DESK STUDY

on

Assessment of the capacity of countries of Eastern Europe, Caucasus and Central Asia to produce statistics on measuring sustainable development and environmental sustainability

under the UN Development Account project

TOPIC 2

Measuring Sustainable Development

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I. Introduction

In 2012, the Statistical Division of the United Nations Economic Commission for Europe (UNECE) has launched a project under the United Nations Development Account (UNDA). The Project title is "Strengthening statistical capacity of countries with economies in transition to assess progress in achieving the UN Millennium Development Goal (MDG) on Environmental Sustainability and provide data on environmental vulnerabilities". The target countries are the twelve countries of Eastern Europe, Caucasus and Central Asia (EECCA): Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, the Republic of Moldova, the Russian Federation, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan.

Under the Project the desk study is being carried out. The desk study addresses the individual topics that are considered during the workshops held under the Project. This is the second Report under the desk study, focusing on measuring sustainable development[1].

The desk study has two main goals:

(a) assess data availability; data quality; methods of data collection, classifications applied etc.; compliance with internationally agreed standards, and

(b) provide countries with recommendations for further improvements.

The present report provides a general overview of the situation in the EECCA countries in terms of sustainable development measurement. In particular, it provides the readers with the information on public policies related to sustainable development, approaches to sustainable development measurement, and sustainable development indicators (SDI) applied by the EECCA countries. The findings are based on the survey conducted with the EECCA countries and on the information obtained during the Workshop on Measuring Sustainable Development held on 29 October 2012 in Geneva. Other sources, such as websites of national institutions and national publications were also consulted.

[1] The first workshop and the first report within the desk study discussed the topic of waste statistics and in particular practical challenges and problems in producing statistical data, information and indicators on waste generation and waste management, including recovery and disposal of waste.

II. Background

Measuring sustainable development

How sustainable development can be measured? In order to answer this question, it is essential to understand what is being measured. Sustainable development is a relatively new concept, and there is no single definition of it. For the purposes of this report, we would adopt the most common and a rather broad definition of the Report of the World Commission on Environment and Development 1987, also called after the name of the Chair of the Commission — Gro Harlem Brundtland — Brundtland Report. According to the Brundtland report sustainable development is the development that "*meets the needs of the present without compromising the ability of future generations to meet their own needs*". The Report defined three pillars of sustainable development, that is, economic, social, and environmental.

As for the sustainable development measurement, different approaches have been developed. Each country that launched the work on SDIs decided for itself which indicators to use. There are two major trends: to apply composite indicators or sets of indicators. While composite indicators are attractive because they provide one figure to compare as oppose to numerous indicators, their relevance is questionable. A disadvantage of large sets is the number of indicators. The approaches to indicator sets elaboration are also different, for instance, capital-based, policy-based, etc. This makes difficult the comparison at the international scale.

Numerous research studies were undertaken to look into the problem. In particular, the Joint UNECE/OECD/Eurostat Working Group on Statistics for Sustainable Development (WGSSD) developed a small set of SDIs to be used for the purpose of international comparison and presented it in 2009 in the publication "Measuring Sustainable Development"[2]. The publication contributed to reaching a common understanding of the principles of measuring sustainable development within the capital approach framework, and in particular of how to monitor the resources that the current generation passes on to the future generations in the form of economic, environmental, human and social capital.

As a follow-up to WGSSD, a new Joint UNECE/Eurostat/OECD Task Force for Measuring Sustainable Development (TFSD) was set up in 2009 to further develop the framework. Progress has been made in several main directions. The framework was extended to include the measurement of human well-being of the current generations and its distributional aspects. Furthermore, the framework took into account the relationships between countries and in particular how a country in its pursuit for well-being of its citizens may affect the well-being of the citizens of other countries. TFSD also identified commonalities in different indicator sets and carried out a thorough analysis on data availability in national and international databases.

In 2012, TFSD produced a report, the main achievement of which is the integration of the policy-oriented and capital approaches into a single conceptual framework. The report explains how the same indicators can be used in a flexible way to measure different aspects of sustainable development. The report proposes three possible SDI sets: a large set of 60 indicators selected in accordance to the conceptual foundations of sustainable development[3], another large set of 90 indicators selected on the basis of the

[2] United Nations Economic Commission for Europe (2009). Measuring Sustainable Development. United Nations New York and Geneva. Available from http://www.unece.org/fileadmin/DAM/stats/publications/Measuring_sustainable_development.pdf

[3] Indicators allowing to measure well-being of the current generation (human well-being), taking into account the impact that meeting needs of one country's population could have on other

main themes of sustainable development[4], and a small set of 24 indicators comprising those that are the most applied by statistical agencies for sustainable development measurement. The final report was consulted with the member countries of the Conference of European Statisticians (CES) in the beginning of 2013 and approved by the CES plenary session in June 2013. The report was considered valuable input to the development of the sustainable development goals, defining targets and their measurement, as well as a step forward in harmonizing the measurement of sustainable development.

In the meantime, at the national level, the countries elaborated their own approaches to sustainable development measurement. It is essential to evaluate whether SDIs can be compared across countries, in order to make analysis at the international scale. Such analysis would also require a common set of indicators.

Workshop on measuring sustainable development

The main aims of the Workshop on measuring sustainable development were to get a picture of the current situation and the prospects of sustainable development measurement in the EECCA countries; to inform about approaches used to measure sustainable development; to provide participating countries with the opportunity to share their experience; to define the major difficulties and challenges, and to set to the extent possible the directions for further activities. Experts from advanced countries (Switzerland and the Netherlands) as well as experts from international organizations (International Labour Office, European Environment Agency) presented the latest developments in the area.

Prior to the Workshop, UNECE carried out a survey of the participants from the EECCA countries. The questionnaire included questions on the relevance and importance of sustainable development in the countries and its prospects in terms of public policies priorities; and the existence of SDIs and sets of such indicators. An annex to the questionnaire aimed at getting information on availability of data for 80 indicators according to 19 subject areas proposed in the report of TFSD.

The indicators provided in the annex to the questionnaire were not always precisely defined leaving the possibility of various interpretations. Therefore, the results presented in the Annex to this report can only provide an approximate evaluation of the data availability. A number of indicators were particularly noted by several EECCA countries as requiring explanation and precisions: Knowledge spillovers, Competencies, Generalised trust, Expenditures on physical safety, Assets minus liabilities, Pension reserves, Life satisfaction, etc.

All the EECCA countries replied to the survey. The replies to the questionnaire as well as the information obtained during the Workshop served as a basis for the present report.

countries (transboundary impact), and of the future generation (capital).

[4] Twenty themes: Subjective well-being; Consumption and income; Nutrition; Health; Labour; Education; Housing; Leisure; Physical safety; Land and ecosystems; Water; Air quality; Climate; Energy resources; Non-energy resources; Trust; Institutions; Physical capital; Knowledge capital; Financial capital.

III. Sustainable development measurement in the EECCA countries

The Earth Summit in Rio de Janeiro in 1992 gave an impetus to the work on integration of sustainable development principles into public policies and elaboration of sustainable development concepts and strategies all over the world, including in the EECCA countries. All the countries of the region consider sustainable development a priority in terms of public policies. In some countries sustainable development strategies determine the goals in all the areas of countries' policies: this is particularly the case of Kazakhstan and Uzbekistan.

Significant work has been implemented by the EECCA countries. In most of them — Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, the Russian Federation, Tajikistan, and Uzbekistan — a strategy or a concept of sustainable development or of transition to sustainable development was elaborated. In Ukraine, the Concept of transition to sustainable development has been prepared, but has not been officially approved yet.

All the strategies are in line with the MDGs, in particular the goals 1, Eradicate extreme poverty and hunger, and 7, Ensure environmental sustainability. For instance, in Armenia, the Sustainable Development Program was elaborated on the basis of the Poverty Reduction Strategic Program keeping its priorities; in Azerbaijan the first MDG is also integrated in its sustainable development program, called the State Program on Poverty Reduction and Sustainable Development. The sustainable development strategies comprise all the aspects of sustainable development addressing economic, social and environmental issues.

The EECCA countries have taken a stepwise approach in their sustainable development strategies. Belarus, Kazakhstan, Tajikistan, and Ukraine (draft version of the strategy) define stages of transition to sustainable development. Furthermore, Kazakhstan and Tajikistan set quantitative targets that should be achieved within each stage of the transition. Quantitative targets are also defined in the Sustainable Development Program of Armenia and the National strategy for sustainable development of Belarus.

Armenia, Belarus, Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan have indicators of sustainable development. In the Russian Federation and Ukraine the indicators, though elaborated, have not yet been officially approved. SDIs of all the named countries are selected in accordance with sustainable development strategies of the countries, and, thus, respond to the countries' public policies priorities.

The countries that have developed the SDIs use the sets of indicators, where the indicators are divided into thematic groups reflecting the main areas of actions determined by the sustainable development strategy, e.g., economic, social, environmental, institutional etc. indicators. Several countries apply composite SDIs along with the sets. For example, Armenia developed the Sustainable Human Development Index, and Belarus — the Integrated indicator of sustainable development.

Countries that do not yet have a sustainable development strategy either already started the work on its elaboration, or are planning to do so in the nearest future. This is also the case of sustainable development measurement system — research has been undertaken in order to define the SDIs that are most appropriate to each country's situation.

When comparing the indicator sets of the EECCA countries, one could notice significant resemblance, but also major differences. The indicators could have the same name, but the metadata could differ in the way that the comparison is not possible without a profound analysis of each indicator. Different units and frequency of measurement also makes the comparison difficult. In any case, an indicator-by-indicator

comparison does not answer the question whether the country is on the sustainable path or not. There is a need for a common set of indicators that would allow obtaining such an answer.

