaluating their relevance for the development of SEIS in the Pan-European region as it was committed by the environmental ministers during the Seventh Ministerial Conference in Astana in 2011. Review and analysis of the NSoERs, statistical publications, and reports to the MEAs have been carried out in order to develop this AoA.

4.1. Comparison of key features of environmental data and information and environmtntal statistics

There is a process and established practices of the environmental data collection and information gathering for reporting to MEAs and NSoERs in Kazakhstan, which is led by the MoEPWR, where the ASK and several other agencies and institutions play an important role.

Majority of environmental assessments benefit from the relevant statistical publications of the ASK and publications of data of KazHydromet that are accessible for the purposes of different kinds of assessments. It has to be noted that both the ASK and KazHydromet are considerably progressing in data collection and its publications. KazHydromet increases the number of its monitoring stations with the support of nationally funded programmes on improvement of the environmental monitoring. Data and information, which are not yet available, are collected upon official requests coming from various national agencies and institutions.

Thematic database on biodiversity and ecosystems foreseen for the development under the IAC MoEPWR as key components of NFEI are not developed and structured well. Moreover, easy access to these databases has not been assured yet, although relevant resolution of the Government as of September 25, 2000 has been made.

Development of statistical yearbooks as EPSD 2007-2011 and the IBSE by KazHydromet are the regular process of data collection, aggregation, and publication. The NIR on GHG for UNFCCC, produced in accordance with the relevant

resolution of the Government of Kazakhstan is also newly established regular process of data collection, aggregation, and estimations on GHG.

Some environmental assessments in Kazakhstan such as SNC are developed in project format under the certain ODA funds and along with the above mentioned nationally established practices use project based activities of experts, who work on collection and aggregation of data for assessments. It is very often the case when nationally funded reports to be submitted to MEAs are developed by experts involved in implementation of certain project activities and results of the projects are applied for preparing different reports, as it was the case with the development of the NsoERs 2011.

Current AoA is based on the views and analysis of assessments carried out in proposed thematic areas and revealed several limitations in data collection and information gathering processes required for fulfilling certain reporting obligations and compliance with the UNECE indicators and EEA sub-topics. These limitations concern both quantity and quality of data and information. Future activities towards improvement of quality of the whole process of data collection, aggregation, and sharing have to be carefully planned based on the identified weaknesses and limitations.

Careful assessment of cost efficiency of establishment of regular system of data collection, aggregation, and sharing has to be done in order to compare its overall efficiency with the current practice of collecting data and preparing reports to MEAs within the framework of certain projects.

Today the situation in Kyrgyzstan in comparison with Kazakhstan is described

as entirely dependent on ODA funded projects when it comes to environmental assessments based on data collection, aggregation, and sharing as well as preparing reports to MEAs.

There are also two principal processes of data collection and information gathering for NSoER and reports to the MEAs in Kyrgyzstan: (i) national environmental statistics of the NSC and data coming from regular monitoring by KyrgyzHydromet and (II) project based data collection upon official requests to relevant national agencies and institutions, work of experts on data collection and aggregation for preparing reports to the MEAs and NSoER.

The data and information collected through these processes do not meet all reporting requirements neither for NSoERs nor for most of the reports to MEAs. It is because the environmental monitoring network of KyrgyzHydromet is rather limited and covers only some parts of the country and consequently, data obtained from regular observations do not meet reporting requirements. Statistical reports by NSC on emissions of GHG and air polluters, biodiversity, water and wastes are also very limited.

As the results of the assessments revealed, availability of the environmental data and information is an issue for Kyrgyzstan. There are not many differences in availability and accessibility to data and information.

Usually, what is available and exists is accessible. There is a need in considerable improvement of environmental data and information availability. Some good practices in Kazakhstan with publications of the national environmental statistics and environmental monitoring data could be learned and where applicable used in Kyrgyzstan.

Due to the fact that currently Kyrgyzstan is less self-sufficient in domestic funding

for conducting overall environmental assessments than Kazakhstan, it is most likely that Kyrgyzstan will continue to rely on ODA projects for fulfilling its reporting obligations to MEAs. Therefore, for the development of reliable reports, significant efforts on improvement of statistical reporting and reporting of environmental monitoring data and their accessibility are to be foreseen both through nationally and donor funded programs.

Strong attention is to be paid to the consistency of environmental data and information. Existing practice of project based assessments mainly are time and resource consuming process and thus needs, to be improved.

There is a positive development towards preparation of next NSoERs in Kyrgyzstan. The Resolution of the Government on approving NSoER 2006-2011, assuring their publication based on three-year periodicity, and identifying the source of regular national funding was adopted. According to the resolution the NSoERs in Kyrgyzstan have to be produced on a regular process.

Usual practice shows that most of the data and information gathered for preparing previous reports are stored and managed by individual experts involved in the activities of certain projects and programmes. There is no governmental institution that manages and administers data and information used for pervious NSoERs and reports to MEAs. Basically, there is no well established system specifically designed for data administration and absence of such a system makes the process of updating and using data and information difficult for developing required reports. In this regard, SEIS relevant activities in Kyrgyzstan should focus on development of singular or joint interagency storage of database and reports to be submitted MEAs and NSoERs.

4.2. Relevance to UNECE indicators, EEA sub-topics and DPSIR framework

Information provided in this chapter adds to the detailed review and analysis of the assessments in each of the thematic areas discussed in the previous chapter. Analysis of relevance of the whole thematic area to the UNECE environmental indicators, sub-topics and subjects proposed by EEA, and the EEA DPSIR framework[61] is the major purpose of this chapter. These assessments of compliance of the above mentioned indicators and topics with the Pan-European standards are also important for strengthening cooperation in the field of environment including promotion of SEIS adoption in line with the resolutions of Astana 2011.

4.2.1. Kazakhstan

In total only seven assessments on Kazakhstan have been used for conducting review and analyses of thematic areas in this AoA. The NSoER-2010 was used for making analysis of all the four thematic areas and the statistical yearbook - EPSD -2007-2011; the latter was used for making analysis of three thematic areas out of four, except the one on climate change.

Introduction part of the NSoER-2010 refers to the use of the UNECE Guidelines for Preparation of Indicator-Based Environment Assessment Reports in the EECCA countries[62]. However, it should be mentioned that NSoER-2010 as well as previous NSoERs for 2006-2009 only presented the titles of recommended

indicators in the Table of Contents, while both of the documents have been prepared without following the Guidelines of UNECE properly. Other than UNECE indicators, the NSoER-2010 also considers other topics under thematic areas.

EPSD 2007-2011[63] also refers to the use of thirty two indicators out of thirty six UNECE environmental indicators for the EECCA countries. Other assessments presented in the document have not been conducted in line neither with the UNECE recommendations on indicator based reporting nor with the UNECE environmental indicators.

Major findings of the assessments aimed at identifying relevance of national UNECE indicators with the set of indicators are presented Figure 4.1. Results of the assessments of NSoER-2010 and EPSD 2007-2011 for the presence of information on Biodiversity and wastes revealed that two-third of the information are in compliance with the declared use of the UNECE indicators. Very low relevance of biodiversity and waste with the UNECE environmental indicators is the result of absence and/or unavailability of data and information on these two subjects.

Comparison with the set of sub-topics proposed by EEA (Figure 4.2) observes similar findings with the results presented in Figure 4.1. The tendency, in one hand, may prove overall coherence of the UNECE set of environmental indicators with the EEA prioritisation in considered thematic areas and in other hand, obviously shows even lower relevance of the national assessments in Kazakhstan to the priorities of EEA in considered thematic areas than comparing with the UNECE environmental indicators.

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61 http://ia2dec.ew.eea.europa.eu/knowledge_base/Frameworks/doc101182/

62 http://www.unece.org/fileadmin/DAM/env/europe/monitoring/Publications/Indicators_Assessment/documents/Publication.Indicators_Reporting._ECE-CEP-140_Eng_final.pdf

63 http://www.stat.kz/publishing/20121/%D0%98%D0%BD%D0%B5%D1%80%D0%B0%D0%BA%D1%82%D0%B8%D0%B2%20%D0%9E%D0%9E%D0%A1%2011.pdf

Figure 4.1: Proportion of UNECE indicators in thematic areas (Kazakhstan)

Figure 4.2: Proportionof EEA sub-topics in the thematic areas

Figure 4.3: DPSIR analysis of thematic areas in assessments

In the Central Asian component of EE-AoA it was mentioned that most of the national assessments on water observe DPSIR framework, but they are more focused on pressure (withdrawing and polluting water), state and impact and they do not consider much economic activities (drivers) and responses[64].

Above is one of the reasons to consider the DPSIR observance and distribution of its components in considered thematic areas (Figure 4.3). Another reason is to use the opportunity to check DPSIR observance in only three selected assessments per thematic area, among which the NSoER 2010 in its introduction declares the use of DPSIR.

Among thematic areas, assessments on climate change better present related drivers, pressures and responses. Assessments in the remaining thematic areas are focusing more on the state and impact analyses. Hence, the major conclusion to be made based on the information provided above, is to make more emphasis on the assessments on air, biodiversity and waste focusing more on drivers and pressure for applying adequate response, policy and legal measures.

4.2.2. Kyrgyzstan

There were nine assessments used for the review and analysis of thematic areas in Kyrgyzstan. Seven of these nine assessments were produced within ODA funded projects. NSoER 2006-2011 was the only assessment reviewed and analysed in all four thematic areas. The statistical yearbook «Kyrgyzstan in Figures 2006-2010» was reviewed only once in the sub-chapter on air.

The NSoER 2006-2011 is indicator - based report, which is developed using relevant

UNECE Guidelines[65]. Other assessments were developed using their own terms of references either under the reporting requirements to MEAs or specific requirement of projects within which they were developed.

Therefore, in the quantified assessments observing UNECE environmental indicators, Kyrgyzstan has some disadvantages comparing to Kazakhstan. Kazakhstan regularly publishes statistical yearbooks on environmental protection and sustainable development following UNECE set of indicators.
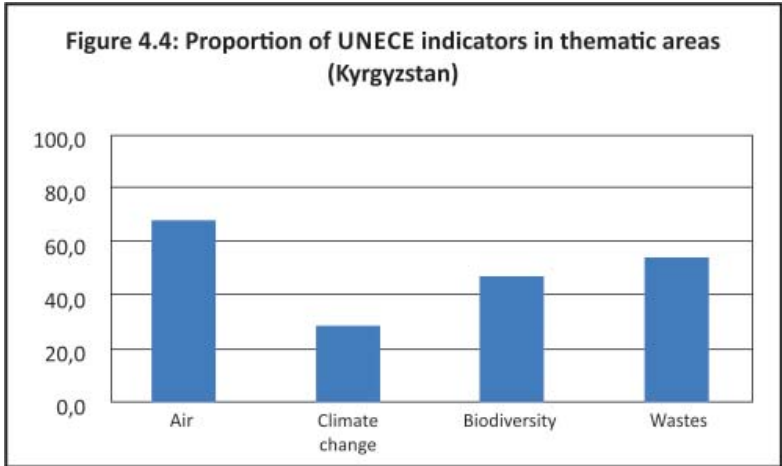
Climate change shows lowest relevance to UNECE indicators (Figure 4.4). Even in NSoER, which was developed following UNECE Guidelines, Kyrgyzstan has introduced its own indicator on climate affected by natural hazards and pays to it considerable attention. Climate assessments in Kyrgyzstan make lower focus on GHG emission, which was the major reason of high relevance of assessments in Kazakhstan to UNECE indicators because of NIR on GHG, which is not produced in Kyrgyzstan.

Proportion of EEA sub-topics in considered thematic areas close to or a little higher than fifty percent each (Figure 4.5). Following the observation made with Kazakhstan, where UNECE set of indicators and EEA sub-topics have shown almost the same rate and the shape of relevance, it is to be explained that higher relevance of climate change to EEA sub-topics in climatic assessments on Kyrgyzstan comes because of extended consideration of climate change adaptation measures in one of the assessments.

