

United Nations Division for Sustainable Development
Expert Group Meeting on
Indicators of Sustainable Development
New York, 3-4 October 2006

Revising Indicators of Sustainable Development - Status and Options*

Background paper

* This paper was prepared by the United Nations Division for Sustainable Development.

This paper has been issued without formal editing.

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Abbreviations

BOD	biological oxygen demand
CFC	Chloro-fluoro carbon
CIESIN	Center for International Earth Science Information Network
CSD	Commission on Sustainable Development
CSD-ISD	CSD Indicators of Sustainable Development
DESA	United Nations Department of Economic and Social Affairs
DSD	United Nations DESA - Division for Sustainable Development
EISD	Energy Indicators for Sustainable Development
FAO	Food and Agricultural Organization of the United Nations
FDI	foreign direct investment
GDP	gross domestic product
GNI	gross national income
IAEA	International Atomic Energy Agency
IEA	International Energy Agency
ILO	International Labour Organization
ISD	Indicators of Sustainable Development
ITU	International Telecommunications Union
IUCN	The World Conservation Union
LDCs	least developed countries
MDG	Millennium Development Goals
ODA	Official Development Assistance
ODP	Ozone Depleting Potential
OECD	Organization for Economic Co-operation and Development
PPP	purchasing power parity
R&D	research and development
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNISDR	United Nations International Strategy for Disaster Reduction
UNODC	United Nations Office on Drug and Crime

UNPD	United Nations Population Division
UNSD	United Nations Statistics Division
UNWTO	United Nations World Tourism Organization
WHO	World Health Organization

I. Introduction

The indicators of sustainable development (ISD) prepared for the Commission of Sustainable Development (CSD) are currently under revision. In continuation of an expert group meeting (EGM) hold in December 2005, the United Nations Division for Sustainable Development (DSD) of the United Nations Department of Economic and Social Affairs is organizing a second EGM in October 2006. This meeting is expected to finalize the revised indicator set and to agree on modifications in the thematic framework. This background paper aims at facilitating this process.

Over the last decade, a large number of countries throughout the world have adopted national indicators of sustainable development (ISD). Indicators can support better political decisions and actions by effectively aggregating and simplifying information relevant for sustainable development. They are also important tools to communicate concepts and trends of sustainable development to decision-makers, stakeholders and the public-at-large.

Many countries take the CSD indicators (CSD-ISD) as a starting point for their national indicators. The current CSD-ISD edition was developed between 1994 and 2001 within the CSD Programme of Work on Indicators on Sustainable Development after extensive consultations and national testing programmes.

In 2005, DSD decided that a review of the CSD indicators would be an important part of its mandated support to United Nations member States in their efforts to develop and implement national indicators for sustainable development. The review incorporates the increased knowledge of and experience with indicators of sustainable development gained by countries and organizations since 2001. It also reflects the increasing emphasis on measuring development progress, as exemplified in the Millennium Development Goals and their indicators.

The review began with research and analysis of national global trends in ISD and with a renewal of the dialogue with international experts. The DSD also proceeded to assess the coherence between the ISD and the MDG indicators. This was followed by organization of the expert group meeting in December 2005, in which experts from international organizations as well as experts from a number of member States with experience in developing and using ISD participated.¹ The meeting discussed the role of indicator frameworks and options for a way forward for the CSD-ISD. It agreed on an interim revised list of indicators. The indicators are placed in a modified version of the thematic/sub-thematic framework developed for the CSD-ISD from 2001. The meeting decided to cease categorizing the indicators along the lines of the four “pillars” (social, economic, environmental and institutional) in order to emphasize the multi-dimensional nature of sustainable development. Furthermore, the meeting agreed to distinguish between core and non-core indicators. Indicators for which methodologies are missing will be listed separately.

The remainder of the paper is as follows. The next section briefly summarizes key decisions from last year’s expert group meeting, and introduces the modified thematic framework. Section III presents the revised indicators and outlines outstanding issues such as the modifications to last year’s interim indicator set and the assignment of indicators into themes and categories. Section IV briefly introduces a table that illustrates the inter-thematic nature of the CSD indicators. A brief conclusion is contained in section V. An annex contains a brief summary of all indicators. Updated complete methodology sheets will be issued as a separate background document before the meeting.

II. Framework and structure of the revised CSD indicators

It was agreed during the 2005 meeting to no longer separate indicators into the four “pillars” (social, economic, environmental and institutional), primarily because many indicators relate to more than one pillar. Therefore, the new CSD-ISD may be

¹ The meeting report is available at <http://www.un.org/esa/sustdev/natlinfo/indicators/egmIndicators/egm.htm>.

better designed to highlight the integrated nature of sustainable development. The following table presents a possible list of fourteen themes.