Central Asia

Central Asia is an example of advanced international cooperation in sustainable development matters. The region has a number of environmental issues, such as the Aral Sea crisis, that are possible to resolve only with participation of all the countries involved. In 1993, the Agreement on Joint Actions for Addressing the Problems of the Aral Sea and its Coastal Area, Improving of the Environment and Ensuring the Social and Economic Development of the Aral Sea Region was signed by the heads of Central Asia states: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan, and the International Fund for Saving the Aral Sea was created. Two interstate commissions were established: the Interstate Commission for Water Coordination (1992) and the Interstate Commission on Sustainable Development (ICSD) (1993)[5].

The main function of ICSD is management of regional cooperation in the field of environment protection and sustainable development in the countries of Central Asia. The Commission's major tasks are defined as follows: organisation and coordination of the work on forming the regional strategy, programs and plans of sustainable development; management of the regional programs, action plans and projects on environment protection and sustainable development; organisation of expert assessment of regional projects; coordination of the activities aiming at meeting the obligations under environment protection conventions; promoting uniformity of legal and procedural frameworks related to environment protection; facilitating interstate information exchange and foundation of the regional database on environment protection.

Within the framework of the ICSD activities in 1998 was founded the Regional Environmental Center for Central Asia; in 2001 was developed and approved the Regional Environmental Action Plan for Central Asia; in 2008 the draft of the Sub-regional Strategy of Sustainable Development of Central Asia was proposed for consultation to the heads of the environment protection agencies of Central Asia**.** The strategy aims at ensuring progressive economic development, social security, and environmental sustainability; at establishing integrated water resources management and energy security mechanisms etc. The Strategy implies two stages: in the course of the first stage (2008–2015) the transition to sustainable development should be implemented in the countries of Central Asia, meaning ensuring market transformation taking into account environmental factors, improving living standards, and establishing the conditions for a stable and sound development of society; the second stage (2016–2030) would ensure the transition of the countries to the environmentally oriented social and economic development.

[5] Originally called the Interstate Commission on socio-economic development, scientific, technical and environmental cooperation, the Commission was renamed in 1995.

Armenia

Following the Earth Summit in Rio de Janeiro in 1992, and in particular the recommendation of the Agenda 21 for the countries to develop the system of indicators for measuring sustainable development, Armenia started the work to develop a Sustainable Development Index. The group of experts was created in 1995. The task of the group was to implement the research project called "Transformation of the Human Development Index into the Sustainable Human Development Index". The group worked closely with the United Nations Development Programme (UNDP).

The idea was to enlarge the existing Human Development Index (HDI) by adding the environmental component and thus to transform it to the Sustainable Human Development Index (SHDI). The methodology used for the environmental indicators was the same as for the indicators of HDI, so that the data would be comparable. The environmental component of SHDI was developed by 1996 and consisted of 21 indicators.

In 1996, the participants of the group formed the Association for Sustainable Human Development, the organisation which has been implementing its activities in order to raise awareness of the population about sustainable development, actively participating in the elaboration of the National Concept and Program of Sustainable Development.

In 2003, the Poverty Reduction Strategic Program (PRSP) was adopted by the Government of the Republic of Armenia. The priority was given to the reduction of the poverty level. Other targets were to reduce income inequality, sustain the existing human capital and develop it further, improve population's health and living conditions, as well as quality of education and health care services, decrease the rate of child and maternal mortality and other targets included in MDGs. PRSP comprised several quantitative targets, e.g., reducing the level of income poverty from 50.9 per cent in 2001 down to 19.7 per cent in 2015, decreasing the level of income inequality — the Gini coefficient of income concentration — from 0.535 in 2001 to 0.446 in 2015.

The process of the PRSP revision started in 2006 and resulted in the Sustainable Development Program (SDP) adopted by the Government of the Republic of Armenia in 2008. The revised program has kept as priorities the reduction of poverty, as well as the extreme poverty eradication, ensuring human development, and achieving balanced development of the regions. The Program identified the main directions of activities as follows: to ensure sustainable economic growth and social protection of vulnerable population groups, achieve better public governance, including efficient management of natural resources and environment preservation. The Program sets the quantitative targets for each area concerned, e.g., poverty reduction, economic growth, public administration, innovations and technologies, agriculture, drinking water supply, transport, energy, etc.

National Statistical Service of the Republic of Armenia (NSS) has been working on elaboration of the SDI system. The work has been carried out with the assistance of UNDP. The elaboration of the system is at the moment at the stage of finalisation. Thirteen indicators have been developed for international comparison, 31 to implement the analysis at the national level, and 60 for a more in-depth analysis (for regional evaluation of sustainable development, at the ecological region level which is not limited by the state boundaries).

The Sustainable Human Development Index is calculated in the same way as in 1996, that is, by adding environmental index to HDI. The indicators constituting the environmental index are divided into two groups: group A includes indicators characterising the state of environment; group B consists of indicators characterising the impact of human activities on environment. The indicators of the environmental index,

their characteristics and the methodology of calculation are presented in the Table 1. The proposed methodology of calculating the HSDI is the following:

$$\text{HDIs} = \sqrt[4]{\text{I}_1 \times \text{I}_2 \times \text{I}_3 \times \text{I}_\text{e}}$$

where I_1 — index of the life expectancy,

I_2 — education index,

I_3 — adjusted GDP index,

I_e — environmental factor index.

Each index is calculated according to methodology used for HDI, which can be presented as follows:

$$\text{Index} = \frac{Actual\ value\ -\ minimum\ value}{Maximum\ value\ -\ minimum\ value}$$

According to the information obtained from the UNECE questionnaire, the statistical system of Armenia contains the data for 50 out of 80 indicators proposed by TFSD. The groups of indicators "Consumption and Income", "Housing", "Air Quality" are fully covered, "Health", "Education", "Labour", "Institutions", "Energy Resources", "Water", "Climate" and "Financial Capital" are mostly covered. The groups of indicators "Physical safety", "Non-energy resources", "Land and Ecosystems", and "Knowledge Capital" are covered by half or less. The data for the indicators forming the groups "Leisure", "Trust", and "Physical Capital" are not present in the statistical system.

Most of the indicators declared as existing are collected by or reported to NSS, and are published annually in the Statistical Yearbook of Armenia and on the web site of NSS.

As for the group "Subjective well-being" the measurement is implemented within the framework of the Armenian Integrated Living Conditions Survey (ILCS). ILCS contains objective and subjective assessments of diverse aspects of social and economic conditions of life in Armenia with a particular focus on the poverty issues[6]. The subjective assessments of living standards include Perception of Living Standards and Satisfaction with Quality of Paid Services. ILCS has been conducted annually since 2001. The results of the survey are published in the annual report "Social Snapshot and Poverty in Armenia".

The data for such indicators of "Health" group as "Proportion of people who smoke" and "Proportion of obese people" are collected every five years within the framework of the "Armenia Demographic and Health Survey" conducted by NSS and the Armenian Ministry of Health. The funding for the survey is provided by the United States Agency for International Development (USAID), the United Nations Children's Fund (UNICEF) and the United Nations Population Fund (UNFPA). The survey contains data on the share of people who smoke, and on the share of women of age 15–49 who are overweight and obese. The data on the share of children under 5 years old who are obese are also available.

The group of indicators "Water" is fully covered with the exception of one indicator, that is, "Water quality index". While that is true that there is no single indicator of water

[6] The questions included in the survey and addressed to the citizens concern the following subjects: household roster, migration, housing conditions, occupation, education, agriculture, self-employment, monetary and commodity flows, health and healthcare, savings and loans, self-assessment of well-being, social capital and service delivery, social assistance, activities of private households as employers, and undifferentiated production activities of private households.

quality, the regular surface water monitoring is implemented in Armenia since 2004 on a regular basis. In particular, the indicators of surface water quality include: dissolved oxygen, phosphates, phosphorus content, biochemical oxygen demand (BOD5), nitrite etc. The data are published in the monthly report "Socio-economic situation in the Republic of Armenia".

Table 1

Indicators of the environment factor index by the National Statistical Service of the Republic of Armenia

Name of the index, indicator	*Characteristics of the index, indicator*	*Components of the index, their characteristics and the data sources*	*Calculation description*	*Threshold limit values of the indicator, component*	*Notes*
1	2	3	4	5	6
A. Index of the state of environment in the region: Calculated as an arithmetic average of the A1, A2, A3, A4 components					
A1 Indicator of the air basin conditions	The demand for the annual volume of air, necessary to bring the concentration of the air pollutants to the threshold limit values (TLV).	Annual controlled emission of pollutants in the given region (country), and their average daily concentration values. Data sources include statistical services and administrative registers (e.g. the environmental inspectorates)	Sum of the differences between the annual volumes of pollutants emission and their threshold limit values	Max — 10 bln. sq. m. Min — 200 mln sq. m.	The original version used the differentiated assessment of the excess over the threshold limit values. The indicator is taken with a negative sign.
A2 Indicator of the environmental state of the water resources	Grade ranking of the surface water quality (pollution)	Average annual concentration of the controlled pollutants in the surface waters. Data sources include administrative registers.	A quality grade is selected according to the average annual concentration of a given pollutant. The highest grade is taken as the base value.	Max — 5 points Min — 1 point	The table is taken as the system of assessment. The original version considered the concentration of the pollutants in excess of the normative values. The indicator is taken with a negative sign.
A3 Indicator of the environmental state of the land resources	Share of land degradation in the total volume of the arable land and perennial crop plantations.	Total share of eroded, second time saline, leaching, decarbonized, waterlogged, wetland, and disturbed soils in the total volume of the arable land and perennial crop plantations. Data sources include	The ratio between the listed types of soils and the total volume of the arable land and perennial crop plantations.	Max — 80% Min — 0%	The original version used the total volume of agricultural lands in the denominator. The indicator is taken with a negative sign.