Considerably low relevance of assessments in Kyrgyzstan to both UNECE indicators and

64 Europe's Environment – Central Asia – An Assessment of Assessments, CAREC, 2011, pg 42.

65 http://www.unece.org/fileadmin/DAM/env/europe/monitoring/Publications/Indicators_Assessment/documents/Publication.Indicators_Reporting._ECE-CEP-140_Eng_final.pdf

Figure 4.4: Proportion of UNECE indicators in thematic areas (Kyrgyzstan)

Figure 4.5: Proportion of EEA subtopics in thematic areas (Kyrgyzstan)

Figure 4.6: DPSIR analysis of thematic areas in the assessments
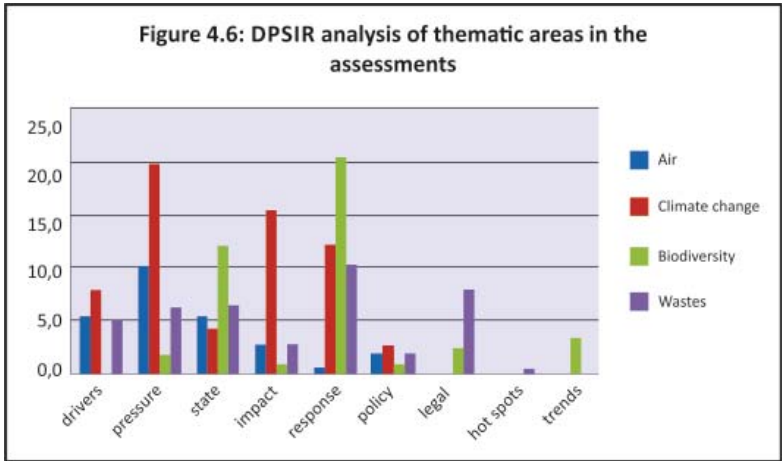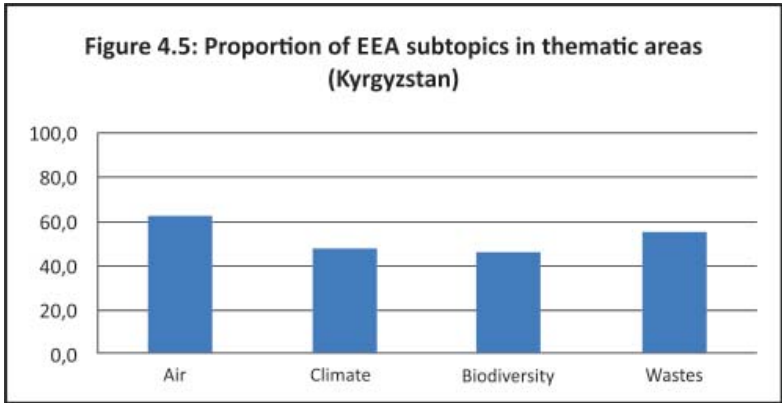
to EEA sub-topics is to be explained not only by the different scope of assessments, but also by unavailability of relevant data and information for producing NSoER and several other assessments, including reports to MEAs.

The DPSIR framework is observed in deferent composition for considered thematic areas (Figure 4.6). Pressure on the environment, its state and response measures are most observed in aggregated consideration of assessments on Kyrgyzstan.

Comparing to Kazakhstan, assessments in Kyrgyzstan do not focus much on drivers, which may limit deeper analysis of causes of the pressure on the environment. Strong focus on response measures of assessments on biodiversity and climate change comes from the specificity of considered publications on sustainable use of genetic resources of forests and climate change adaptations measures.

The NSoER 2006-2011 in Kyrgyzstan as well as NSoER 2010 in Kazakhstan are not among well DPSIR observing assessments. SNC in both countries are most balanced assessments towards observance of the DPSIR framework.

4.3. RECOMMENDATIONS

The final version of current AoA was discussed with the appointed focal points from MoEPWR and SAEPF, other stakeholders – members of working groups on SEIS in Kazakhstan and Kyrgyzstan, who took part in the national consultations in Kazakhstan, held on September 26 and in Kyrgyzstan on September 30, 2013.

The objective of the meetings was to discuss country specific activities for addressing major needs, including those found in the current AoA in the field of the

environmental data and information within EU FLERMONECA project to be implemented in 2013-2015 with the focus to promote SEIS in Central Asia in cooperation with EEA.

Recommendations provided below are the result of a number of consultations and major findings of the AoA through considered practices of the environmental data and information gathering for the purposes of reporting to MEAs in respective thematic areas, NSoERs and major environmental statistic publications.

Common recommendation from both countries is to continue exercising AoA as it is useful for assessing the state of the whole reporting process in various thematic areas at the national level and it is accepted as reliable tool for comparing these processes between two countries and also it is interfacing with mutually agreed Pan-European reporting commitments, guidelines, and recommendations.

Both of the countries expressed their interest and willingness in reinforcing existing inter-agency collaboration in order to assure effective exchange of environmental data and information required for reporting purposes by providing support for the establishment of interagency working groups on SEIS and including the EU MONECA project.

4.3.1. KAZAKHSTAN

In order to improve the situation in delivering reports to MEAs and NSoERs based on well organized data and information exchange it is also recommended to use benefits from implementing national programmes and the ODA projects including the EU MONECA project, and the processes of the Pan-European cooperation and continue activities related to:

- Further improve national statistics on environmental protection and sustainable development based on the application of the UNECE set of environmental indicators for the EECCA countries. Namely, to request relevant institutions in the Pan-European region to assist methodically the ASK for improving production of indicator-based statistics;

- Request relevant international institutions to assist methodically the ASK in development of the set of green economy indicators;

- Assist the IAC EP in establishment of regular data and information supply to the digital database for natural resources under the NFEI – potentially the major source of data and information for reporting to MEAs on biodiversity, land use, and desertification;

- Improve development of NSoERs in close cooperation with the relevant institutions in the Pan-European region, specifically to seek their support in methodological assistance. While developing new NSoER in Kazakhstan it is recommended to consider an opportunity to develop a concise and robust two-three year indicator-based NSoER (up to 60-80 pages) following the relevant UNECE Guidance in order to produce more comprehensive and concise picture on the state of environment for further decision making and interfacing with the environmental protection in the Pan-European region;

- Assist in holding special trainings on PRTR for experts of the MoEPWR, enterprises and NGOs, which will add to the improved capacities to produce proper data and information on emissions of GHG and air polluters.

Based on the major findings of the current AoA it is recommended to:

- explore opportunities to improve and harmonise relevant reporting within CERC MoEPWR and ASK in order to provide reliable data and information on **air** pollution by sectors, related monitoring, and impact for NSoERs ;

- Improve future versions of NSoER based on new NIR GHG (2013) containing of more balanced presentation of per pollutants and per sector GHG emissions in its chapters on **climate change**, which was not included in the existing NsoER-2010. Since most of the assessments on climate change do not consider emissions per related monitoring (through observation or modelling), it is recommended to explore opportunities for integration of such subject in the assessments, namely in NSoER and statistical yearbooks - EPSD;

- Improve reporting on **biodiversity** by progressing reporting from the administration of protected areas on the base of "Nature Chronicles" and to explore opportunities to involve international expertise, initiate the dialogue with the involvement of ASK in the development of more precise and robust reporting from the administrations of protected areas;

- Emphasise on **wastes**, specifically municipal ones, which are the subject for introducing major improvements in regard to provision of reliable data and information for NSoER and statistical reports in EPSD, and reports to MEAs. It is recommended to make considerable revision of basic reporting forms prepared by municipalities

and enterprises, possibly with the involvement of the international expertise and good international practices from the Pan-European region.

4.3.2. KYRGYZSTAN

As it was revealed, Kyrgyzstan greatly depends on ODA projects for producing periodic reporting to MEAs it is recommended to integrate project components to the activities designed for making improvements in the system of database development, which will serves for the primary goals of preparing different reports.

Current AoA identified several gaps in national statistics, in the system of database of KyrgyzHydromet and in the activities of other responsible institutions preparing reports for NSoERs and to MEAs. In order to address these gaps the following recommendations are proposed:

- To consider opportunities within the ODA funded projects and national programmes on development of environmental monitoring under the KyrgyzHydromet and other institutions with stationary or field observations over the environment and nature resources and to integrate project components on improvement of environmental data and information consistency and assuring their availability into the system of national programmes;

- To use opportunity through the interagency working group on SEIS and the special interagency working group on environmental statistics, established under the NSC, in order to consider major issues of the environmental statistics and formulate needed requests on their improvement;

- To adopt a request from the members of the working group on

SEIS to welcome ODA contributions towards improvement of the environmental data and information flow, including contributions from the EU FLERMONECA project. It is recommended to explore the following opportunities:

- Analysis of the gaps in the whole process of data gathering, aggregation and provision for preparing the Fifth National Report on **biodiversity** to be submitted to UNCBD. Results of the proposed analysis will also provide benefits for compiling reports to MEAs and next the NSoER. It is also important to identify targeted contributors to the improvement of overall data management process. Specific focus has to be made on basic statistical reporting by concerned entities and institutions to NSC and it is crucial to manage aggregation and analysis of provided data and information;

- Organizing and providing special trainings on PRTR for the experts of SAEPF, enterprises and NGOs, which will add to the capacities o improve quality of data and information on emissions of GHG and air polluters;

- Organizing and providing training sessions at NSC for the development of analytical capacities needed for production of environmental indicators and their interpretation/presentation;

- Assisting in the development of green economy indicators;

- Providing targeted support for the development of statistical reporting forms for the improvement of water and land use statistics;

■ Assisting in digitizing and storing data of KyrgyzHydromet required for reporting to MEAs;

■ Assisting in the development of Joint/National Database of environmental data and information, which could add to ensure consistency of data and information required for reporting to MEAs and NSoERs.

Based on the major findings of the current AoA it is recommended to:

- Carry out in-depth analysis of causes of very weak system of database and national statistics on important issues as **air** pollution and also conduct analysis of the legal basis. Improvement of statistical reporting forms on air pollution has to be considered with specific focus on presenting per sector pollution. Since assessments on air do not consider air pollution per related monitoring, there is a strong need to explore opportunities of its integration into reporting process;

- Ensure better access to the data of KyrgyzHydromet on air temperature, atmospheric precipitations, which are indispensable for assuring comprehensive reporting. It has to be ensured that the data for reporting on **climate change** is accessible through the national institutions, but not through the individual experts. Establishment of Joint/National Database could serve as the key platform for exchanging data among concerned national institutions. Emissions per related monitoring (observation or modelling) are to be integrated to the reporting, at least to the NSoERs, which could give the picture of proportions of factual

monitoring and modelling/estimations. There is a need in building modelling/estimation capacities of experts, where the experience of Kazakhstan on preparation of NIR GHG can be used;

- To revise all statistical reporting forms on **biodiversity** and find out possibilities for upgrading them in order to make improvements in reporting to MEAs and NSoER. Well defined structure for presenting ecosystems and habitats has to be introduced for NSoERs;

- To improve provision of reliable data and information on **wastes**, specifically municipal ones, which are the subject for introducing major improvements in regard to provision of reliable data and information for NSoER and statistical reports in EPSD, and reports to MEAs. It is recommended to make considerable revision of basic reporting forms prepared by municipalities and enterprises, possibly with the involvement of the international expertise and good international practices from the Pan-European region.