CSD ISD Themes			
Poverty	Health	Atmosphere	Economic development
Governance	Education	Land	Global partnership
Equity	Demographics	Oceans, Seas and Coasts	Consumption and production patterns
		Freshwater	
		Biodiversity	

The expert group meeting in December 2005 agreed to divide indicators into core and non-core. The non-core indicators offer a larger set of sustainable development issues that may be relevant for some but not all countries. They also provide guidance for countries that may wish to delve into more detail in any given issue. The overall balance between core and non-core indicators across themes may also be taken into account when assigning indicators to these two categories. A third category identifies indicators that are important but for which there is as yet no agreed methodology. There are a number of indicators in this category where methodologies are not fully developed, but where basic definitions do exist. In anticipation of the completion of the methodological work, it may be possible to agree on the future assignment of these indicators to the core and non-core categories. Moreover, the upcoming expert group meeting may also decide on the status of indicators for which methodologies in principle exist, but for which methodology sheets have not been prepared for various reasons.

III. Revised CSD indicators on sustainable development

The following subsections present the revised indicators. The tables, organized according to proposed themes, contain the sub-themes, names of the indicator and the proposed category. In total, there are 40 indicators in the core category, 39 in the non-core and 13 to-be-developed. The tables also identify lead agencies and indicate whether the indicator changed compared to the interim list agreed in December 2005. Those

changes are further discussed in more detail, together with other possible modifications to the indicators or their placement in the CSD-ISD.

1. Poverty

<i>Sub-theme</i>	<i>Indicator</i>	<i>Category</i>	<i>Indicator change from 2005</i>	<i>Lead agency</i>
Income poverty	Percent of Population Living Below National Poverty Line	Core	No	World Bank
	Proportion of population below \$1 (1993 PPP) per day	Non-core	No	World Bank
Sanitation	Proportion of population with access to improved sanitation, urban and rural	Core	Yes	WHO
	Waste water treatment by category (primary, secondary, tertiary) in urban areas.	Non-core	No	tbd
Drinking Water	Population with Access to Safe Drinking Water	Core	No	WHO
Access to energy	Share of households without access to electricity or commercial energy	Core	No	tbd
Living Conditions	Proportion of population living in slums	Core	No	UN-HABITAT (tbc)

In the 2001 CSD set, poverty is a sub-theme of the equity theme and includes income (monetary) poverty only. By capturing non-monetary poverty and highlighting the important role of poverty reduction for sustainable development in most developing countries, the creation of a poverty theme increases the policy relevance of the CSD indicator set. It includes indicators on access to basic services (sanitation, drinking water, energy, housing) in addition to income poverty. At the same time, one could use the suggested table on inter-thematic linkages further discussed in section 4 to highlight the relationship of indicators to other themes, such as health.

At the EGM in 2005, it was agreed to include waste water treatment by treatment category (as defined by OECD) as separate non-core sanitation indicator. If the meeting reconfirms this decision, a lead agency has to be identified.

The indicator on the proportion of population living in slums is aligned with the corresponding MDG indicator and can therefore benefit from international efforts to further strengthen monitoring of living conditions of slum dwellers. At the same time, the methodological discussions on this particular MDG indicator are ongoing so that future revisions may be necessary. As the indicator in the current form does not cover the spatial dimensions of slums, it may be appropriate to rename the indicator to “proportion of urban population living in deficient housing conditions”.

2. Governance

<i>Sub-theme</i>	<i>Indicator</i>	<i>Category</i>	<i>Indicator change from 2005</i>	<i>Lead agency</i>
Good governance	Governance indicators	To-be-developed	No	Tbd
	Corruption Indicator	To-be-developed	Yes	UNODC
Information and Communication Technologies	Internet users per 100 population	Core	No	ITU
	Fixed Telephone lines and cellular subscribers per 100 population	Non-core	No	ITU
Crime	Number of recorded serious crimes per 100,000 population	To-be-developed	No	UNODC

Governance would be another new theme for the CSD indicator set, consisting of the new, and still to be developed, good governance indicators, the two information and communication indicators that were previously part of the institutional capacity theme as well as the crime indicator that was previously the only indicator in the security theme.

Despite the widespread acknowledgement of good governance as a central prerequisite for sustainable development, it remains difficult to identify good governance indicators suitable for the CSD set. One reason is the variety of dimensions of governance. For example, the widely discussed governance indicator dataset developed by the World Bank Institute distinguishes six dimensions of governance:

control of corruption; rule of law; voice and accountability; government effectiveness; political stability; quality of regulation.

A second reason is data aggregation. Many governance indicators use a variety of data to create governance indices for various dimensions of governance. The choice of data depends both on varying interpretations of the dimensions and on the availability of data. Index type indicators are generally absent from the CSD set, mainly because it is difficult to find globally acceptable definitions. Moreover, many governance indicators are used for cross-country comparisons, and have considerably less precision in measuring variation in governance over time on a country level.