Name of the index, indicator	*Characteristics of the index, indicator*	*Components of the index, their characteristics and the data sources*	*Calculation description*	*Threshold limit values of the indicator, component*	*Notes*
1	2	3	4	5	6
		administrative registers.			
A4 State of biodiversity indicator	Total share of high-value crops, vertebrates, forest areas in danger of extinction, critically endangered, endangered, and vulnerable in percentage values of their total quantities.	Total share of the listed species in their total quantities in the country. Data sources include administrative registers, results of the corresponding monitoring and research activities.	When assessing the indicators for the animals, the changes in the number of migratory bird species are also considered with a 0.25 coefficient, taking into consideration the fact that in this case the changes are conditioned by the situation in 4 neighboring countries on average. For the forest areas, the share of their annual loss/removal in the total area is considered.	For the animals and crops: Max — 16% Min — 0% For the forests: Max — 2% Min — 0%	The indicator is taken with a negative sign. A version which does not include the case of migratory birds is also proposed, taking into consideration the higher probability that the data is unavailable, as well as the lack of justification for using the 0.25 coefficient.
B. Environmental index of the human activity. Calculated as an arithmetic average of the B1, B2, B3, B4, B5, B6 components.					
B1 Greenhouse gas emissions indicator	CO2 emissions per capita	Annual emissions of all greenhouse gases recalculated into CO2. Data sources include administrative registers.	The corresponding conversion factors, and the average annual population of the country are used for the calculation.	Max — 6000 tons/year/person Min — 100 tons/ year/person	If the result of the calculation is with a negative sign, this will be an indirect indicator that the country has the selling quota. The original version proposed the use of the greenhouse gas emissions capturing and purification indicators. The indicator is taken with a negative sign.
B2 Water resource management indicator	Indicator of the sewage water mixing, and the accessibility of	– indicator of the necessary quantities of clean water to bring the	sub-indicators are calculated in the following way: – quantity,		The original version proposed the usage of per capita water intake, sewage

Name of the index, indicator	*Characteristics of the index, indicator*	*Components of the index, their characteristics and the data sources*	*Calculation description*	*Threshold limit values of the indicator, component*	*Notes*
1	2	3	4	5	6
	safe water	concentration of the pollutants in the receiving streams (surface water conduit) to the threshold limit values (TLV) – water utilization (water intake) index – indicator of the availability and accessibility of safe drinking water Data sources include administrative registers, household integrated surveys, and the results of other observations.	necessary for mixing (the ratio of the product of the integral coefficient of mixing and the sewage water volume to the volume, necessary for ensuring filling of the water conduit system to 95%) – ratio between the annual countrywide water intake and the reusable water resources under the country management. – is obtained from the aggregated household integrated surveys	Min — 0 Max — 0.4 Min — 0.1 Max — 1,0 Min — 0	water purification level, and safe water accessibility indicators. The indicator is taken with a negative sign.
B3 Waste management indicator	Indicator of the management of the waste arising from sanitary cleaning of the residential areas, and as a result of human activities (neutralization, disposal, utilization, burying)	The components are: – indicator of community sanitary cleaning and communal (municipal) waste management, – indicator of neutralization, disposal and utilization of the hazardous waste, – share of the waste not neutralized, recycled, disposed of, or utilized, in the total volume of waste. Data sources include administrative registers.	– shares of the quantities of municipal waste according to the reports of the organizations dealing with its management – share of the ultimately removed (disposed, neutralized, utilized) hazardous waste in their total volume, – share of waste not recycled, neutralized, disposed of, or utilized, in the total volume of waste (including	For all cases: Max — 1.0 Min – 0	The original version disregarded the indicator of the “share of the ultimately removed (disposed, neutralized, utilized) hazardous waste in their total volume. The indicator is taken with a negative sign.

Name of the index, indicator	*Characteristics of the index, indicator*	*Components of the index, their characteristics and the data sources*	*Calculation description*	*Threshold limit values of the indicator, component*	*Notes*
1	2	3	4	5	6
			nonhazardous waste).		
B4 Indicator of the efficient use of energy	Purchasing power parity (PPP) adjusted indicator of the energy use for producing $1000 of the GDP.	The components are the energy use and the share of alternative energy sources in the total volumes. Data sources include statistical services and administrative registers.	It is calculated as the ratio of the energy use in the country recalculated into the oil equivalent, and the produced PPP adjusted GDP.	Max — 650 Min – 50	The indicator is taken with a negative sign.
B5 Biodiversity protection indicator	Indicator of the management of special protected territories (national parks, state reserves, sanctuaries) for protection and use of biodiversity.	Data sources include administrative registers.	Share of the special protected territories in the total area of the country.	Max — 12% Min — 0%	The indicator is taken with a positive sign.
B6 Indicator of investments in environment	Annual volume of investments in the area of environmental protection.	Data sources include administrative registers.	It is calculated as the share of the annual volume of investments in the area of environmental protection in the country's GDP.	Max — 4% Min — 0%	The indicator is taken with a positive sign.

Source: Annex 6 of Rio+20, National assessment report (2012). Republic of Armenia, Yerevan. Available from: http://www.uncsd2012.org/content/documents/800Armenia_Report_Final.pdf

Azerbaijan

The State Program on Poverty Reduction and Sustainable Development for 2008–2015 in the Republic of Azerbaijan was approved by the Decree № 3043 (15.09.2008) of the President of the Republic of Azerbaijan. The main measures to undertake were determined in the Action Plan (2011–2015) for the implementation of the State Program on Poverty Reduction and Sustainable Development in the Republic of Azerbaijan in 2008–2015 approved by the Presidential Decree № 1578 (28.06.2011).

Main goals of the Program are in line with MDGs and cover economic, social and environmental aspects of sustainable development. Thus, the Program aimed at achieving the sustainable economic growth (by preservation of macroeconomic stability and balanced development of non-oil sector); reducing poverty rate; improving living conditions and quality of main services, environmental situation (by assuring sustainable management of environment); and achieving gender equality.

The work on introducing sustainable development principles continued with the Decree of the President of the Republic of Azerbaijan as of 29 November 2011 "On preparation of the development concept 'Azerbaijan 2020: Outlook for the Future'". In July 2012, the draft version of the concept was presented for the public consultation on the website of the President of the Republic of Azerbaijan.

The major goal of the Concept is defined as follows: "*…to take into consideration the existing opportunities and resources to achieve sustainable economic growth and social prosperity in Azerbaijan, ensure effective state governance, rule of law and complete exercise of all human rights and freedoms, and reach a development stage characterised with an active status of civil society in the country's public lif*e".

The Concept sets the following priorities: highly competitive economy; modernisation of the transport infrastructure; balanced development of regions; development of information and communication technologies and transition to a knowledge-based society; development of the human capital and social spheres (public health and healthcare, modern education system, social protection system, gender equality and family development); updating the legislation and reinforcing institutional capacity; civil society development; protection and effective use of cultural heritage; environmental protection and ecological matters (preserving biodiversity; restoring forests; reducing hazardous emissions to the air and water; optimising waste management; preventing desertification, etc.).

The quantitative targets to reach in 2020 are proposed for such indicators as the GDP per capita (13,000 USD), per capita volume of non-oil exports (1000 USD), growth of 7 per cent in the average annual non-oil GDP, population increase (1.1 per cent a year), population size (10.2 million), etc.

At the moment, there is no system of sustainable development measurement, neither any particular SDIs developed in Azerbaijan. The development of such indicators is planned for the nearest future.

As for SDIs proposed by TFSD, according to the reply of Azerbaijan to the UNECE questionnaire, 53 out of 80 indicators named in the questionnaire are currently measured and the data for these indicators are available in the country's statistical system. The groups of indicators "Health", "Housing", "Labour", "Energy Resources", "Water" and "Physical Capital" are fully covered. Mostly covered are the groups: "Consumption and Income", "Air quality", "Education", and "Institutions". The groups of indicators "Physical Safety", "Non-energy resources", "Land and Ecosystems", "Climate", "Knowledge Capital" and "Financial capital" are covered by 50 per cent or less. There are no data to form indicators of the groups "Subjective well-being", "Leisure", and "Trust".

Belarus

The first National Strategy for Sustainable Development (NSSD) was developed in 1997 for the period up to 2005. In 2001, the joint work of the Ministry of Economy of the Republic of Belarus, the Ministry of Natural Resources and Environmental Protection of the Republic of Belarus, and UNDP in order to develop a new NSSD began. In 2004, NSSD up to 2020 was approved by the National Sustainable Development Commission of Belarus and the Presidium of the Council of Ministers of Belarus. The major goal of the strategy is "*the dynamic improvement of public welfare, enrichment of culture and morals of people on the basis of intellectual and innovative development of economy, social sector and spirituality, conservation of environment for the present and future generations*".

To achieve the strategic goal of sustainable development, the Strategy defined two stages: stage one (until 2010) aims at improving life quality and living conditions, and increasing economic efficiency and competitiveness; and stage two (2011–2020) aims at achieving "*economic development that does not exceed the reproduction capacity of the biosphere",* and at creating a basis for a transition to resource-saving production.