AN ASSESSMENT OF ASSESSMENTS

ANNEXES

Annex 1: List of sources uploaded to the EEA Virtual Library

Title	Responsible body	Year
REPUBLIC OF KAZAKHSTAN		
National State of the Environment Report for 2010	JSC Zhasyl Damu	2011
Implementation Report on Convention on Long-range Transboundary Air Pollution in 2010	JSC Zhasyl Damu	2011
Environment Protection and Sustainable development of the Republic of Kazakhstan for 2007-2011 – yearbook	State Agency on Statistics of the Republic of Kazakhstan	2012
Kazakhstan Today – yearbook	State Agency on Statistics of the Republic of Kazakhstan	2012
Information bulletin on state of the environment of the Republic of Kazakhstan	KazHydromet of MoEPWR	2013
Kazakhstan's Environmental Performance Review, the 2nd Review	UNECE	2008
Kazakhstan National Communication to The Conference of the Parties of the United Nations Convention on Climate Change	Ministry of Environmental Protection and Water Resources of the Republic of Kazakhstan	2009
National inventory report Anthropogenic emissions by sources and removals by sinks of greenhouse gases not controlled by the Montreal Protocol for 1990-2011. (preliminary)	UNFCC/MoEPWR of RK	2013
Kazakhstan: Climate Vulnerability, Risk and Adaptation Assessments	IFSA	2012
Climate Change in Central Asia. A visual synthesis	zoï environment network 2009	2009
National human development report for 2008 - Climate change and its impact on Kazakhstan's human development	UNDP	2008
Lessons Learnt from the UNDP-GEF Project «Kazakhstan - wind power market development initiative»	UNDP	2011
The experience gained within projects of the on adaptation to climate change in Kazakhstan programme	UNDP	2010
Agriculture. Forestry and Fishery of Kazakhstan in 2007-2011 – yearbook	Agency of Statistics of the Republic of Kazakhstan	2012
		2009

The fourth national report on progress in implementation of the Convention on biological diversity	Ministry of Environmental Protection and Water Resources of the RK	2009
The national report in progress in implementation of the Convention Concerning the Protection of the World Cultural and Natural Heritage in 2010	Ministry of Environmental Protection and Water Resources of the RK	2011
National report on the implementation of the Ramsar Convention on wetlands in 2008	Ministry of Agriculture of the RK, Zoology Institute	2009
Strategic Plan of the Ministry of Environmental Protection and Water Resources of the Republic of Kazakhstan	Ministry of Environmental Protection and Water Resources of the RK	2011
Second Regular National Report on the Implementation of the Cartagena Protocol on Biosafety 2011-10-26	Ministry of Education and Science of the RK	2011
National Report to the Secretariat of the Basel Convention	Ministry of Environmental Protection and Water Resources of the RK	2010
National Report to the secretariat of the Stockholm Convention	Ministry of Environmental Protection and Water Resources of the RK	2006
The program of Kazakhstan's development «Zhasyl Damu»	Ministry of Environmental Protection and Water Resources of the RK	2010

REPUBLIC OF KYRGYZSTAN

The National Report on the state of the environment of the Kyrgyz Republic for 2006-2011	State Agency on environmental protection and forestry under the Government of Kyrgyz Republic	2012
2nd Environmental Performance Review of Kyrgyzstan	UNECE	2009
Kyrgyz Republic Environmental Outlook	State Agency on environmental protection and forestry under the Government of Kyrgyz Republic/UNEP	2009
Kyrgyz Republic Second National Communication on Climate Change	State Agency on environmental protection and forestry under the Government of Kyrgyz Republic/UNEP	2009
Guidelines for Developing National Strategies to Use Air and Water Quality Monitoring as Environmental Policy Tools	WGMA of UNECE	2012
20 years of independence of the Kyrgyz Republic . Figures and facts	State Committee on Statistics	2011

Social Trends of the Kyrgyz Republic 2006-2010	State Committee on Statistics	2011
The second periodic progress report on the Millennium development goals in the Kyrgyz Republic	Ministry of Healthcare, UNDP	2009
Kyrgyzstan: environment and natural resources for sustainable development	UNDP in Kyrgyzstan / State Agency on environmental protection and forestry under the Government of Kyrgyz Republic	2007
Second MDG Progress Report in the Kyrgyz Republic (revised)	UNDP	2010
Forests and Climate Change in Eastern Europe and Central Asia	FAO	2010
Programme of the health sector of the Kyrgyz Republic on climate change adaptation for 2011- 2015	Ministry of Healthcare	2011
Road to Copenhagen: Climate Change and Poverty in Central Asia	UNDP/CARNet	2009
Adapting to Climate Change in Eastern Europe and Central Asia Eastern Europe and Central Asia	World Bank	2010
Gender and Climate Change	UNDP	2012
The fourth national report on progress in implementation of the Convention on biological diversity	State Agency on environmental protection and forestry under the Government of Kyrgyz Rep.	2008
Country report in the State of plant Genetic resources for Food and Agriculture in Kyrgyzstan	State Agency on environmental protection and forestry under the Government of Kyrgyz Rep.	2008
Complex assessment of natural resources in Kyrgyzstan for 2008-2010	State Agency on environmental protection and forestry under the Government of Kyrgyz Rep.	2010
Special report. Mission of FAO/GDP in Kyrgyzstan on assessment of crops and food safety	FAO	2010
Global forest resources assessment, Country report, Kyrgyzstan Land Degradation and Desertification in Central Asia: Central	State Agency on environmental protection and forestry under the Government of Kyrgyz Rep.	2010
Asian Countries Initiative for Land Management Analysis of the current state and recommendation for the future	Swiss GEF Council Member	2010

Second Regular National Report on the Implementation of the Cartagena Protocol on Biosafety	State Agency on environmental protection and forestry under the Government of Kyrgyz Rep.	2011
Forest management and use of forest resources in Kyrgyz Republic. Perspectives of development	World Bank	2011
National report on the development of Ramsar Convention	State Agency on environmental protection and forestry under the Government of Kyrgyz Rep.	2012
National report on the sate of forest genetic resources in the Republic of Kyrgyzstan	State Agency on environmental protection and forestry under the Government of Kyrgyz Rep.	2012
Report on research of radioactive substances in the fish resources of Issyk-kul lake	National Academy of Science	2012
Radioactive and toxic storages in Kyrgyzstan	UNDP in Kyrgyz Republic	2011
Unofficial waste storages in Kyrgyz Republic	«SlovacAid» (International Development Programme of the Slovak Republic)	2011
National profile on regulation of chemical substances in Kyrgyz Republic	State Agency on environmental protection and forestry under the Government of Kyrgyz Rep.	2012
National Report to the Secretariat of the Basel Convention	State Agency on environmental protection and forestry under the Government of Kyrgyz Rep.	2011
Statistical yearbook of Kyrgyz Republic for 2006-2010	State Committee on Statistics of Kyrgyz Republic	2011

Annex 2: Country Fiches on assessed thematic areas for Kazakhstan and Kyrgyzstan

2.1 Air: Kazakhstan

KAZAKHSTAN	Date
Air	
Air	1. National Report of the Republic of Kazakhstan (on Air, (2007-2010) http://www.eco.gov.kz/new2012/activity-of-state-authority/ information-about-the-environmental-situation-in-the-regions-of-kazakhstan/national-reports/
The latest reports on the state of environment (2007-2011)	1. NSoER, 2010 http://aarhus.kz/index.php?option=com_content&task=view&id= 171 2.Report of the Republic of Kazakhstan on the implementation of the Convention on Long-range Transboundary Air Pollution for 2010 http://www.eco.gov.kz/new2012/wp-content/uploads/doklady/zagr. vozdux2010.htm
Sector reports and assessments:	–
Environmental statistics	*Statistic compendiums* 1. Environmental Protection and Sustainable Development of Kazakhstan for 2007-2011 http://www.stat.kz/publishing/20121/Инерактив ООС 11.pdf 2. Kazakhstan Today (Astana 2012) http://www.stat.kz/publishing/20121/KazTodayRus.pdf *Information Bulletins* 3. Information Bulletin on the State of Environment of the Republic of Kazakhstan (2007-2013) http://www.eco.gov.kz/new2012/activity-of-state-authority/ information-about-the-environmental-situation-in-the-regions-of-kazakhstan/ecobul/ 4. Project «Strengthening Public Participation through Promotion of the PRTR Protocol in Ust-Kamenogorsk» http://www.kz-prtr.org/ http://kz-prtr.org/baza/
Reporting	1. Reporting on Environment pollution case http://www.eco.gov.kz/new2012/activity-of-state-authority/ information-about-the-environmental-situation-in-the-regions-of-kazakhstan/environmental-pollution/ 2. Environmental protection (Major Indicators for 2004-2011) http://www.stat.kz/digital/ohrana/Pages/default.aspx
Environmental indicators	1. Sector Programme «Zhasyl Damu for 2010-2014», September 10, 2010, № 924 http://www.eco.gov.kz/new2012/activity-of-state-authority/ strategy/3880-97/

	2. Strategic Plan of the MoEPWR RK for 2011-2015, February 18, 2011, № 98 http://www.eco.gov.kz/new2012/wp-content/uploads/2013/02/strateg_plan_29.12.htm 3. Rules of Identification of Target Indicators of Environment Quality http://adilet.zan.kz/rus/docs/P070000448_ 4. Millennium Development Goals in Kazakhstan, 2010 Purpose 7. Assuring environmental sustainability (objectives 9) http://www.undp.kz/pages/9.jsp 5. Guiding Principles on Development of National Strategies of the Use of Air and Water Quality Monitoring as a Way of Environmental Policy Facility (Eastern Europe, Caucasus, Central Asia and South-East Europe) UNECE (Geneva 2012) http://www.unece.org/fileadmin/DAM/env/europe/monitoring/Publications/Air_and_Water_Quality_Monitoring/documents/ECE.CEP.168.r.pdf
Overview of Environmental Performance (OEP)	1. The 2nd OEP, Kazakhstan, 2008 http://www.cawater-info.net/ecoindicators/pdf/kazakhstan_2_r.pdf

2.2. Climate change: Kazakhstan

KAZAKHSTAN	Date
Climate change	
Climate change	1. The Second national communication of the Republic of Kazakhstan to the United Nations Framework Convention on Climate Change (2009) Рус. http://unfccc.int/resource/docs/natc/kaznc2r.pdf Engl. http://unfccc.int/resource/docs/natc/kaznc2e.pdf 2. National report on cadaster of greenhouse gases emission in the Republic of Kazakhstan (2010) Ru. http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/5270.php 3. National report on cadaster of greenhouse gases emission in the Republic of Kazakhstan (2011) Ru.http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/5888.php 4. National report on cadaster of greenhouse gases emission in the Republic of Kazakhstan (2012) Ru. http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/6598.php 5. National report on cadaster of greenhouse gases emission in the Republic of Kazakhstan (2013 Ru. http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/7383.php 6. Kazakhstan: Climate Vulnerability, Risk and Adaptation Assessments (Report of the International Aral Sea Rehabilitation Fund) kazakhstan_report.pdf

	(Rus/Eng) http://www.ec-ifas.org/main/200-country-reports-on-assessment-of-climate-change-impact-on-water-resources-with-respect-to-energy-economic-infrastructure-in-central-asia-are-completed.html 7. National Human Development Report, 2008. Climate change and its impact on Kazakhstan development in view of human development (Rus.) http://www.undp.kz/library_of_publications/files/7027-14289.pdf (Engl.) http://www.undp.kz/library_of_publications/files/7027-14453.pdf
Latest reports on the state of environment (for 2007-2010)	1. NSoER, 2007 2. NSoER, 2008 3. NSoER, 2009 4. NSoER, 2010 Chapter3. Climate change Chapter4.Climatic peculiarities of the year http://www.eco.gov.kz/new2012/activity-of-state-authority/information-about-the-environmental-situation-in-the-regions-of-kazakhstan/national-reports/
Environmental statistics	*Statistic Yearbooks:* 1. Environmental protection and sustainable development of Kazakhstan 2007-2011, (2012) (Rus., Kaz.) http://www.stat.kz/publishing/20121/%D0%98%D0%BD%D0 %B5%D1%80%D0%B0%D0%BA%D1%82%D0%B8%D0%B2%20 %D0%9E%D0%9E%D0%A1%2011.pdf 2. Fuel-energy balance of the Republic of Kazakhstan in 2007-2011, (2012) Рус. http://www.stat.kz/publishing/20121/%D0%A2%D0%AD%D0%91_ interactive.pdf 3. Statistical compendium «Agriculture, forestry and fishing» http://www.stat.kz/publishing/2010/Сельское,%20лесное%20и%20 рыбное%20хоз-во.pdf 4. Industry of Kazakhstan and its regions/ 007-2011 (2012), Ru. http://www.stat.kz/publishing/20121/PDF%20%D0%9F%D1%80%D0%BE%D0% BC%D1%8B%D1%88%D0%BB%D0%B5%D0%BD%D0%BD%D0%BE%D1%8 1%D1%82%D1%8C%202012.pdf 5. Rural forestry and fishery in the Republic of Kazakhstan 2007-2011, (2012) Ru. http://www.stat.kz/publishing/20121/%D0%A1%D0%B5%D0%BB%D 1%8C%D1%85%D0%BE%D0%B7_inter.pdf 6. Transport in the Republic of Kazakhstan, 2007-2011, (2012), Rus. Kazakhstan in numbers, 2012 Ru http://www.stat.kz/publishing/DocLib/2010/Казахстан%20в%20циф-рах%202010%20рус%20веб.pdf
Regional reports on climate change, including Kazakhstan	1. Climate change in Central Asia. A visual synthesis http://www.preventionweb.net/files/12033_CCCAdec2009.pdf (http://www.ec-ifas.org/aral_basin/climate-change/ – (International Aral Sea Rehabilitation Fund)