The strategy establishes the system of indicators to ensure monitoring and control of sustainable development. The indicator system comprises the system-wide indicators and indicators reflecting regularities and processes of sustainable development. There are three system-wide indicators: the Integrated indicator of sustainable development (IISD), GDP per capita, and the Indicator of anthropogenic pressure on environment. The latter is defined as consumption of fuel and energy resources (in tons of equivalent fuel) per one square km.

IISD was developed on the basis of HDI. To calculate IISD, HDI was complemented with a component characterising the environmental situation in the country — the indicator "Amount of hazardous substances emissions per GDP unit" that includes the hazardous substances emissions into the air and water. IISD is then calculated as follows:

$$\frac{LEI + EI + GDP\ (per\ capita) + ESI}{4}$$

where LEI — life expectancy index;

EI — education index;

ESI — environmental situation indicator.

The indicators system specifies the threshold for each indicator, their actual value, coefficient of an indicator's weight in the integrated indicator, the organisation responsible for the indicators regulation. Main SDIs of Belarus, provided in the Annex 1 to the Strategy, are presented in Table 2. The Strategy states that in order to monitor sustainable development these indicators need to be complemented with additional indicators characterising the main pillars of sustainable development.

According to the questionnaire results Belarus has in its statistical system the data for 65 out of 80 indicators proposed by TFSD. The groups of indicators "Housing", "Air Quality", "Leisure", "Energy Resources", "Water", "Climate", and "Physical Capital" are fully covered. The groups "Consumption and Income", "Health", "Education", "Labour", "Institutions", "Non-energy resources", "Land and Ecosystems", "Knowledge Capital" are covered more than by half. The groups of indicators "Physical safety", "Trust", and "Financial Capital" are covered by half or less.

The data for the indicator "Life Satisfaction" under the theme "Subjective well-being" are not present in the statistical system. The data on life satisfaction of citizens at the age 15–24, as well as the data on satisfaction with friendly relations (group "Trust") nonetheless, will be available in 2013 with the results of the Multiple Indicator Cluster Survey (MICS4) implemented by the National Statistical Committee of the Republic of Belarus with the technical support of UNICEF in 2012.

The data for the indicators presented in the Belarus' statistics system are regularly published in Statistical Yearbook, statistical compendia such as "Republic of Belarus on the Way to Achieving Millennium Development Goals", "Environmental Protection in the Republic of Belarus", "Socio-economic situation in the Republic of Belarus", and on the web-site of the National Statistical Committee of the Republic of Belarus. Some indicators could be found on the web-sites of relevant institutions, that is, for example, the Ministry of Health, the Ministry of Natural Resources and Environmental Protection, the Ministry of Education, etc.

Table 2

Main sustainable development indicators of Belarus*

Indicators and scenarios	*Unit of measurement*	*2000*	*2001*	*2002*	*2003*	*2004*	*2005*	*2010*	*2015*	*2020*
		reported				*estimations*				
System-wide indicators of sustainable development										
Human Develoment Index	coefficient	0.775	0.785	0.790						
Anthropogenic pressure on environment	tons of equivalent fuel / km2	166.3	167.1	165.6	169	173	179.7	185	189	193
Environment										
Reserves by type of natural resources										
oil	m tons	62.98	62.95	63.47	62.91	62.3	64.2	60.3	56.4	53.2
potassium salts	bn tons	7.0	7.0	6.9	6.8	6.8	6.8	6.5	6.4	6.0
sodium chloride	bn tons	22	22	22	22	22	22	22	22	22
cement raw materials (clay and carbonate components)	m tons	468.0	464.6	460.2	456.7	453.7	450.7	435.7	420.5	405.0
Indices of industrial waste generation	%	95.3	105.2	106.1	107.4	97.6	101.8 119.3**	104.3	104.1	103.3
Indices of industrial waste use	%	95.6	92.3	118.0	105.4	102.3	104.4 122.6**	127.7	126.7	131.6
Indices of industrial and consumption waste accumulation	%	102.8	102.8	102.8	102.8	102.9	102.9 115.1**	104.7	102.6	100.0
Share of the recultivated lands in the total of the disturbed lands/soils	%	7.4	9.7	19.9	14.4	14.5	14.5	15	16	17
Indices of hazardous substances emissions into the atmosphere	%	94.4	98.4	99.3	102.6	100.9	99.2 100.3**	101.4	101.8	101.0
Indices of wastewater collection	%	88.3	101.6	97.4	102.1	103.0	101.5 105.6**	102.2	101.9	101.8
Expenditures of overcoming the consequences of the Chernobyl disaster	% to GDP	1.2	1.3	1.2	1.1	1.0	1.1	1.2	1.4	1.4

Source: National Sustainable Development Commission of Belarus (2004). National Strategy for Sustainable Development for the period to 2020 of the Republic of Belarus. Minsk. Available from: http://un.by/pdf/OON_sMall.pdf

* Indicators are presented mainly in relative terms: the final years of a five-year period, five year growth rate, for a year during the interim years. Cost parameters are in constant prices of 2002.

** For a period.

Georgia

In Georgia, numerous steps have been taken to meet obligations under different programs, such as the EU Neighbourhood Policy Action Plan (to develop a sustainable development strategy) or the Environmental Action Programme for Central and Eastern Europe (to develop and implement national environmental action programs).

Thus, the first National Environmental Action Programme (NEAP) was adopted in 2000 (Presidential Decree N 191 as of 20 May, 2000). It identified the major environmental problems to address and set short- and medium-term objectives to ensure efficient protection of environment, and sustainable use of natural resources.

In 2010, the work started on the second National Environmental Action Programme (NEAP-2) that was approved in 2012 (Resolution of the Government N 127 as of 24 January, 2012). NEAP-2 defines the short- and long-term goals for the period 2012–2016. It also sets the measures to be taken and the agencies responsible for their implementation. The areas covered by NEAP-2 are: water resources; ambient air protection; waste and chemicals; Black sea; biodiversity and protected areas; forestry; land resources; mineral resources; disasters; nuclear and radiation safety; and climate change.

NEAP complements several strategies and concepts adopted in the late 1990s, such as the Biodiversity Strategy and Action Plan (1996), the National Programme on Climate Change and Action Plan (1996), the National Strategic Action Plan for the Rehabilitation and Protection of the Black Sea (1999), etc.

A sustainable development strategy has not yet been approved in Georgia. Under the European Neighbourhood Policy Action Plan (ENP AP) (as of 14 November 2006) the European Commission jointly with the Georgian government developed National Indicative Programme (NIP). The first NIP covered the period 2007–2010; and the second one — 2011–2013. The latter suggests long-term impact, objectives, expected results, and indicators of achievement in the following areas:

- Democratic development, rule of law, good governance (media freedom, human rights, civil society development, justice sector reform, etc.)
- Trade and investment, regulatory alignment and reform (export and investment promotion, sector-specific regulatory alignment, etc.)
- Regional development, sustainable economic and social development, poverty reduction (social reforms and social protection, regional development and sustainable development, including environmental protection, education, skills development and mobility)
- Peaceful settlement of conflicts.

In Georgia the system of sustainable development measurement has not been yet developed. Among 80 SDIs proposed by TFSD, 46 indicators are currently measured and the data for them are available in the country's statistical system. All the indicators of the groups "Air quality" and "Energy Resources" are measured. Most of the indicators of the groups "Consumption and Income", "Labour", "Institutions", "Land and Ecosystems", "Water", "Climate", "Physical Capital" and "Financial capital" are available. The groups of indicators "Health", "Education", "Physical Safety" and "Non-energy resources" are covered by half or less. The indicators of the groups "Subjective well-being", "Housing", "Leisure", "Trust" and "Knowledge Capital" are not measured.

Kazakhstan

In 2006, the Concept of Transition of Kazakhstan to Sustainable Development for 2007–2024 was approved by the Decree 216 of the President of the Republic of Kazakhstan. The Concept includes three development vectors: economic, social and environmental. The set objective was to achieve the balance between economic, social, environmental, and political aspects of the development of Kazakhstan as a basis for improving the quality of life and competitiveness in the long term.

The sphere of interest of the Concept includes augmenting the quality of life, achieving efficient use of resources, increasing the country's population, improving the quality of human resources, improving environmental situation, and ensuring stability of the country. The Concept defines the priorities, directions, and mechanisms of transition to sustainable development, and establishes quantitative targets to achieve.

In accordance with the Concept 106 indicators of sustainable development were developed. The indicators are divided in the following groups:

1) Composite indicators (16 indicators), e.g., quality of life, life expectancy, human development index, index of poverty, resources use efficiency.

2) Economic growth (18 indicators), e.g., average annual GDP growth in real terms, annual energy consumption, external debt, expenditures on environment protection, number of companies certified for quality standard ISO9001.

3) Energy development (9 indicators), e.g., energy intensity of GDP, coal consumption, share of renewable energy in total energy consumption, share of losses in total electricity consumption.

4) Social development (23 indicators), e.g., employment rate, poverty rate, ratio of minimum and average wages, population growth, mortality, share of population constantly supplied with safe drinking water, health care expenditures, difference between the income of urban and rural population.

5) State of environment (25 indicators), e.g., emissions of pollutants into the atmosphere, emissions of acidifying compounds (SO_2, NOx), polluted wastewater discharge, waste, groundwater quality, area prone to desertification, protected areas.

6) Regional Development (15 indicators), e.g., gross regional product per capita, investment in the fixed capital of manufacturing industry, number of enterprises in the region that have adopted the international standards ISO 14000, ISO 9001, OHSAS 18000, unemployment rate, housing construction, the forest area in the region.

In 2011, by the President's Decree 47 of 13 April 2011 the Decree approving the Concept was repealed. Currently, the Ministry of Environmental Protection is working on a strategy of transition of the Republic of Kazakhstan to the green economy. The strategy would set quantitative indicators for monitoring its implementation.

74 out of 80 SDIs proposed by TFSD are measured in Kazakhstan. The indicators of the groups "Housing", "Air quality", "Education", "Leisure", "Labour", "Physical Safety", "Institutions", "Energy Resources", "Non-energy resources", "Water", "Climate", "Physical Capital", and "Financial capital" are fully covered. "Consumption and Income", "Health", "Trust", "Land and Ecosystems", and "Knowledge Capital" are covered more than by half. The indicator "Life satisfaction" of the only category which is currently not covered ("Subjective well-being") will be measured starting from 2013 within the framework of the research on life quality.

Kyrgyzstan

In November 2012, the National council for sustainable economic development of the Kyrgyz Republic was established. In December 2012, it was acknowledged that the mandate of the Council needs to be extended to cover not only economic aspects, but all the areas essential for the country's development. The Council was, therefore, renamed to the National Council for sustainable development of the Kyrgyz Republic.

The Decree of the President of the Kyrgyz Republic dated 21 January 2013, N 11 approved National Sustainable Development Strategy (NSDS) for the Kyrgyz Republic for the period of 2013–2017 prepared by the National Council for Sustainable Development of the Kyrgyz Republic. The same Decree entrusted the Council with monitoring of the Strategy implementation. NSDS focuses on the analysis of the current economic and social situation in the country, as well as on elaboration of targets and goals for achieving sustainable development for the period 2013–2017.

The Strategy covers the following areas:

- establishing a state governed by the rule of law and ensuring supremacy of law (including combating corruption, development of local self-government, etc.)
- resolving social issues and challenges (based on the reforms of the education and science system, and health care, on increasing effectiveness of social protection and pension coverage)
- assuring environmental protection (including implementing the uniform state policy in environmental security and protection covering all aspects of ecosystem's sustainability and measures aimed at risk reduction and improvement of preparedness for emergencies)
- ensuring sustainable economic development and macroeconomic stability, improving business climate, reducing the scale of informal economy.

In May 2013, National Statistical Committee of the Kyrgyz Republic established the system of indicators to monitor the progress of implementation of NSDS. The indicators are structured thematically in accordance with the targets and goals of NSDS.

According to the reply of Kyrgyzstan to the UNECE questionnaire, 63 out of 80 indicators proposed by TFSD are currently measured and the data for these indicators are available in the statistical system of Kyrgyzstan. The groups of indicators "Consumption and Income", "Housing", "Leisure", "Physical Safety", "Institutions", "Energy Resources", "Water", "Physical Capital", "Knowledge Capital", and "Financial capital" are fully covered. The groups "Health", "Air quality", "Education", "Labour", "Land and Ecosystems", and "Climate" are covered more than by half. Only one indicator of the group "Non-energy resources" — "Generation of waste" — is measured. Groups "Subjective well-being" and "Trust" are not covered.

Republic of Moldova

Implementation of governmental policy in the field of sustainable development is envisaged by the recommendations of the National Report for Rio +20 and included in the draft of the National Strategy for Environmental Protection and the draft of the Law on Environmental Protection. Currently, there is, however, no officially approved national strategy of sustainable development in the country.

In 2002, the Republic of Moldova developed its first Poverty Reduction Strategy Paper which was replaced by the Economic Growth and Poverty Reduction Strategy Paper in 2004. In order to continue reforms, in 2007, the Government of the Republic of Moldova approved the National Development Strategy for the period 2008–2011.

The priorities of the Strategy were set as follows: strengthening democracy; settlement of the Transnistria conflict and reintegration of the country; enhancing the national economic competitiveness; human resource development, enhancing employment, and promoting social inclusion; and regional development. Macroeconomic stability was recognised as a necessary condition to achieve the set targets. In the same time, much less attention was paid to the climate and environmental issues.

The new development strategy — "Moldova 2020 — National Development Strategy: 7 solutions for economic growth and poverty reduction" — was approved on 11 July 2012. The seven priorities established by the Strategy focus on economic and social aspects.

There are over 30 different strategies and plans related to the environment and natural resources. The environmental issues are treated in the draft National Environmental Strategy of the Republic of Moldova for 2012–2022 the work on which started in 2011. The Strategy is being developed by the government of the Republic of Moldova with the participation and support of UNDP.

There are several national programs and strategies on more particular problems, such as the State Forestation Programme for the period 2003–2020 (2003); the National Strategy for Reduction and Elimination of the Persistent Organic Pollutants (2004); National Strategy for Sustainable Development of the Agro-Industrial Sector for 2008–2015 (2008); National Action Plan for implementation in the Republic of Moldova of the Convention on Access to information, public participation in Decision-making and Access to Justice in Environmental Matters (2011-2015); National Programme to establish a national environmental network for 2011–2018 (2011); Programme for the Development of Water and hydroland in the Republic Moldova for 2011–2020 (2011), etc.

All the programs and strategies adopted starting from 2000 are based on and in line with MDGs. To monitor the achievements in the development area the indicators of MDGs are applied in eight different spheres of development, including the environmental protection.

As for the environmental matters, new indicators are being developed within the National Environmental Strategy. The latter has as its main priority introducing green economy principles into public policies and all spheres of economic activities. Part of the indicators such as indicators related to the energy efficiency, renewable energy sources, CO_2 emissions etc. are included into the energy-related plans and strategies.

The statistical system of the Republic of Moldova has data available for 64 out of 80 indicators proposed by TFSD. All indicators of groups "Air quality", "Leisure", "Labour", "Institutions", "Energy Resources", "Water", "Climate", and "Financial capital" are measured or data for them are available. Groups "Consumption and Income", "Health", "Housing", "Education", "Trust", "Non-energy resources", "Land and Ecosystems", and "Physical Capital" are covered by more than 50 per cent. Half or less of indicators of the groups "Physical Safety" and "Knowledge Capital" are measured. The group "Subjective well-being" is not covered.

Russian Federation

Following the principles adopted at the Earth Summit Rio 1992, the President of the Russian Federation approved the Main Provisions of the National Strategy of the Russian Federation for the Protection of the Environment and Sustainable Development (Decree dated February 4, 1994 № 236) and the Concept of the Russian Federation's Transition to Sustainable Development (Decree of April 1, 1996 № 440).

The Concept aims at finding a balanced solution for the problems of social and economic development, as well as preservation of environment and natural resources to ensure the satisfaction of current and future generations' needs. Among the goals set in the Concept were stabilising the environmental situation; improving the environment through the greening of economic activities and diffusion of environmentally oriented management, etc. The project of a national sustainable development strategy elaborated on the basis of the Concept was, however, strongly criticised, in particular due to the fact that it did not take into account the social factor.

The State Duma of the Russian Federation of the third convocation established a Commission for Sustainable Development Issues. The Commission with the participation of different stakeholders, such as academicians, rectors, professors and university students, leading members of the largest research institutions, representatives of businesses operating in the areas of environment and engaged in the production of environment-friendly products, representatives of the Ministry of Economic Development, Russian federal districts, activists of environmental organisations, etc. held several rounds of parliamentary hearings starting from 2000. The Working Group was formed to finalise the draft of the Sustainable Development Strategy. At the hearings in 2001 the Working Group and the Commission were encouraged to continue the work on the Strategy for sustainable development and to publish it.

In 2002 were published "The main provisions of the Sustainable Development Strategy of the Russian Federation". The paper proposed the targets to achieve, the stages to pass in the short and long term, and the working indicators of sustainable development. SDIs include indicators of the pressure, state and management (response). The working indicators are divided into four thematic groups: social, economic, environmental, and institutional indicators. The working indicators are presented in the Table 3.

Table 3
Working indicators of sustainable development

Chapters of Agenda 21	*Pressure indicators*	*State indicators*	*Response indicators*
Social indicators			
Chapter 3: Combating poverty	Unemployment rate	Poverty index: share of the population living below the poverty line Index of poverty level/degree Index of the extreme poverty Index of income distribution inequality (Gini index, Lorenz curve) Ratio of the average salary of men and women	

Chapters of Agenda 21	*Pressure indicators*	*State indicators*	*Response indicators*
Chapter 5: Demographic dynamics and sustainability	Coefficient of the population increase Coefficient of net migration Total fertility rate	Population density	
Chapter 6: Protection and promotion of health		Basic sanitation: percentage of population with access to technical facilities removing municipal waste water Access to potable water meeting sanitary standards Average life expectancy at birth Children with adequate birth weight The infant mortality rate The maternal mortality rate Children nutrition conditions	Percentage of vaccination against children's infectious diseases Prevalence of contraception Percentage of potentially hazardous chemical compounds registered in foodstuff The share of expenditure on national health care, allocated to the local primary health care Percentage of the total expenditures on national health care in the GNP
Chapter 7: Support of sustainable development of settlements	Urban population growth rate Consumption of fossil fuel by motor transport per capita The human and economic losses due to natural disasters	Urban population percentage Area and population of formal and informal urban development Dimensions of the total living space per person The ratio of housing prices to income level	Expenditures on infrastructure development per capita
Economic indicators			
Chapter 2: International cooperation aiming at speeding up sustainable development in developing countries and related internal policies	GDP per capita The share of net investment in GDP Percentage of the sum of exports and imports in GDP	Net domestic product adjusted for environmental costs The share of industrial goods in total exports of goods	
Chapter 4: Changing consumption patterns	Annual energy consumption per capita The share of industries characterized by intensive exploitation of natural resources in the production of value-added	Explored Mineral Reserve Explored fossil fuel energy reserves The period of development of explored energy reserves Intensity of primary goods consumption The share of value-added produced by the processing industry, in GDP The share of renewable energy resources	