Environmental indicator set	1. Sector programme «ZhasylDamu2010-2014», September 10, 2010, № 924 http://www.eco.gov.kz/strategiya/zhasyl.php
	2. Strategic plan of MoEPWR RK for 2011-2015 http://www.eco.gov.kz/strategiya/strategiya.php
	3. Rules of identification of qualitative environmental indicator set http://eco.gov.kz/rus_txt/npa/npa18.htm
	4. MDGinKazakhstan, Report, 2010 – Goal 7. Ensuring environmental sustainability (sub-goals – 9, 11) http://europeandcis.undp.org/home/show/A66C211F-F203-1EE9-B22D8E931194CB83
	5. Environmental indicator set for EECCA http://www.unece.org/env/europe/monitoring/EECCA_CSI/eecca_csi.r.html
	6. Environmental Performance Index 2010 http://epi.yale.edu/Countries/Kazakhstan
Overview of environmental performance (OEP)	The 2nd OEP of Kazakhstan, 2008 http://www.unece.org/env/epr/epr_studies/kazakhstan%20II.pdf

2.3. Biodiversity: Kazakhstan

KAZAKHSTAN *Biodiversity*	Date
Biodiversity	1. The Fourth National Report on Biological Diversity of the Republic of Kazakhstan http://www.cbd.int/countries/?country=kz
	2. National Report of the Republic of Kazakhstan on Biological Diversity, (2008, 2010, 2011) http://aarhus.kz/index.php?option=com_content&task=view&id=612
	3. National Report of the Republic of Kazakhstan on the implementation of the Convention on Protection of the World Cultural and Natural Heritage for 2010 http://aarhus.kz/index.php?option=com_content&task=view&id=612
	4. Second Regular National Report on the Implementation of the Cartagena Protocol on Biosafety 2011-10-26 http://bch.cbd.int/database/record.shtml?documentid=102592
	5. National report on the implementation of Ramsar Convention on wetlands http://www.ramsar.org/pdf/cop10/cop10_nr_kazakhstan.pdf
The latest reports on the State of Environmental Protection (2007-2011)	1. NSoER, 2011 http://www.eco.gov.kz/ekolog/doklad.php

	2. The Fourth National Report on the implementation of the UNCBD, 2010 http://aarhus.kz/index.php?option=com_content&task=view&id=613
	3. MDG in Kazakhstan, 2010 – Goal 7. Ensuring environmental sustainability (goals 9, 11) http://europeandcis.undp.org/home/show/A66C211F-F203-1EE9-B22D8E931194CB83
Sector reports and assessments: • Forest resources; • Agriculture and agricultural biodiversity; • Land resources • Water resources • Tourism • Infrastructure	1. National Reports on the State of the Environmental Protection in the Republic of Kazakhstan for 2007-2010 http://www.eco.gov.kz/new2012/activity-of-state-authority/information-about-the-environmental-situation-in-the-regions-of-kazakhstan/national-reports/ 2. Information Bulletin on the State of Environmental Protection of the Republic of Kazakhstan (by oblasts/regions) 3. Information Bulletin on the State of Environmental Protection on the territory of free economic area (FEA) «Aktau Sea Port» 4. Information Bulletin on the State of Environmental Protection on Kazakhstan part of the Caspian Sea 5. Information Bulletin on the State of Environmental Protection in the basin of the river Nura 6. Information Bulletin on the State of Environmental Protection in the area of Schuchinsk-Borovoiye resort zone 7. Information Bulletin on the State of Environmental Protection in the basin of Balkhash lake 8. Information Bulletin on transfer of toxic substances within environment objects http://ecokomitet.kz/ecokomitet/index.php?option=com_content&view=article&id=103&Itemid=195&lang=ru http://aarhus.kz/index.php?option=com_content&task=view&id=92 http://www.eco.gov.kz/new2012/activity-of-state-authority/information-about-the-environmental-situation-in-the-regions-of-kazakhstan/ecobul/
Environmental statistics	1. Environmental protection and sustainable development 2007-2011 http://www.stat.kz/publishing/20121/%D0%98%D0%BD%D0%B5%D1%80%D0%B0%D0%BA%D1%82%D0%B8%D0%B2%20%D0%9E%D0%9E%D0%A1%2011.pdf 2. Environmental protection and sustainable development 2010 http://www.stat.kz/publishing/2010/%D0%9E%D1%85%D1%80%D0%B0%D0%BD%D0%B0_%D0%BE%D0%BA%D1%80%D1%83_%D0%B8%D0%BD%D1%82.pdf

	3. Environmental protection and sustainable development 2009 http://www.stat.kz/publishing/DocLib/%D0%9E%D1%85%D1%80%D0%B0%D0%BD_%D0%B8%D0%BD%D1%82.pdf 4. Environmental protection and sustainable development 2008 http://www.stat.kz/publishing/Documents/%D0%A1%D1%82%D0%B0%D1%82_%D1%81%D0%B1%D0%BE%D1%80%D0%BD%D0%B8%D0%BA%D0%B8/%D0%9E%D1%85%D1%80%D0%B0%D0%BD%D0%B0%20%D0%BE%D0%BA%D1%-83%D0%B6%D0%B0%D1%8E%D1%89%D0%B5%D0%B9%20%D1%81%D1%80%D0%B5%D0%B4%D1%8B(%D1%81%20%D0%B8%D0%BD%D0%B4%D1%82%D0%B5%D1%80.%D1%81%D0%BE%D0%B4%D0%B5%D1%80%D0%B6%D0%B0%D0%BD%D0%B8%D0%B5%D0%BC).pdf 5. Rural forestry and fishery of Kazakhstan 2007-2011 http://www.stat.kz/publishing/20121/%D0%A1%D0%B5%D0%BB%D1%8C%D1%85%D0%BE%D0%B7_inter.pdf 6. Rural forestry and fishery of Kazakhstan in 2006-2010 http://www.stat.kz/publishing/20111/SelXozEnd.pdf 7. Rural forestry and fishery of Kazakhstan in 2005-2009 http://www.stat.kz/publishing/2010/%D0%A1%D0%B5%D0%BB%D1%8C%D1%81%D0%BA%D0%BE%D0%B5,%20%D0%BB%D0%B5%D1%81%D0%BD%D0%BE%D0%B5%20%D0%B8%20%D1%80%D1%8B%D0%B1%D0%BD%D0%BE%D0%B5%20%D1%85%D0%BE%D0%B7-%D0%B2%D0%BE.pdf 8. Rural forestry and fishery of Kazakhstan in 2004-2007 http://www.stat.kz/publishing/DocLib/Sel%20xoz_09.pdf 9. Rural forestry and fishery of Kazakhstan in 2005-2007 http://www.stat.kz/publishing/Documents/%D0%A1%D1%82%D0%B0%D1%82_%D1%81%D0%B1%D0%BE%D1%80%D0%BD%D0%B8%D0%BA%D0%B8/%D0%A1%D0%B5%D0%BB%D1%8C%D1%81%D0%BA%D0%BE%D0%B5%20%D1%85%D0%BE%D0%B7%D1%8F%D0%B9%D1%81%D1%82%D0%B2%D0%BE%20(%D1%81%20%D0%B8%D0%BD%D0%B4%D1%82%D0%B5%D1%80.%D1%81%D0%BE%D0%B4%D0%B5%D1%80%D0%B6%D0%B0%D0%BD%D0%B8%D0%B5%D0%BC).pdf
Environmental indicator set	1. Sector programme «Zhasyl Damu for 2010-2014», September 10, 2010, № 924 http://www.eco.gov.kz/new2012/activity-of-state-authority/strategy/3880-97/ 2. Strategic Plan of MoEPWR RK for 2011-2015 http://www.eco.gov.kz/new2012/activity-of-state-authority/strategy/3220-99/ 3. On Endorsement of the Rules of identification of target qualitative environmental indicator set Regulation of the Government of the Republic of Kazakhstan of June 1, 2007, № 448 http://ecoinfo.iacoos.kz/lite/index.php?option=com_content&task=view&id=1884

	4. MDG in Kazakhstan, Report, 2010 – Goal 7. Ensuring environmental sustainability (подцели – 9, 11)) http://www.un.kz/pages/9.jsp 5. Environmental indicators for EECCA http://www.unece.org/env/europe/monitoring/EECCA_CSI/eecca_csi.r.html 6. Environmental Performance Index 2012 http://epi.yale.edu/dataexplorer/countryprofiles?iso=KAZ Strategic CBD plan on biodiversity for 2011–2020 http://www.cbd.int/decision/cop/?id=12268 7. Indicators of biological diversity not covered by the guidelines http://www.unece.org/fileadmin/DAM/stats/documents/ece/ces/ge.33/2012/mtg2/Add.Indicators.Biodiversity.En.29.05.2012.pdf
OEAE	The 2nd OEAE, Kazakhstan, 2008 http://www.unece.org/index.php?id=2659

2.4 Waste: Kazakhstan

KAZAKHSTAN	Date
Wastes	

Wastes	1. Report on the control of transboundary movements of hazardous wastes and their disposal for 2007 and review of wastes recognized as hazardous in the Republic of Kazakhstan http://www.eco.gov.kz/new2012/wp-content/uploads/doklady/4rus.htm 2. Report on the control of transboundary movements of hazardous wastes and their disposal for 2008 and review on wastes recognized as hazardous http://www.eco.gov.kz/new2012/wp-content/uploads/doklady/2008.htmH 3. Report on the control of transboundary hazardous wastes and their disposal for 2009 and review on wastes recognized as hazardous http://www.eco.gov.kz/new2012/wp-content/uploads/doklady/2009.htm 4. Report on the control of transboundary hazardous wastes and their disposal for 2009 and review on wastes recognized as hazardous http://www.eco.gov.kz/files/3-2011.htm 5. First national report on persistent organic pollutants to Secretariat of Stockholm convention on ROP 2010 http://www.eco.gov.kz/new2012/wp-content/uploads/doklady/ndsoz.htm
Latest NSoER 2007-2011	1. NSoER-2007 г. 2. NSoERC-2008 г. 3. NSoER-2009 г.

	http://www.eco.gov.kz/new2012/activity-of-state-authority/information-about-the-environmental-situation-in-the-regions-of-kazakhstan/national-reports/ 4. NSoER-2010г. http://www.eco.gov.kz/doki/Monografy.pdf
Sectoral reports: 2007-2010	1. Report «Scientific Rationale of the Ways to Address the Problem of Wastes Generation and Disposal» Programme № 003 «Research in the Area of Environmental Protection» (Contract № 05-03-213 of 13.09.2011), Almaty, KazNTU, 2011 http://www.eco.gov.kz/files/nir11.htm 2. Report «Scientific Rationale of the Ways to Address the Problem of Wastes Generation and Disposal» Programme № 003 «Research in the Area of Environmental Protection». (Contract № 05-03-213 of 13.09.2011) Astana, RSE «KazSRIEC», 2012 http://www.eco.gov.kz/files/nir11.htm
Environmental statistics	1. Statistical yearbook: «Environmental Protection and Sustainable Development of Kazakhstan»/2007-2011./ Statistics Compendium/ in the Kazakh and Russian languages /180 pages statistika@stat.kz,,: http://www.stat.gov.kz
Environmental indicator set	1. Sector programme «Zhasyl Damu for 2010-2014», September 10, 2010, № 924: sections: 3.3.4. Stockpiles of production and consumption wastes, 3.3.8. Problems of polluted areas, 4.3. Target indicators http://eco.gov.kz/new2012/wp-content/uploads/doc/jd924s-izmen-04-08-2011_912.htm 2. On Endorsement of the Management Rules concerning abandoned hazardous wastes recognized as republican property by the court ruling. Decree of the Government of the Republic of Kazakhstan of October 8, 2007, N 919 (with amendments and additions as of May 31, 2012) http://www.eco.gov.kz/new2012/ministry/normative-and-legislative-acts/decision/ 3. On Introduction of Additions and Amendments into the Decree of the Minister of Environmental Protection of the Republic of Kazakhstan of May 31, 2007, № 169 «On Endorsement of Wastes Classification». Decree of the Minister of Environmental Protection of the Republic of Kazakhstan of August 7, 2008, № 188-ө. http://www.eco.gov.kz/new2012/ministry/normative-and-legislative-acts/orders/ 4. On Introduction of Amendments into Decree of the Government of the Republic of Kazakhstan of July 26, 2002, № 833 «Some Issues of Inventory, Storage, Assessment and Further Use of Property Appropriated (Subject to Appropriation) by the Government on Selected Grounds» and of October 8, 2007, № 919 http://www.eco.gov.kz/new2012/ministry/normative-and-legislative-acts/decision/ 5. On Endorsement of the Management Rules concerning abandoned hazardous wastes recognized as republican property by the court

ruling». Decree of the Government of the Republic of Kazakhstan of May 31, 2012, № 715 http://www.eco.gov.kz/new2012/ministry/normative-and-legislative-acts/decision/
6. On Endorsement of the Methods of Emission Volumes Produced (in terms of production wastes and waste water generation) by Decree of the Minister of Environmental Protection of the Republic of Kazakhstn of May 03, 2012, № 129-ө. http://www.eco.gov.kz/new2012/ministry/normative-and-legislative-acts/orders/
7. On Endorsement of the Management Rules of Handling Persistent Organic Pollutants and the Wastes They Contain. Decree of the Minister of Environmental Protection of the Republic of Kazakhstan of February 24, 2012, № 40-ө. http://www.eco.gov.kz/new2012/ministry/normative-and-legislative-acts/orders/
8. On Endorsement of the List of Wastes to be Stored on the Waste-storage Areas of Different Categories. Decree of the Minister of Environmental Protection of the Republic of Kazakhstan of August 2, 2007, № 244-p. http://www.eco.gov.kz/new2012/ministry/normative-and-legislative-acts/orders/
9. On Endorsement of the Reporting Form for Hazardous Wastes and Instruction on Fill-out the Reporting Form on Hazardous Wastes. Decreee of the Minister of Environmental Protection of the Republic of Kazakhstan of May 21, 2012, № 164-ө http://www.eco.gov.kz/new2012/ministry/normative-and-legislative-acts/orders/
10. On Endorsement of the Waste Classification. Decree of the Minister of Environmental Protection of the Republic of Kazakhstan of May 31, 2007, № 169-p. http://www.eco.gov.kz/new2012/ministry/normative-and-legislative-acts/orders/
11. On Endorsement of the Instruction on Running the State Cadaster on Hazardous, Radioactive Wastes and Waste Water Disposal to the Soil. Decree of the Minister of Environmental Protection of the Republic of Kazakhstan of July 25, 2007, № 237-p. http://www.eco.gov.kz/new2012/ministry/normative-and-legislative-acts/orders/
12. On Endorsement of the Management Rules concerning abandoned hazardous wastes recognized as republican property by the court ruling. Decree of the Government of the Republic of Kazakhstan of October 8, 2007, № 919 http://www.eco.gov.kz/new2012/ministry/normative-and-legislative-acts/decision/
13. On Endoresement of the Passport Form of Hazardous Wastes. Decree of the Minister of Environmental Protection of the Republic of

	Kazakhstan of April 30, 2007, № 128-p. Registered in the Ministry of Justice of the Republic of Kazakhstan on July 11, 2007, № 4720 http://www.eco.gov.kz/new2012/ministry/normative-and-legislative-acts/orders/ 14. On Endorsement of Hazardous, Radioactive Wastes and Waste Water Disposal to the Soil. Decree of the Government of the Republic of Kazakhstan of April 2, 2011, № 347 http://www.eco.gov.kz/new2012/ministry/normative-and-legislative-acts/decision/ 15. On Endoresement of the Rules of Wastes Import, Export and Transit. Decree of the Government of the Republic of Kazakhstan of July 11, 2007, № 594 http://www.eco.gov.kz/new2012/ministry/normative-and-legislative-acts/decision/ 16. On Endorsement of the Rules of Running the State Cadaster of Hazardous, Radioactive Wastes and Waste Water Disposal to the Soil. Decree of the Government of the Republic of Kazakhstan of February 8, 2011, № 88 http://www.eco.gov.kz/new2012/ministry/normative-and-legislative-acts/decision/ 17. On Strategic Plan of the Ministry of Environment protection of the Republic of Kazakhstan for 2011-2015 http://www.eco.gov.kz/new2012/wpcontent/uploads/2013/02/strateg_plan_29.12.htm
OEAE	The 2nd OEP of Kazakhstan, 2008. Chapter 5. Management of Household and Industrial Wastes in Eastern Regions: Recommendation 5.1, Recommendation 5.2, Recommendation 5.3 Chapter 6. Management of Areas Polluted with Radioactive Wastes: Recommendation 6.1, Recommendation 6.4, Recommendation 6. info.ece@unece.org : http://www.unece.org http://www.unece.org/env/epr/epr_studies/kazakhstan%20II.pdf

2.5 Air: Kyrgyzstan

KYRGYZSTAN	Data
Air	
Air	1. Convention on TBAP: Transboundary air pollution by main pollutants (S, N, O$_3$) and PM in 2010, Kyrgyzstan, 2012 (ISSN 1890-0003) http://emep.int/publ/reports/2012/Country_Reports/report_KG.pdf http://emep.int/publ/reports/2012/Country_Reports/report_KG_rus.pdf
Latest reports on environmental pollution	1. National Report on the State of Environment of Kyrgyz Republic for 2006-2011, 2012 – Section 1. Air pollution and ozone layer degradation; – Section 2. Climate change (GHG emission); – Section 11. Environment and population health. http://www.nature.kg/images/files/bookND_web.pdf 2. Environmental review of the Kyrgyz Republic, 2009 – Sub-title 4.1 Ambient air – Sub-title 5.2 Air pollution – Sub-title 6.1.1 Environmental monitoring system – Sub-title 3.2 Economic development and its environmental impact http://www.nature.kg/images/files/eco.pdf 3. The Kyrgyz Republic's Second National Communication to the United Nations framework Convention on Climate Change, 2008 http://unfccc.int/resource/docs/natc/kyrnc2e.pdf - eng http://www.nature.kg/images/files/NC2_Kyrgyzstan_rus.pdf
Sector reports and assessments	1. Kyrgyzhydromet Yearbook: – Information on the state of environment pollution; – Yearbook on the state of urban environment pollution of Kyrgyz republic; – Background concentration of pollutants in cities and settlements of Kyrgyz Republic. http://www.meteo.ktnet.kg/index.php?page=3 http://www.meteo.ktnet.kg/environment_air.php 2. Programme «Capacity Building for Air Quality Management and the Application of Clean Coal Combustion Technologies in Central Asia» within the framework of the CAPACT project Regional: 3. Sub-regional Integrated environmental assessment, Central Asia, 2007
Environmental statistics	1. Environmental protection in the Kyrgyz Republic, 2000-2006. Statistical Compendium - Chapter III. Ambient air protection (стр.25-39) http://stat.kg/images/stories/docs/tematika/social/Env.%20prot.%20 2000-2006.pdf 2. 20 years of independence of the Kyrgyz Republic. Figures and facts, 2011

	– Section «Environmental protection» (p.106) http://stat.kg/images/stories/docs/tematika/%20__%20.pdf – rus. http://stat.kg/images/stories/docs/tematika/L-Final%20.pdf – eng. 3. Social Trends of the Kyrgyz Republic 2006-2010 – Section «State of ambient air» (p. 128) http://stat.kg/images/stories/docs/tematika/trendy%202010.pdf – rus. http://stat.kg/images/stories/docs/tematika/svod/Soz.%20Trendy%20 2006-2010.pdf – eng. 4. Statistic yearbook of Kyrgyz Republic, 2006-2010 Section 3. Natural resources and environmental protection (pages 30-31) http://stat.kg/images/stories/docs/tematika/svod/Yearbook%202006- 2010.pdf 5. Kyrgyzstan is in numbers. Statistical Compendium, 2012 Sub-section 23.3. Emission of pollutants by stationary sources in selected cities in 2011 (page 314) http://stat.kg/images/stories/docs/tematika/svod/KZ%202012.pdf
Environmental indicators	1. The 2nd Progress Report on MDGs in Kyrgyzstan, 2009 Goal 7. «Ensuring environmental sustainability» http://www.undp.kg/ru/resources/e-library/article/28-e-library/564- mdg-progress-report-2009 2. Guidelines for the application of environmental indicators in EECCA http://www.unece.org/fileadmin/DAM/env/europe/monitoring/ Belgrade/CRP1.Indicators.En%20edited.MK..pdf 3. Revised Guidelines on the Application of Environmental Indicators http://www.unece.org/environmental-policy/areas-of-work/ environmental-monitoring/areas-of-work/enveuropemonitoringiandr- en/revised-guidelines-on-the-application-of-environmental-indicators. html 4. Guidelines for Developing National Strategies to Use Air and Water Quality Monitoring as Environmental Policy Tools, 2012 http://www.unece.org/index.php?id=30339
Environmental performance reviews	1. The Second Environmental Performance Review of Kyrgyzstan, 2009 http://www.unece.org/env/epr/epr_studies/Kyrgyzstan%20II%20En.pdf http://www.nature.kg/images/files/Kyrgyzstan%20II%20ru.pdf

2.6 Climate change: Kyrgyzstan

KYRGYZSTAN	Data
Climate change	
Climate	1. The Kyrgyz Republic's Second National Communication to the United Nations framework Convention on Climate Change, 2008 http://unfccc.int/resource/docs/natc/kyrnc2e.pdf - eng.
Latest report on the state of environment	1. The National Report on the state of the environment of Kyrgyz Republic for 2006-2011, 2012 – Chapter 2. Climate change http://www.nature.kg/images/files/bookND_web.pdf 2. Environmental overview of Kyrgyz Republic, 2009 – Sub-topic 5.1 Climate change – sub-topic 5.2 Pollution of the air (GHG) http://www.nature.kg/images/files/eco.pdf
Report and assessments by sector	1. Programmer of the health sector of Kyrgyz Republic on climate change adaptation for 2011- 2015, 2011 http://www.med.kg/Articles/ViewSection.aspx?ArticleID=383 2. Climate change: case studies of adaptation practices on the community levels, 2012 http://www.undp.kg/ru/resources/e-library/article/28-e-library/2062-climate-change-adaptation-book 3. Climate change in Kyrgyzstan: Analysis of tendency, impacts and adaptation in Kara-Kuldgynsky region of Osh oblast, 2012 http://www.infoik.net.kg/images/files/cc_analysis_ru.pdf 4. Adaptation of water sector of Kyrgyzstan to global climate change, 2011 http://centralasia.iwlearn.org/dokumenty/project-docs-ru/component_kyrgyzstan-ru/adaptaciya-k-izmeneniyu-klimata-i-sektore-kyrgyzstana-vody_russkii Regional: 1. Sub-regional Integrated environmental assessment, Central Asia, 2007 2. Forests and Climate Change in Eastern Europe and Central Asia, 2010 www.fao.org/docrep/014/k9589e/k9589e.pdf 3. Road to Copenhagen: Climate Change and Poverty in Central Asia, 2009 http://www.caresd.net//site.html?en=0&id=23022
Environmental statistics	–
Environmental indicators	1. 2nd Progress Report on MDGs in Kyrgyzstan, 2009 Target 7. «Providing ecological sustainability» http://www.undp.kg/ru/resources/e-library/article/28-e-library/564-mdg-progress-report-2009