Chapters of Agenda 21	*Pressure indicators*	*State indicators*	*Response indicators*
Chapter 33. Financial resources and mechanisms	Net cash inflow to GNP Share of the total official development assistance provided or received in the GNP	Exterior debt to GNP Exterior debt service to export	Share of expenditures on environment in GDP Amount of new or additional funding for sustainable development
Chapter 34: Transfer of environmentally friendly technologies, cooperation and economic capacity-building	Import of capital goods Foreign direct investment	The share of imports of environmentally friendly capital goods	Donations of technology within the framework of technical cooperation
Environmental indicators			
Chapter 18: Protection of the quality of fresh water and provision of fresh water	Annual intake of ground and surface water Household water consumption per capita	Reserves of groundwater The concentration of E. coli in fresh water Biochemical oxygen demand in water bodies	Wastewater treatment Density of hydrological networks
Chapter 17: Protection of the oceans, all kinds of seas and coastal zones	Population growth in coastal areas Discharge of oil into coastal waters Nitrogen and phosphorus discharges into coastal waters	Maximum catchable stock for fishing Coefficient of algae mass	
Chapter 10: An integrated approach to planning and management of land resources	Changes in land use	Change in land condition	Local governance of natural resources
Chapter 12: Managing fragile ecosystems: combating desertification and drought	Population living below the poverty line in dryland areas	National monthly rainfall index The index of phytomass based on satellite data Areas affected by desertification	
Chapter 13: Managing fragile ecosystems: sustainable development of mountain areas	Population change in mountain areas	Sustainable use of natural resources in mountain areas Well-being of mountain areas population	
Chapter 14: Promoting sustainable development of agriculture and rural areas	Use of agricultural pesticides Use of fertilizers The percentage of irrigated land in arable land Energy use in agriculture	The area of arable land per capita The area of saline and waterlogged soils	Agricultural education
Chapter 11: Combating deforestation	The intensity of deforestation	Change in forest area The structure of the forest area	The share of forest area covered by forest management The percentage of the area of protected forests in the total forest area
Chapter 15: Biodiversity protection		The percentage of endangered species in the total amount of local species	Protected areas as a per cent of total area

Chapters of Agenda 21	*Pressure indicators*	*State indicators*	*Response indicators*
Chapter 16: Environmentally sound management of biotechnologies			Expenditures on research and development of biotechnologies Availability of standards or guidelines on safety of biotechnologies
Chapter 9: Protection of the atmosphere	Emissions of greenhouse gases Emissions of sulphur oxides Emissions of nitrogen oxides Consumption of ozone-depleting substances	Concentration of pollutants in atmosphere of cities	Expenditures on air pollution control
Chapter 21: Environmentally sound management of solid wastes and problems similar to the problems of wastewater disposal	Industrial and municipal solid waste generation Amount of disposed household waste per capita		Expenditures on waste management Waste recycling and reuse Urban waste disposal
Chapter 19: Environmentally safe use of toxic chemicals	Acute poisoning caused by chemical compounds		The number of chemical compounds, use of which is prohibited or severely restricted
Chapter 20: Environmentally safe use of hazardous waste	Hazardous waste generation Import and export of hazardous waste	Land contaminated by hazardous waste	Expenditures on hazardous waste treatment
Chapter 22: Safe and environmentally safe use of radioactive waste	Radioactive waste generation		
Institutional indicators			
Chapter 8: Comprehensive consideration of environment and development issues in decision-making			Sustainable development strategies The program of integrated environmental and economic reporting Mandatory environmental assessment The role of national councils for sustainable development
Chapter 35: Contribution of science to sustainable development		Scientific and engineering potential per million population	Scientists, engineers and technicians involved in research on the theoretical and applied development issues, per million population The percentage of expenditures on research in theoretical and applied

Chapters of Agenda 21	*Pressure indicators*	*State indicators*	*Response indicators*
			development issues in the gross domestic product
Chapter 37: The role of national mechanisms and international cooperation in capacity building in developing countries			
Chapter 38: International institutional agreements			
Chapter 39: International legal instruments and mechanisms			Ratification of global agreements Implementation of ratified global agreements
Chapter 40: Information support for decision-making		Main telephone lines per 100 inhabitants Access to information	Programmes for national environmental statistics
Chapter 23–32: Strengthening the role of major social groups			Representation of the major social groups in national councils for sustainable development Representation of ethnic minorities and indigenous population in national councils for sustainable development The contribution of NGOs to sustainable development

Source: State Duma Commission on Sustainable Development, the Federal Assembly of the Russian Federation (2002). Main provisions of the sustainable development strategy of the Russian Federation. Eds. Shelekhov A.M., Moscow. Available from: http://www-sbras.nsc.ru/win/sbras/bef/strat.html (in Russian)

The Commission was transformed into a Sub-Committee of the Committee for Science and High Technology of the State Duma of the fifth convocation. Currently, the Strategy is still not officially approved. Therefore, the working indicators cannot be considered as official SDIs.

Out of 80 indicators suggested by TFSD 62 are measured in the Russian Federation's statistical system. Groups of indicators "Housing", "Air quality", "Physical Safety", "Institutions", "Water", "Climate", and "Physical Capital" are fully covered. "Consumption and Income", "Health", "Labour", "Energy Resources", "Non-energy resources", "Land and Ecosystems", and "Financial capital" are mostly covered. Fifty per cent or less of the indicators of the groups "Education", "Knowledge Capital" are measured. The indicators of the groups "Subjective well-being" and "Trust" are not measured. The data for the indicator "Leisure time" of the category "Leisure" will be obtained after the research implementation planned for 2014. The indicator "Healthy life expectancy at birth" (group "Health") is planned to be measured starting from 2013. The indicator "Lifelong learning" (group "Education") will be measured starting from 2014.

Tajikistan

The Concept of Transition of the Republic of Tajikistan to sustainable development was developed on the basis of the Agenda 21 principles, MDGs, and the Johannesburg Declaration on Sustainable Development. The Concept was approved by the Government Decree N 500 as of 1 September 2007. According to the Concept, its main objective is "…*to ensure a stable socio-economic development, while maintaining a favourable environment and the rational use of natural resources to meet the needs of present and future generations of the country*".

The Concept aims at achieving sustainable economic growth, reduction and elimination of poverty, ensuring social, food and energy security and proper management of natural resources. The transition will be implemented in three stages.

The first stage (2007–2009) focuses on the poverty reduction, but also takes into account the environmental and social aspects of development. This stage is supposed to ensure sustainable growth of living standards, raise awareness among the population about the environmental problems, create green spaces, and fulfil the obligations under the signed global environmental conventions.

Within the second stage (2010–2015) a more sustainable development is to be achieved, as well as poverty elimination, and further living standards improvement; furthermore measures related to adapting to climate change, land degradation and air pollution, as well as market-based mechanisms to prevent the import to Tajikistan of the technologies and consumer goods dangerous for the environment will be developed and applied.

The third stage (2015–2030) represents the transition to sustainable development. It includes establishment of the environmentally oriented economic system and integration of sustainability principles into all the aspects of the country's development.

The country has elaborated a system of sustainable development measurement. Coordination of sustainable development measurement matters is entrusted to the Ministry of Economic Development and Trade. Most of the ministries have a working group for coordination and implementation of the sustainable development strategy.

The Concept also established the main quantitative target indicators of sustainable development (Table 4). The indicators could be divided into three thematic groups, that is, indicators related to economic, social, and environmental spheres.

Table 4

Main target indicators of sustainable development of Tajikistan

Indicators	*Unit of measurement*	*2007*	*2009*	*2015*	*2020*	*2025*	*2030*
Population (end of year)	Thousands	7,215.7	7,529.6	8,662.0	9,298.0	10,093.6	10,889.2
Real GDP in the prices of the previous year	Million somoni	10,046.3	18,419.2	16,220.0	20,275.0	25,344.0	31,680.0
GDP per capita	Somoni	1,793.4	2,768.3	3,274.8	4,279.6	5,391.4	6,503.1
	USD	520.9	668.1	806.2	1,007.6	1,242.1	1,476.5
Average annual real GDP growth in a five-year period	%	107.8	103.9	107.0	105.0	105.0	105.0
Average inflation in a five-year period	%	7.0	6.0	4.0	0.2	–3.1	–6.4
Domestic fixed investment to GDP	%	10.0	8.4	11.0	13.0	14.2	15.4
	Million somoni	900.0	1,733.3	3,066.0	4,243.1	5,467.5	6,691.8
Share of gross domestic savings in GDP	%	32.1	26.5	12.2	14.9	17.6	20.3