Environmental indicators	2. Guidelines for the application of environmental indicators in EECCA http://www.unece.org/fileadmin/DAM/env/europe/monitoring/Belgrade/CRP1.Indicators.En%20edited.MK..pdf 3. Revised Guidelines on the Application of Environmental Indicators http://www.unece.org/environmental-policy/areas-of-work/environmental-monitoring/areas-of-work/enveuropemonitoringiandr-en/revised-guidelines-on-the-application-of-environmental-indicators.html

2.7. Biodiversity: Kyrgyzstan

KYRGYZSTAN	Data
Biodiversity	
Biodiversity	1. The 4th National report on biodiversity, 2008 http://www.cbd.int/doc/world/kg/kg-nr-04-en.pdf; 2. National report on Ramsar Convention, 2012 г. http://www.ramsar.org/pdf/cop11/nr/cop11-nr-kyrgyz.pdf 3. Second report on implementation of Cartahena protocol on biosafety 2011 http://bch.cbd.int/database/record.shtml?documentid=102641 4. Ramsar information list, Ramsar lake Son Kul,2010 http://www.supporttofishery.org/wp-content/uploads/2013/02/Radiation-report_rus_checked.pdf
Last reports on the state of Environment (2007-2011)	1. National report on State of the Environment за 2006-2011 годы, 2012 г.; Chapter 4. Biodiversity. Preserved areas Forests and other forest areas Endangeruos species, and protected species Tendency of change of numbers of species http://www.nature.kg/images/files/bookND_web.pdf 2. Complex assessment of natural resources for 2008-2010 Chapter 4. Results of the assessment 4.1. Land of preserved areas of Kyrgyz Republic 4.2. Land of forest funds 4.3. Forest land of Kyrgyz Republic covered by forest 4.4. Resumption of woody plants in Kyrgyzstan 4.5. The replenishment of tree and shrub vegetation of the Kyrgyz Republic 4.6. Biomass of Kyrgyzstan http://www.fao.org/forestry/30654-0cb0a06f2a277764a409e39896af550fa.pdf 3. Environmental review of the Republic of Kyrgyzstan, 2009 г. Chapter IV: The state of the environment 4.2. water resources 4.3. land resources 4.4. forest resources

	4.5. biodiversity 4.6. preserved areas 4.7. mountain ecosystems http://geodata.rrcap.unep.org/envt_outlook_reports/eco.pdf; 4. The second report on the progress on achieving of millennium development goals, 2010 Target 7. Providing environmental sustainability Biodiversity Areas of the forests http://www.undp.kg/ru/resources/e-library/article/28-e-library/1405-vtoroj-otchet-o-progresse-v-dostijenii-crt-v-kr-dopolennyj
Sectoral reports	1. The state if forest genetic resources in the Republic of Kazakhstan, 2008 http://www.fao.org/docrep/013/i1500e/Kyrgyzstan.pdf; 2. Special report on mission of FAO/WFP in Kyrgyzstan on the assessment of crops and food safety 2010 http://www.fao.org/docrep/013/al970r/al970r00.pdf; 3. Global assessment of forest resources. Report of Kyrgyzstan country, 2010 http://www.fao.org/docrep/013/al546E/al546E.pdf 4. Forest management and use of forest resources in the Republic of Kyrgyzstan: Perspectives of the development, 2011, http://www.rdf.in.kg/uploads/Publications/profor/Profor_final_report_RUS.pdf; 5. National report «Sate of forest genetic resources in Kyrgyz Republic», 2012 http://www.nature.kg/images/files/ndgenles.pdf 6. The report on research of radioactive substances in fish resources of Issyk-Kul lake, 2012 http://www.supporttofishery.org/wp-content/uploads/2013/02/Radiation-report_rus_checked.pdf
Statistics on the Environment	Kyrgyzstan in numbers. Statistical yearbook, 2012 Sub-chapter 7.2. Gross output from agriculture, hunting an d forestry http://stat.kg/images/stories/docs/tematika/svod/KZ%202012.pdf Statistical yearbook of Kyrgyz Republic for 2006-2010 Chapter 3. Naturak resources and protection of the environment 3.2. Forest area 3.3. Reserves and national natural parks 3.4. Conducted main activities sin forestry Chapter 15 Agriculture, hunting and forestry Main indicators of agriculture, hunting and forestry http://stat.kg/images/stories/docs/tematika/svod/Yearbook%202006-2010.pdf

Environmental indicator set	1. The second report on progress in achieving millennium development goals by Kyrgyzstan, 2010 Target 7. Providing environmental sustainability Biodiversity page 30. Area of forests pages: 48 and 50. http://www.undp.kg/ru/resources/e-library/article/28-e-library/1405-vtoroj-otchet-o-progresse-v-dostijenii-crt-v-kr-dopolennyj 2. Guidelines for the application of environmental indicators in EECCA Chapter D. Biodiversity http://www.unece.org/fileadmin/DAM/env/europe/monitoring/ Belgrade/CRP1.Indicators.En%20edited.MK..pdf 3. Revised Guidelines on the Application of Environmental Indicators D-1: Protected areas (PA) http://www.unece.org/fileadmin/DAM/env/europe/monitoring/ Indicators/D-1-en-final.pdf
Overview of environmental performance	Environmental performance review, 2009 r., UNECE, Committee on ecological policy, Second review Part III: The integration of environmental concerns in economic sectors and sustainable development Chapter 6: Sustainable management and protection of water resources Chapter 7: Management of land resources; Chapter 8: Preserving biodiversity and sustainable management of natural resources http://geodata.rrcap.unep.org/envt_outlook_reports/eco.pdf

2.8 Wastes: Kyrgyzstan

KYRGYZSTAN	Data
Wastes	
Wastes	1. National Report on the Implementation of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal http://www.nature.kg/index.php?option=com_content&view=articl e&id=490%3A2012-05-07-10-06-50&catid=34%3A2009-01-28-16-47-09&Itemid=69&lang=kg http://www.basel.int/Countries/Countryfactsheets/tabid/1293/Default.aspx
Last reports on state of the Environment	1. The National Report on the state of the environment of the Kyrgyz Republic for 2006-2011, 2012 – Chapter 9. Wastes http://www.nature.kg/images/files/bookND_web.pdf 2. Environmental performance review, 2009г., UNECE, Committee on ecological policy, Second review – Sub-chapter 3.2. Air – Sub-chapter 4.3 Land resources – Sub-chapter 5.5. Wastes

	– Chapter 6.Institutional mechanisms, ecological politics and international cooperation http://www.nature.kg/images/files/eco.pdf
Sectoral reports and assessments	1. The results of inventory of PCBs equipments 2010-2012 http://www.tailing.in.kg/ 2. Radioactive and toxic tailings in Kyrgyzstan http://www.tailing.in.kg/ 3. Illegal dumping in Bishkek city: http://www.tailing.in.kg/ 4. Kyrgyzstan: the environment and natural resources for sustainable development http://www.caresd.net/site.html?en=0&id=16884 5. The National Report on the state of the environment of the Kyrgyz Republic for 2006-2011, 2012 http://www.nature.kg/images/files/bookND_web.pdf 6. The National Report on the state of the environment of the Kyrgyz Republic for 2001-2003 7. National Profile on Chemicals Management in the Kyrgyz Republic http://www.nature.kg/index.php?option=com_content&view=article&id=281&Itemid=102&lang=ru 8. National Report on the Implementation of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal http://www.nature.kg/index.php?option=com_content&view=article&id=490%3A2012-05-07-10-06-50&catid=34%3A2009-01-28-16-47-09&Itemid=69&lang=ru 9. Statistical yearbook for 2006-2010 г.г. http://stat.kg/index.php?option=com_content&task=blogsection&id=11&Itemid=51 10. The list of studies on solid waste in Bishkek city http://bishkekgov.in.kg/index.php?option=com_content&view=article&id=617&Itemid=103&lang=ru
Statistics on the environment	1. Environmental protection in the Kyrgyz Republic, 2000-2006. Statistical Compendium http://stat.kg/images/stories/docs/tematika/social/Env.%20prot.%202000-2006.pdf 2. 20 years of independency of the Kyrgyz Republic. Figures and facts, 2011 http://stat.kg/images/stories/docs/tematika/%20__%20.pdf – rus. http://stat.kg/images/stories/docs/tematika/L-Final%20.pdf – eng. 3. Statistical yearbook of Kyrgyz Republic 2006-2010 http://stat.kg/images/stories/docs/tematika/svod/Yearbook%202006-2010.pdf

	4. Kyrgyzstan is in the numbers. Statistical Compendium, 2012 http://stat.kg/images/stories/docs/tematika/svod/KZ%202012.pdf
Environmental indicators	1. 2nd Progress Report on MDGs in Kyrgyzstan, 2009 Target 7. «Providing environmental sustainability» http://www.undp.kg/ru/resources/e-library/article/28-e-library/564-mdg-progress-report-2009 2. The Guidelines for the application of environmental indicators in EECCA http://www.unece.org/fileadmin/DAM/env/europe/monitoring/Belgrade/CRP1.Indicators.En%20edited.MK..pdf 3. Revised Guidelines on the Application of Environmental Indicators http://www.unece.org/environmental-policy/areas-of-work/environmental-monitoring/areas-of-work/enveuropemonitoringiandr-en/revised-guidelines-on-the-application-of-environmental-indicators.html
Overview of environmental performance	1. The Second Environmental Performance Review of Kyrgyzstan, 2009 http://www.unece.org/env/epr/epr_studies/Kyrgyzstan%20II%20En.pdf http://www.nature.kg/images/files/Kyrgyzstan%20II%20ru.pdf

Annex 3: The status of Kazakhstan and Kyrgyzstan with MEAs

Table 1 - MEAs to which Kazakhstan has reporting obligations on assessed thematic areas

№	Name of the MEA	The year of accession	Responsible Agency	Reporting Yes|No	Reporting periodicity	№ of reports submitted	Latest report published	Source of funding
1.	United Nations Convention on Biological Diversity (UNCBD)	1994	MoEPWR	Yes	4-year	4	2010	RoK/GEF
2.	United Nations Framework Convention on Climate Change (UNFCCC)	1995	MoEPWR	Yes	3-5 year	2 1998,2009	2009	UNDP/GEF
3.	Kyoto Protocol to UNFCCC	2009	MoEPWR	Yes	Annual	4	2013	RoK
4.	United Nations Convention to Combat Desertification in Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa (UNCCD)	1997	MoEPWR	Yes	2-4 years	3 2000,2002, 2006	2006	RoK
5.	UNECE Convention on Long-range Transboundary Air Pollution	2000	MoEPWR	Yes	Annual	1 2010	2010	RoK
6.	UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention)	2000	MoEPWR	Yes	Three-year	3	2011	RoK
7.	Vienna Convention for the protection of the ozone layer and the Montreal Protocol on substances that deplete the ozone layer	1998	MoEPWR	Yes	Annual statistical	Annual	NRP	RoK
8.	Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar Convention)	2005	MoEPWR	Yes	Three-year	1	2008	RoK
9.	Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention)	2005	MoEPWR	Yes	Three-year	none		
10.	Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)	1999	MoEPWR	No	Annual	None	-	RoK
11.	Cartagena Protocol on Biosafety to the UNCBD	2008	MESK* MoEPWR	Yes	Three-year	1	2011	RoK
12.	Convention on Protection of the World Cultural and Natural Heritage	1994	MoEPWR	Yes	Six-years	1	2010	RoK
13.	Basel Convention on the Control of Transboundary	2003	MoEPWR	Yes	Annual	4	NRP	RoK

NRP* - not required to publish; MESK – Ministry of Education and Science

Table 2- MEAs to which Kyrgyzstan has reporting obligations on assessed thematic areas

№	Name of the MEA	The year of accession	Responsible Agency	Reporting Yes|No	Reporting periodicity	N of reports submitted	The latest report published	Source of funding
1.	**United Nations Convention on Biological Diversity (UNCBD)**	1996	SAEPF	Yes	3-4 year	4	2008	UNDP/GEF, SAEP
2.	United Nations Framework Convention on Climate Change (UNFCCC)	2000	SAEPF	Yes	3-5 year	2 2005,2008	2009	UNDP/GEF
3.	UNECE Convention on Long-range Transboundary Air Pollution	2000	SAEPF	Yes	Annual	2 2010,2011	NRP*	SAEPF
4.	UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention)	2001	SAEPF	Yes	Three-year	3, 2004, 2007, 2010	2012	UNDP
5.	Vienna Convention for the protection of the ozone layer and the Montreal Protocol on substances that deplete the ozone layer	2000	SAEPF	Yes	Annual statistical	Annual	NRP	SAEPF
6.	Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar Convention)	2002	SAEPF	Yes	Three-year	3	2012	SAEPF
7.	Convention on International Trade in Endangered Species of Wild Fauna and Flora (**CITES**)	2006	SAEPF	Yes	Annual	3	2011	SAEPF
8.	**Cartagena Protocol on Biosafety** to the UN Convention on Biological Diversity	2005	SAEPF	Yes	Three-year for COP	1	2011	UNEP/GEF, SAEPF
9.	Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal	1996	SAEPF	Yes	Annual	3 2009-2011	NRP	SAEPF
10	**Rotterdam Convention** on Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade	2000	SAEPF	No				
11	**Stockholm Convention** on Persistent Organic Pollutants (POPs)	2006	SAEPF	Yes	Three-year		NRP	SAEPF

NRP* - not required to publish

Annex 4: Country Tables on relevance of selected assessments to the UNECE environmental indicators, EEA set of sub-topics and subjects

Table 4.1 Proportion of Air in the elected assessments (Kazakhstan)

Assessments and the air related indicators and topics in them		applicable YES/NOT	Pgs per items	% of pgs
NSoER-2010 (241 pgs)		**YES**	**18,0**	**7,5**
Indicators	Emissions of pollutants into the atmospheric air	YES	38,9	26,7
	Ambient air quality in urban areas	YES	27,8	33,3
	Consumption of ozone-depleting substances	YES	33,3	40,0
Topics	**Air Emissions**	**YES**	**38,9**	**26,7**
	Related impacts	YES	28,6	25,0
	Related monitoring	NOT	0,0	0,0
	Per sector	NOT	0,0	0,0
	Per pollutants	YES	71,4	50,0
	Air Quality	**YES**	**27,8**	**33,3**
	Related impacts	YES	10,0	10,0
	Related monitoring	YES	10,0	10,0
	Per sector	NOT	0,0	0,0
	Per pollutants	YES	80,0	80,0
IBSE-2012 (215 pgs)		**YES**	**64,0**	**29,8**
Indicators	Emissions of pollutants into the atmospheric air	NOT	0,0	0,0
	Ambient air quality in urban areas	YES	64,0	100,0
	Consumption of ozone-depleting substances	NOT	0,0	0,0
Topics	**Air Emissions**	**NOT**	**0,0**	**0,0**
	Related impacts	NOT	0,0	0,0
	Related monitoring	NOT	0,0	0,0
	Per sector	NOT	0,0	0,0
	Per pollutants	NOT	0,0	0,0
	Air Quality	**YES**	**64,0**	**100,0**
	Related impacts	NOT	2,0	3,1
	Related monitoring	YES	18,0	28,1
	Per sector	NOT	0,0	0,0
	Per pollutants	YES	44,0	68,8
AIR in EP&SD 2007-2010 (194 tables)		**YES**	**25,0**	**12,9**
Indicators	Emissions of pollutants into the atmospheric air	YES	11,0	44,0
	Ambient air quality in urban areas	YES	3,0	12,0
	Consumption of ozone-depleting substances	YES	1,0	4,0
Topics	**Air Emissions**	**YES**	**11,0**	**44,0**
	Related impact	YES	2,0	18,2
	Related monitoring	YES	4,0	36,4
	Per sector	YES	2,0	18,2
	Per pollutants	YES	3,0	27,3
	Air Quality	**YES**	**3,0**	**12,0**
	Related impacts	NOT	0,0	0,0
	Related monitoring	YES	1,0	33,3
	Per sector	YES	1,0	33,3
	Per pollutants	YES	1,0	33,3

Table 4.2 Proportion of Climate Change in the selected assessments (Kazakhstan)

Climate change by indicators and topics		applicable YES/NOT	pgs per items	% of pgs
NSoER-2010 (241 pgs)		**YES**	**19,0**	**7,9**
Indicators	Air temperature	YES	1,0	5,3
	Atmospheric precipitation	YES	1,0	5,3
	Greenhouse gas emissions	YES	4,0	21,1
Topics	**Greenhouse gases and SLCF emissions and concentrations in air**	**YES**	**4,0**	**21,1**
	Per pollutant	YES	2,0	50,0
	Per sector	YES	2,0	50,0
	Related monitoring (through observation – through modelling)	NOT	0,0	0,0
	Impacts and vulnerability	**YES**	**2,0**	**10,5**
	Related measures (adaptation – mitigation)	YES	2,0	100,0
SNC to UNFCCC-2008 (163 pgs)		**YES**	**121,0**	**74,2**
Indicators	Air temperature	YES	13,0	10,7
	Atmospheric precipitation	YES	3,0	2,5
	Greenhouse gas emissions	YES	64,0	52,9
Topics	**Air Emissions**	**YES**	**64,0**	**52,9**
	Per pollutant	YES	7,0	10,9
	Per sector	YES	12,0	18,8
	Related monitoring (through observation – through modelling)	YES	13,0	20,3
	Impacts and vulnerability	**YES**	**54,0**	**44,6**
	Related measures (adaptation – mitigation)	YES	43,0	79,6
NIR-2013 (296 pgs)		**YES**	**226,0**	**76,4**
Indicators	Air temperature	YES	1,0	0,4
	Atmospheric precipitation	YES	1,0	0,4
	Greenhouse gas emissions	YES	224,0	99,1
Topics	**Air Emissions**	**YES**	**224,0**	75,7
	Per pollutant	YES	3,0	1,3
	Per sector	YES	221,0	98,7
	Related monitoring (through observation – through modelling)	NOT	0,0	0,0
	Impacts and vulnerability	**NOT**	**0,0**	**0,0**
	Related measures (adaptation – mitigation)	NOT	0,0	0,0

Table 4.3 Proportion of Biodiversity topic in the selected assessments (Kazakhstan)

	Biodiversity by indicators and topics	applicable YES/NOT	pgs per items	% of pgs
	The 4th National Report on progress in implementation of the convention on biological diversity (91 pgs)	**YES**	**91,0**	**100,0**
Indicators	Protected areas	YES	3,0	3,3
	Forest and other wooded land	YES	0,0	0,0
	Threatened and protected species	YES	5,0	5,5
	Trends in the number and distribution of selected species	YES	5,0	5,5
Topics	**Sub-topic: species (fauna, flora, …)**	**YES**	**6,0**	**6,6**
	Protected internationally (CITES, …)	YES	1,0	16,7
	Protected nationally	YES	3,0	50,0
	Invasive alien species	YES	2,0	33,3
	Protected areas	**YES**	**3,0**	**3,3**
	Protected internationally (Ramsar, …)	YES	0,0	0,0
	Protected nationally	YES	3,0	100,0
	Ecosystems and habitats	**YES**	**17,0**	**15,5**
	By types	YES	17,0	100,0
	National report on the state of the environment in the Republic of Kazakhstan(241 pgs)	**YES**	**18,0**	**7,5**
Indicators	Protected areas	YES	4,0	22,2
	Forest and other wooded land	YES	8,0	44,4
	Threatened and protected species	YES	3,0	16,7
	Trends in the number and distribution of selected species	YES	3,0	16,7
Topics	**Sub-topic: species (fauna, flora, …)**	**YES**	**5,0**	**27,8**
	Protected internationally (CITES, …)	YES	0,0	0,0
	Protected nationally	YES	5,0	100,0
	Invasive alien species	YES	0,0	0,0
	Protected areas	**YES**	**4,0**	**22,2**
	Protected internationally (Ramsar, …)	NOT	0,0	0,0
	Protected nationally	NOT	4,0	100,0
	Ecosystems and habitats	**YES**	**0,0**	**0,0**
	By types	YES	0,0	0,0
	Protection of the Environment and Sustainable Development in the Republic of Kazakhstan (2007-2011) (188 tables)	**YES**	**20,0**	**10,6**
Indicators	Protected areas	YES	3,0	15,8
	Forest and other wooded land	YES	11,0	57,9
	Threatened and protected species	YES	2,0	10,5
	Trends in the number and distribution of selected species	YES	1,0	5,3
Topics	**Sub-topic: species (fauna, flora, …)**	**YES**	**3,0**	**15,8**
	Protected internationally (CITES, …)	NOT	0,0	0,0
	Protected nationally	YES	3,0	100,0
	Invasive alien species	NOT	0,0	0,0
	Protected areas	**YES**	**3,0**	**15,8**
	Protected internationally (Ramsar, …)	NOT	0,0	0,0
	Protected nationally	YES	3,0	100,0
	Ecosystems and habitats	**YES**	**3,0**	**15,8**
	By types - forests	YES	3,0	100,0

Table 4.4 Proportion of Wastes in the selected assessments (Kazakhstan)

Wastes by indicators and topics		applicable YES/NOT	pgs per relevant items	% of pgs per relevant item
NSoER-2010			**241,0**	**100,0**
Indicators	Waste generation	**YES**	2,0	0,8
	Transboundary movement of hazardous waste	YES	0,0	0,0
	Waste reuse and recycling	YES	0,0	0,0
	Final waste disposal	YES	0,0	0,0
Topics	**Waste streams**	**YES**	**2,0**	**0,8**
	Municipal/household	YES	1,0	50,0
	Industrial	YES	1,0	50,0
	Hazardous	NOT	0,0	0,0
	Transboundary movement of waste	NOT	0,0	0,0
	Waste management	**NOT**	**0,0**	**0,0**
	Municipal/household	NOT	0,0	0,0
	Industrial	NOT	0,0	0,0
	Hazardous	NOT	0,0	0,0
	Transboundary movement of waste	NOT	0,0	0,0
Report on Transboundary Movements of Hazardous Wastes and their Disposal for (Basel Convention) 2009		**YES**	**142,0**	**100,0**
Indicators	Waste generation	YES	16,0	11,3
	Transboundary movement of hazardous waste	YES	13,0	9,2
	Waste reuse and recycling	NOT	0,0	0,0
	Final waste disposal	YES	10,0	7,0
Topics	**Waste streams**	**YES**	**37,0**	**26,1**
	Municipal/household	YES	1,0	3,4
	Industrial	YES	2,0	6,9
	Hazardous	YES	14,0	48,3
	Transboundary movement of waste	YES	14,0	48,3
	Waste management	**YES**	**2,0**	**1,4**
	Municipal/household	YES	1,0	50,0
	Industrial	YES	0,0	0,0
	Hazardous	YES	1,0	50,0
	Transboundary movement of waste	YES	0,0	0,0
EPSD 2007-2011			**188,0**	**100,0**
wastes (tables)		**YES**	**9,0**	**4,8**
Indicators	Waste generation	YES	6,0	66,7
	Transboundary movement of hazardous waste	YES	1,0	11,1
	Waste reuse and recycling	YES	1,0	11,1
	Final waste disposal	YES	1,0	11,1
Topics	**Waste streams**	**YES**	**7,0**	**3,2**
	Municipal/household	YES	2,0	33,3
	Industrial	NOT	0,0	0,0
	Hazardous	YES	4,0	66,7
	Transboundary movement of waste	YES	1,0	16,7
	Waste management	**YES**	**2,0**	**1,6**
	Municipal/household	YES	1,0	50,0
	Industrial	NOT	0,0	0,0
	Hazardous	YES	1,0	50,0
	Transboundary movement of waste	NOT	0,0	0,0