Indicators	*Unit of measurement*	*2007*	*2009*	*2015*	*2020*	*2025*	*2030*
Ratio budget revenues to GDP	%	19.2	20.3	21.5	23.3	25.0	26.7
	Million somoni	2,457.4	4,187.5	5,992.0	8,067.0	10,413.0	12,759.0
Production of electricity	Bn kWh	17.5	16.1	30.1	37.9	44.1	53.5
Electricity generation per capita	kWh per person	2,463.9	2,120.7	0.61	0.93	1.12	1.28
Industrial output	Million somoni	5,570.8	6,500.9	14,990.0	19,765.0	24,942.5	29,300.7
Use of production facilities in industrial production	%	50	60	80	90	100	100
Electric intensity of a GDP unit	GDP/1USD	7.34	6.16	5.05	3.95	3.04	2.15
Poverty reduction	By households' expenditures, %	53.5	46.7	38	23	10	Not more than 1–2
Extreme poverty reduction	By households' expenditures, %	17.1	13.8	1-2	0	0	0
Quality of life		1.38	1.52	1.87	2.18	2.51	2.91
The literacy rate of the population aged 15–24	%	88.4 (2004)	99.7 (2010)	99.1	99.6	99.9	99.9
Ratio of literate women to men aged 15 to 24	%	98/100	99/100	99/100	100/100	100/100	100/100
Child mortality	Per 1000 live births	79 (2005)	50 (2010)	29.6	28	26	26
Maternal mortality	Per 10,000	43.4 (2006)	36.3	30	27	26	25
Access of the urban population to safe water	%	93 (2004)	95	97	98	99	100
Access of rural population to safe water	%	47 (2004)	63	74	80	86	90
The land covered by forest	%	100 (2005)	105	110	115	118	120
Lands allocated for biodiversity preservation goals	%	100 (2005)	103	106	110	113	116
Degraded land and pastures	%	100 (2005)	95	92	90	85	80
Discharge of waste water into surface and underground waters	%	100 (2005)	93/91	90/88	86/82	80/79	75/75
Emissions to atmosphere from stationary and mobile sources of pollution	%	100 (2005)	96	91	86	80	76

Source: Concept of Transition to Sustainable Development of the Republic of Tajikistan (2007). Dushanbe. Available from: http://www.rrcap.ait.asia/nsds/uploadedfiles/file/ca/tj/reference/NSDS-TJ-Concept%20of%20Transition%20to%20SD.pdf

Recently, the work has begun on defining SDIs for the period 2013–2015. On the basis of the Rio + 20 outcome paper "The future we want" the preparatory work to identify key indicators of sustainable development for the next 15 years has also started.

According to the UNECE questionnaire results, 45 out of 80 indicators proposed by TFSD are measured and the data for these indicators are available in the country's statistical system. The groups of indicators "Subjective well-being", "Housing", "Labour", and "Water" are fully covered. Covered for more than 50 per cent are groups of indicators "Consumption and Income", "Energy Resources", "Land and Ecosystems", and "Financial capital". Data for a half or less of indicators of the groups "Health", "Air quality", "Education", "Institutions", "Non-energy resources", "Climate", "Physical Capital", and "Knowledge Capital" are available in the statistical system of Tajikistan. There are no data to form indicators of the groups "Leisure", "Physical Safety" and "Trust".

Turkmenistan

Currently, there is no officially approved sustainable development strategy in Turkmenistan. The implementation of the sustainable development principles is considered, nevertheless, a political priority in the country.

The legal framework related to the environmental issues was developed in the country. It includes laws, plans and strategies such as "On nature protection" (1991); "On state environmental expertise" (1995); "On air protection" (1996); the State Standard of Turkmenistan TDS-579-2001 "Environmental impact assessment of planned economic and other activities in Turkmenistan" (2001); "On protection of ozone layer" (2009); Forest code of Turkmenistan (1993, 2011); "On specially protected natural territories" (1992, 2012); Strategy and Action plan on preserving biodiversity in Turkmenistan (2000); and National Environment Action Plan (2002)[7].

Two latter documents were developed by working groups of the State Commission on Ensuring Fulfilment of Obligations of Turkmenistan resulting from the United Nations Environmental Conventions and Programs established in 1999. The Commission is also entrusted with the function of monitoring implementation of the National Strategy on Climate Change (NSCC) approved in 2012. The major goal of the Strategy is "…*to ensure sustainable development of Turkmenistan that would mitigate the effects of climate change and contribute to the country's economic and social growth, as well as prepare the economy for the possible effects of climate change increasing, economic, food, water and environmental safety*". The Strategy implies transition to new environmentally safe technologies and creation of the conditions for green economy.

Until now, a system of indicators for measuring sustainable development has not been developed in Turkmenistan. In the country's statistical system 34 out of 80 indicators suggested by TFSD are measured and the data for them are available. The indicators are fully available for the groups "Housing" and "Water". More than a half of indicators of the groups "Labour", "Institutions", and "Physical Capital" are measured. Covered by 50 per cent or less are the groups "Consumption and Income", "Health", "Air quality", "Education", "Energy Resources", "Non-energy resources", "Land and Ecosystems", "Climate", and "Knowledge Capital". The indicators of the groups "Subjective well-being", "Leisure", "Physical Safety", "Trust", and "Financial capital" are not covered.

[7] The National Environment Action Plan aims at improving environmental situation, preventing its deterioration; reducing negative impact of environmental factors on population health; improving environmental management; involving Turkmenistan into international cooperation in environmental issues.

Ukraine

Sustainable development is considered a priority in terms of public policies in Ukraine. The Concept of transition of Ukraine to sustainable development has been proposed for discussions in May 2012. At the time of writing this report it has not been officially approved yet. The work on the Strategy of sustainable development is also currently in progress.

The Concept sets the major goals to achieve:

- Stopping environmental degradation and ensuring transition to balanced management of environment
- Creating a new economic model based on sustainable management of environment aiming at environment restoration
- Improving quality of life of the population
- Forming public awareness and consciousness about the sustainable development principles
- Establishing legal and institutional frameworks for sustainable development matters
- Preserving national values and traditions of environmental management
- Protecting national interests of Ukraine in the process of globalisation
- Involving all stakeholders in establishment and implementation of sustainable development policies
- Forming and introducing regional sustainable development policy.

There are four stages to perform transition to sustainable development specified in the Concept:

1) The first stage implies creating basics for transition to sustainable development, that is, stopping degradation processes in environment and society; creating the proper conditions for the environment restoration; defining sustainable development as the only alternative of the country's development.

2) The second stage implies transition from the "economy of growth" to the development economy; environment restoration; introduction of new policies in the area of education, science and technologies in accordance with the sustainable development principles.

3) The third stage requires ecologisation and informatisation of economic activities; technology renewal; overcoming poverty; improving quality of life; bringing the resource consumption per unit of output to the level of the developed European countries.

4) Within the fourth stage a complete transition to sustainable development principles will be implemented.

The targets defined by the Concept overlap in the environment-related matters with those set by the Law "On the basic principles (strategy) of the state environmental policy until 2020" (as of 21 December 2010, № 2818-VI), such as: increased public environmental awareness; improvement of environmental situation and safety (air; protection of water resources, land and soil, and forests; waste and hazardous chemicals; biosafety); making environment safe for human health; integrating environmental policy and improving the system of integrated environmental management; stopping the losses of biological and landscape diversity and creating the ecological union; ensuring

environmentally sustainable natural resources management; improving regional environmental policies, etc.

The work is being implemented on development of the "National Concept for Development of Environmentally Clean Production and Technologies until 2020".

At the moment, the system of indicators for sustainable development measurement has not been developed yet. Certain SDIs are, nevertheless, calculated. There are various suggestions for a possible SDI system. In one of them the following groups are proposed:

- Environmental indicators (114 indicators), e.g., quality and stock of fresh water (17 indicators); forests protection (13 indicators); biodiversity preservation (3 indicators); atmosphere protection (21 indicators), etc.
- Social indicators (43 indicators): demographic dynamics and human development (10 indicators); protection of public health (9 indicators); education (4 indicators); maintaining ecological state of human settlements (20 indicators)
- Economic indicators (42 indicators): national policies and international cooperation (13 indicators); change in consumption patterns (23 indicators); financial resources and mechanisms (6 indicators).

Each group is divided into the subgroups: indicators of state, pressure, and response.

56 out of 80 indicators proposed by TFSD are measured in the Ukraine's statistical system. All the indicators of the groups "Labour", "Energy Resources", "Water", "Climate", and "Physical Capital" are available. Most of the indicators are measured within the groups "Consumption and Income", "Health", "Housing", "Air quality", "Institutions", and "Financial capital". Covered by half or less are the groups "Education", "Physical Safety", "Non-energy resources", "Land and Ecosystems", and "Knowledge Capital". Indicators of the groups "Subjective well-being", "Leisure", and "Trust" are not measured.

Uzbekistan

National Sustainable Development Strategy (NSDS) of Uzbekistan was adopted in 1997. At the same time the National Committee for sustainable development under the Ministry of Economy was created with the mandate to monitor and coordinate the implementation of NSDS. In 2005, implementation of NSDS was delegated to the Information and Analytical Department on Agriculture, Water Management and Processing of Agricultural Production and Goods within the Cabinet of Ministers of the Republic of Uzbekistan. The Strategy aims at stable socio-economic growth, market-based economy, integration into the world market, overcoming the consequences of the Aral Sea ecological crisis, the rational use of natural resources and environmental stability.

The Strategy is a fundamental document that determines the public policies in all the sectors, i.e., no program or strategy can be approved if they are not in line with NSDS. The latter, however, has not been revised since 1997. Currently, it is planned to elaborate a long-term strategy and program of sustainable development on the basis of NSDS. The further integration of the environmental issues in the economic development is intended, including the further development of the renewable energy production.

Since 2001, a number of strategies and program documents related to NSDS have been adopted, in particular, Concept of Integrated Sustainable Water Supply, Electric Power Generation Program, Program on Energy Efficiency, Environment Protection Action Program, State Program for Provision of Rural Population with Drinking Water and Natural Gas, Strategy of Irrigation and Drainage Systems Improvement, Welfare Improvement Strategy, National Strategy and Action plan for Biodiversity Conservation, etc.

In 2004, within the framework of the Environment Protection Action Program the project "Environmental indicators for monitoring the state of environment in Uzbekistan" by the Uzbekistan's Government (State Committee for Nature Protection of the Republic of Uzbekistan) supported by UNDP was launched. As a result of the project, following the criteria set by UNECE and the European Environment Agency for the EECCA countries, 91 indicators were selected. Sixty-eight of them are the indicators of the EECCA core set, and 23 reflect Uzbekistan's priorities.

The number of the indicators following the recommendations of UNECE was reduced to 52: 1) Air pollution and ozone layer depletion (3 indicators), e.g., emission of pollutants in atmosphere, consumption of ozone depletion substances; 2) Water resources (13 indicators), e.g., river flow deficit index, fresh water resources, irreversible water losses in agriculture; 3) Land resources (12 indicators), e.g., total agricultural land, pesticides used for pest management, quality of irrigated arable land; 4) Biodiversity (4 indicators), e.g., total forestry fund area, protected lands; 5) Waste (6 indicators), e.g., waste generation intensity, waste recycling output capacity; 6) Energy (4 indicators), e.g., total energy consumption by types of fuel, renewable energy consumption; 7) Aral sea (2 indicators): water level and afforested dried seabed area; 8) Climate change (3 indicators), e.g., greenhouse gases emissions, temperature deviation from climate baseline norm; 9) Public health (5 indicators), e.g., population morbidity, infant mortality.

Another important outcome of the Project is creation of the Environmental Indicators database serving for collection, storing, analysis, and communication of the data on the state of environment and the use of natural resources. The data for the Database are provided by different Ministries and agencies including the Ministry of Health, the Ministry of Agriculture and Water Resources, the State Committee for Nature Protection, the State Committee on Statistics, etc.

As for SDIs, they are divided into thematic groups, e.g., GDP-related data, data on demographic processes, health, labour, education, leisure, culture, living conditions, environment, transport, industries, construction, trade, science, etc. The Statistics Committee receives the data for SDIs from different ministries, agencies, and businesses and processes them.

Among 80 indicators suggested by TFSD 57 are measured and the data for them are available in the statistical system of Uzbekistan. The groups “Housing”, “Leisure”, “Energy Resources”, and “Water” are fully covered. More than 50 per cent of indicators of the groups “Consumption and Income”, “Air quality”, “Education”, “Labour”, “Institutions”, “Non-energy resources”, “Land and Ecosystems”, “Climate”, “Knowledge Capital”, and “Financial capital” are measured. By half or less are covered the groups “Health”, “Physical Safety”, and “Physical Capital”. The indicators of two groups “Subjective well-being” and “Trust” are not measured.

IV. Conclusions

All EECCA countries consider sustainable development priority in terms of their public policies. Seven out of twelve countries have an officially approved strategy of sustainable development. There are data for two thirds of indicators proposed as an example by the UNECE questionnaire in the statistical systems of eight of the EECCA countries, while 11 countries have available the data for at least half of the indicators.

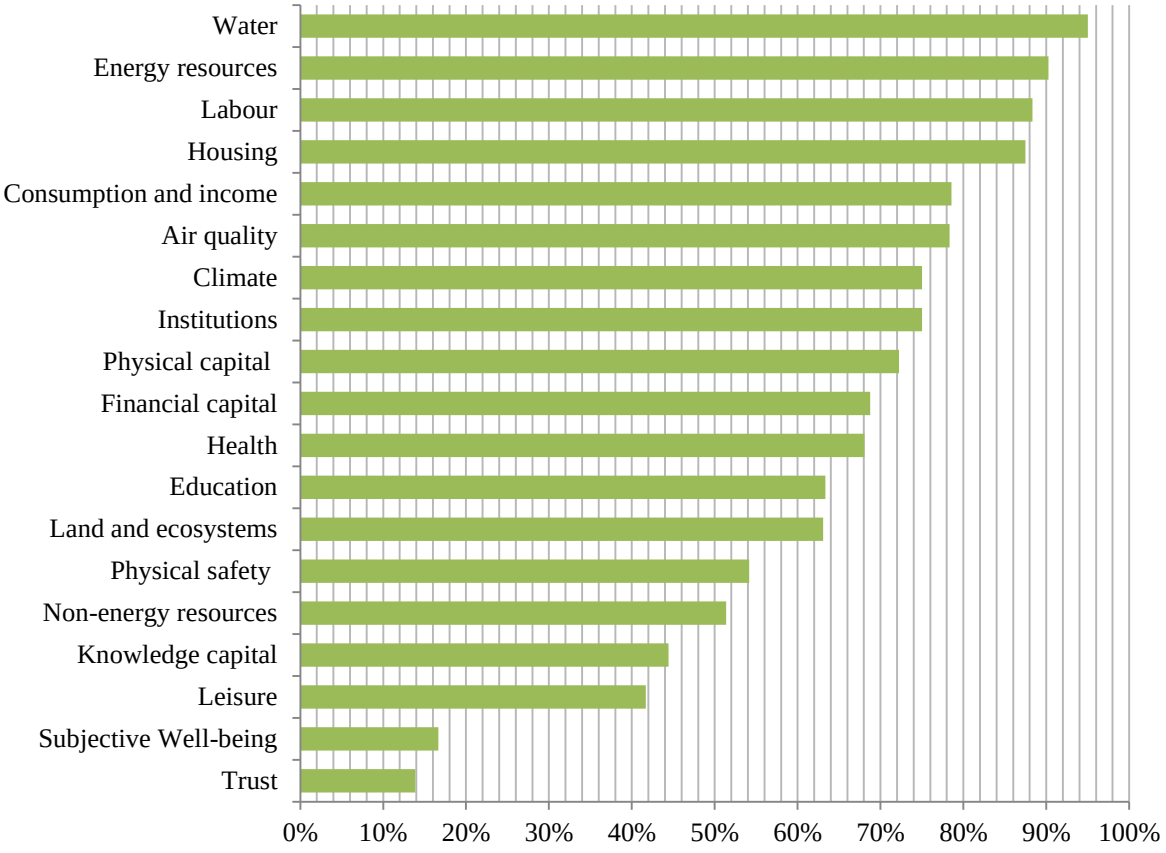
The international comparison in terms of whether the countries are on sustainable path is, however, currently not possible. As it was mentioned before, there is no common approach to defining sustainable development, neither to its measurement: existing SDIs differ in terms of metadata, methods of calculation, frequency of measurement, units, etc. This is also true for the composite SDIs: it is not possible to compare them as their content varies from country to country.

The need for harmonisation is, therefore, obvious. The data availability is a necessary but not sufficient condition for the international comparison and analysis of the "sustainability level". Ideally, the set of SDIs should be developed for each country so that it would reflect the specificities of the countries' situation. Such a set needs to be complemented with a set of indicators for international comparison, which is yet to be developed.

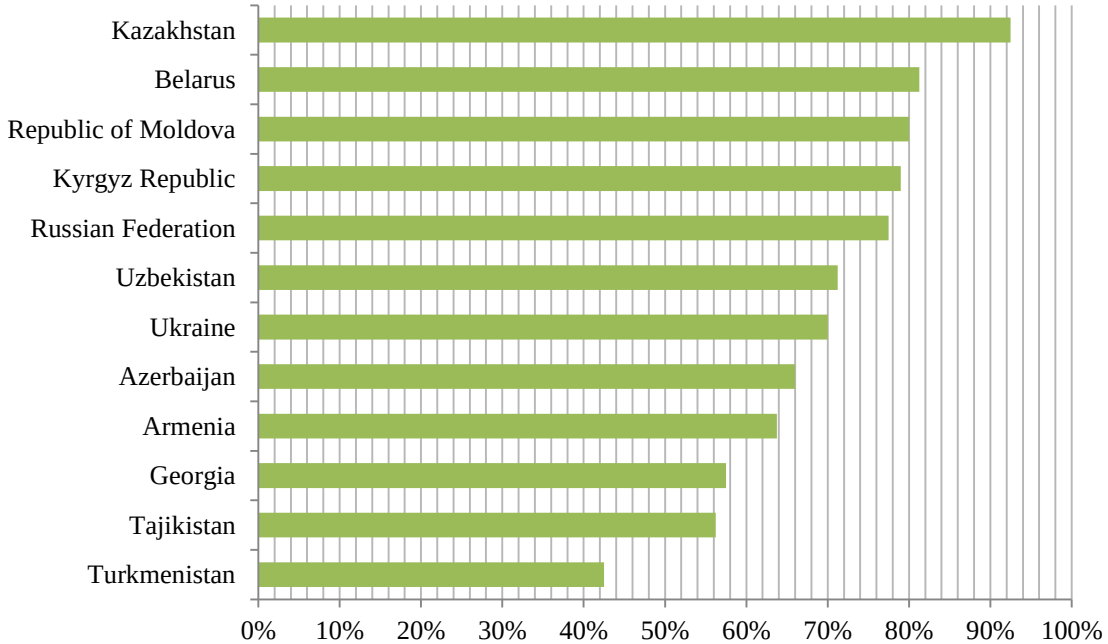
Further technical assistance is needed to help countries to work out and apply the indicators of sustainable development. The joint work is also necessary to develop the core common set of SDIs to assess sustainability at least within the EECCA region.

Annex

Availability of indicators by themes



Availability of indicators by countries



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