Table 4.5 Proportion of Air in selected assessments (Kyrgyzstan)

Assessments and the air related indicators and topics		applicable YES/NOT	pgs per relevant items	% of pgs per relevant item
National Report on the state of the environment of the Kyrgyz Republic for 2006-2011 (118 pgs)		**YES**	**13,0**	**11,0**
Indicators	Emissions of pollutants into the atmospheric air	YES	6,0	46,2
	Ambient air quality in urban areas	YES	5,0	38,5
	Consumption of ozone-depleting substances	YES	2,0	15,4
Topics	**Air Emissons**	**YES**	**6,0**	**46,2**
	Related impacts	NOT	0,0	0,0
	Related monitoring	NOT	0,0	0,0
	Per sector	YES	1,0	16,7
	Per pollutants	YES	5,0	83,3
	Air Quality	**YES**	**7,0**	**53,8**
	Related impacts	YES	2,0	28,6
	Related monitoring	NOT	0,0	0,0
	Per sector	NOT	0,0	0,0
	Per pollutants	YES	5,0	71,4
Statistical yearbook of Kyrgyz Republic 2006-2010 (430 pgs)			**2,0**	**0,5**
Indicators	Emissions of pollutants into the atmospheric air	YES	2,0	100,0
	Ambient air quality in urban areas	NOT	0,0	0,0
	Consumption of ozone-depleting substances	NOT	0,0	0,0
Topics	**Air Emissons**	**YES**	**2,0**	**100,0**
	Related impacts	NOT	0,0	0,0
	Related monitoring	NOT	0,0	0,0
	Per sector	NOT	0,0	0,0
	Per pollutants	YES	2,0	100,0
	Air Quality	**NOT**	**0,0**	**0,0**
	Related impacts	NOT	0,0	0,0
	Related monitoring	NOT	0,0	0,0
	Per sector	NOT	0,0	0,0
	Per pollutants	NOT	0,0	0,0
Transboundary air pollution by main pollutants (S, N, O3) and PM in 2010, Kyrgyzstan (25,0)			**12,0**	**48,0**
Indicators	Emissions of pollutants into the atmospheric air	YES	9,0	75,0
	Ambient air quality in urban areas	NOT	0,0	0,0
	Consumption of ozone-depleting substances	YES	3,0	25,0
Topics	**Air Emissons**	**YES**	**12,0**	**100,0**
	Related impacts	YES	2,0	16,7
	Related monitoring	NOT	0,0	0,0
	Per sector	NOT	0,0	0,0
	Per pollutants	YES	10,0	83,3
	Air Quality	**NOT**	**0,0**	**0,0**
	Related impacts	NOT	0,0	0,0
	Related monitoring	NOT	0,0	0,0
	Per sector	NOT	0,0	0,0
	Per pollutants	NOT	0,0	0,0

Table 4.6 Proportion of Climate Change in the selected assessments (Kyrgyzstan)

Climate Change by indicators and topics		applicable YES/NOT	pgs per relevant items	% of pgs per relevant item
National Report on the state of the environment of the Kyrgyz Republic for 2006-2011 (118,0)		**YES**	**14,0**	**11,9**
Indicators	Air temperature	YES	3,0	21,4
	Atmospheric precipitation	YES	2,0	14,3
	Greenhouse gas emissions	YES	2,0	14,3
Topics	**Greenhouse gases and SLCF emissions and concentrations in air**	**YES**	**2,0**	**28,6**
	Per pollutant	NOT	1,0	50,0
	Per sector	YES	1,0	50,0
	Related monitoring (through observation – through modelling)	YES	0,0	0,0
	Impacts and vulnerability	**YES**	**4,0**	**57,1**
	Related measures (adaptation – mitigation)	**NOT**	**0,0**	**0,0**
The Kyrgyz Republic's second national communication to the United Nations Framework Convention on Climate Change (199 pgs)		**YES**	**176,0**	**94,6**
Indicators	Air temperature	YES	3,5	2,0
	Atmospheric precipitation	NOT	3,0	1,7
	Greenhouse gas emissions	YES	56,0	31,8
Topics	**Greenhouse gases and SLCF emissions and concentrations in air**	**YES**	**56,0**	**100,9**
	Per pollutant	YES	1,0	1,8
	Per sector	YES	45,0	80,4
	Related monitoring (through observation – through modelling)	YES	10,0	17,9
	Impacts and vulnerability	**YES**	**31,0**	**55,9**
	Related measures (adaptation – mitigation)	YES	15,0	48,4
Climate change in Kyrgyzstan: Tendency analysis, impacts and adaptation in Kara-Kuldga rayon of Osh oblast		**YES**	**57,0**	**100,0**
Indicators	Air temperature	YES	5,0	8,8
	Atmospheric precipitation	YES	4,0	7,0
	Greenhouse gas emissions	NOT	0,0	0,0
Topics	**Greenhouse gases and SLCF emissions and concentrations in air**	**YES**	**0,0**	**0,0**
	Per pollutant	YES	0,0	0,0
	Per sector	NOT	0,0	
	Related monitoring (through observation – through modelling)	NOT	0,0	0.0
	Impacts and vulnerability	**YES**	**46,0**	**80,7**
	Related measures (adaptation – mitigation)	**YES**	**24,0**	**52,2**

Table 4.7 Proportion of Biodiversity in the selected assessments (Kyrgyzstan)

	Biodiversity by indicators and topics	applicable YES/NOT	pgs per relevant items	% of pgs per relevant item
The National Report on the State of the Environment of the Kyrgyz Republic for 2006-2011 (118 pgs)		**YES**	12,0	10,2
Indicators	Protected areas	YES	3,0	25,0
	Forest and other wooded land	YES	2,0	16,7
	Threatened and protected species	YES	**4,0**	33,3
	Trends in the number and distribution of selected species	YES	3,0	25,0
Topics	**Sub-topic: species (fauna, flora, …)**	**YES**	**7,0**	**58,3**
	Protected internationally (CITES, …	YES	2,0	28,6
	Protected nationally	YES	5,0	71,4
	Invasive alien species	NOT	0,0	0,0
	Sub-topic: protected areas	**YES**	**3,0**	**25,0**
	Protected internationally (Ramsar, …)	YES	0,5	16,7
	Protected nationally	YES	2,5	83,3
	Sub-topic: ecosystems and habitats	**YES**	**2,0**	**16,7**
	By types (Agro-ecosystems, grasslands, coastal, forest, ice/rock/polar, islands, lakes, rivers and wetlands, marine, mountains, heath and scrubs, urban)	YES	2,0	100,0
Fourth National Report on Conservation of Biodiversity of the Kyrgyz Republic (101,0)				
Indicators	Protected areas	**YES**	**12,0**	**11,9**
	Forest and other wooded land	YES	3,0	**3,0**
	Threatened and protected species	YES	14,0	**13,9**
	Trends in the number and distribution of selected species	NOT	5,0	**5,0**
Topics	**Sub-topic: species (fauna, flora, …)**	**YES**	**19,0**	**18,8**
	Protected internationally (CITES, …	YES	5,0	26,3
	Protected nationally	YES	9,0	47,4
	Invasive alien species	YES	5,0	26,3
	Sub-topic: protected areas	**YES**	**12,0**	**11,9**
	Protected internationally (Ramsar, …)	YES	3,0	25,0
	Protected nationally	YES	9,0	75,0
	Sub-topic: ecosystems and habitats	**YES**	**6,0**	**5,9**
	By types (Agro-ecosystems, grasslands, coastal, forest, ice/rock/polar, islands, lakes, rivers and wetlands, marine, mountains, heath and scrubs, urban)	YES	6,0	100,0
National Report on the state of genetic resources of forests -2012 (59,0)				
Indicators	Protected areas	NOT	**0,0**	0,0
	Forest and other wooded land	YES	5,0	8,5
	Threatened and protected species	NOT	0,0	0,0
	Trends in the number and distribution of selected species	NOT	32,0	54,2

Topics	**Sub-topic: species (fauna, flora, …)**	NOT	32,0	54,2
	Protected internationally (CITES, …	NOT	0,0	0,0
	Protected nationally	NOT	0,0	0,0
	Invasive alien species	NOT	0,0	0,0
	Sub-topic: protected areas	NOT	0,0	0,0
	Protected internationally (Ramsar, …)	NOT	0,0	0,0
	Protected nationally	NOT	0,0	0,0
	Sub-topic: ecosystems and habitats	YES	5,0	8,5
	By types (Agro-ecosystems, grasslands, coastal, forest, ice/rock/polar, islands, lakes, rivers and wetlands, marine, mountains, heath and scrubs, urban)	YES	5,0	

Table 4.8 Proportion of Waste in the selected assessments (Kyrgyzstan)

	Wastes	applicable YES/NOT	pgs per relevant items	% of pgs per relevant item
National Report on the state of the environment of the Kyrgyz Republic for 2006-2011 (129)		**YES**	**8,0**	**6,2**
Indicators	Waste generation	YES	3,0	37,5
Indicators	Transboundary movement of hazardous waste	YES	1,5	18,8
Indicators	Waste reuse and recycling	YES	2,0	25,0
Indicators	Final waste disposal	YES	1,0	12,5
Topics	Waste streams	**YES**	**6,0**	**75,0**
Topics	Municipal/household	YES	2,0	33,3
Topics	Industrial	YES	1,5	25,0
Topics	Hazardous	YES	1,5	25,0
Topics	Transboundary movement of waste	NOT	1,0	16,7
Topics	Waste management	**YES**	**2,0**	**25,0**
Topics	Municipal/household	YES	0,5	25,0
Topics	Industrial	YES	0,5	25,0
Topics	Hazardous	NOT	0,5	25,0
Topics	Transboundary movement of waste	NOT	0,5	25,0
National Report on implementation of Basel Convention 2010 (27)		**YES**	**27,0**	**100,0**
Indicators	Waste generation	NOT	3,0	11,1
Indicators	Transboundary movement of hazardous waste	NOT	4,0	14,8
Indicators	Waste reuse and recycling	NOT	0,0	0,0
Indicators	Final waste disposal	NOT	1,0	3,7
Topics	Waste streams		**8,0**	**29,6**
Topics	Municipal/household	NOT	0,0	0,0
Topics	Industrial	NOT	3,0	37,5
Topics	Hazardous	NOT	3,0	37,5
Topics	Transboundary movement of waste	NOT	2,0	25,0
Topics	Waste management			
Topics	Municipal/household	NOT	0,0	0,0
Topics	Industrial	NOT	0,0	0,0
Topics	Hazardous	NOT	0,0	0,0
Topics	Transboundary movement of waste	NOT	0,0	0,0
National Profile on Chemicals Management in Kyrgyzstan (131)			**13,0**	**9,9**
Indicators	Waste generation	YES	7,0	53,8
Indicators	Transboundary movement of hazardous waste	YES	1,0	7,7
Indicators	Waste reuse and recycling	NOT	0,0	0,0
Indicators	Final waste disposal	YES	3,0	23,1
Topics	Waste streams	**YES**	**13,0**	
Topics	Municipal/household	NOT	0,0	0,0
Topics	Industrial	YES	5,0	38,5
Topics	Hazardous	YES	7,0	53,8
Topics	Transboundary movement of waste	NOT	1,0	7,7
Topics	Waste management	NOT	**0,0**	0,0
Topics	Municipal/household	NOT	0,0	0,0
Topics	Industrial	NOT	0,0	0,0
Topics	Hazardous	NOT	0,0	0,0
Topics	Transboundary movement of waste	NOT	0,0	0,0

Annex 5

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