A third reason for difficulties in identifying governance indicators is the type of data used for calculating them. In many cases, governance indicators are based on perceptions held by the public or more or less clearly defined national or international experts. However, indicators based on perceptions are otherwise not used in the CSD indicator set. It may be noted, though, that some countries do use indicators based on subjective perceptions rather than objective criteria in their national sets.

Indicators of public participation, either general political participation or participation more specific to sustainable development, are used in a number of countries. However, the usefulness of such indicators for all countries often depends on the legal and political framework. For example, voter participation in elections has limited meaning in countries with mandatory voting requirements and a different meaning in direct than in parliamentary democracies.

As a specific corruption indicator, the United Nations Office on Drugs and Crimes (UNODC) proposes estimated prevalence of corruption per 100 population, which is contained in the International Crime Survey by UNODC. It is defined as individuals or households having been asked, or having complied with an expectation, by government officials to pay a bribe for a service.

For the other crime indicator, the remaining issue from last year is the definition of 'serious crime'. UNODC proposes to include one indicator on intentional homicides and one indicator on recorded violent crimes, including assault, rape and robbery. Data availability for the violent crime indicator is limited as several countries do not report on all three categories. An alternative would be to combine homicides and violent crimes to one indicator.

If the meeting agrees on a definition based on these proposals, it remains to be decided whether the crime and corruption indicators should be in the core or in the non-core category.

3. Equity

<i>Sub-theme</i>	<i>Indicator</i>	<i>Category</i>	<i>Indicator change from 2005</i>	<i>Lead agency</i>
Income	Ratio of share in national income of highest to lowest quintile	Non-core	No	World Bank
Gender equality	Ratio of Average Female Wage to Male Wage	Core	No	ILO

The equity theme now has a more narrow focus, as unemployment and monetary poverty have moved to the themes of economic development and poverty, respectively. However, many other indicators, especially in the poverty theme, provide information on equitable access to services. It may be noted that equity is the smallest theme in terms of the number of indicators. Hence, in case a further consolidation of themes is deemed necessary, the indicators in this theme could be placed elsewhere.

4. Health

<i>Sub-theme</i>	<i>Indicator</i>	<i>Category</i>	<i>Indicator change from 2005</i>	<i>Lead agency</i>
Mortality	Mortality Rate Under 5 Year Old	Core	No	UNPD
	Life expectancy at Birth	Core	No	UNPD
	Healthy life years expectancies	Non-core	No	WHO
Health Care Delivery	Percent of Population with Access to Primary Health Care Facilities	Core	No	WHO
	Immunization Against Infectious Childhood Diseases	Core	No	WHO
	Contraceptive Prevalence Rate	Non-core	No	WHO
Nutritional Status	Nutritional Status of Children (Percentage of underweight and obese children)	Core	No	WHO
Health status and risks	Smoking prevalence	Non-core	No	WHO
	Prevalence of mental health problems (Suicide rates as proxy)	Non-core	No	WHO
	Prevalence of major diseases such as HIV/ AIDS, Malaria, Tuberculosis	Non-core	Yes	WHO

The Health theme remains one of the themes with the largest number of indicators, even if the sub-themes on drinking water and sanitation are moved to the poverty theme.

The meeting may wish to confirm whether health life years should be included as a non-core indicator, or be mentioned as an alternative within the life expectancy methodology sheet.

The EGM in December 2005 decided to include indicators on smoking and mental health as non-core indicators. In order to reflect the continuing threats to sustainable development in many countries related to the spread of communicable diseases, it may be worthwhile also to include one indicator on major diseases such as

HIV/AIDS, Malaria and Tuberculosis. Such indicator would also increase coherence with the MDG indicators.

5. Education

<i>Sub-theme</i>	<i>Indicator</i>	<i>Category</i>	<i>Indicator change from 2005</i>	<i>Lead agency</i>
Education level	Gross intake into last year of primary education, by sex	Core	No	UNESCO
	Net enrolment rate in primary education	Non-core	No	UNESCO
	Adult secondary (tertiary) schooling attainment level, by sex	Core	Yes	UNESCO
	Life long learning (Proportion of working age population receiving learning or training)	Non-core	No	Eurostat
Literacy	Adult Literacy Rate, by sex	Core	No	UNESCO

The education theme and its sub-themes remain unchanged compared to the last CSD indicator set. As agreed at the last EGM, existing indicators have been revised and new indicators on education levels have been added so that countries are able to monitor sustainable development in this key area more completely. UNESCO proposes to change the name of the indicator on secondary and/or tertiary education to adult schooling attainment, as non-formal education is not covered by the indicator.

6. Demographics

<i>Sub-theme</i>	<i>Indicator</i>	<i>Category</i>	<i>Indicator change from 2005</i>	<i>Lead agency</i>
Population change	Population Growth Rate, rural and urban	Core	No	UNPD
	Total fertility rate	Non-core	No	WHO
	Dependency Ratio (Young and Old)	Core	No	UNPD
Vulnerability to Natural Hazards	Percentage of population living in disaster prone areas, by type of natural disaster	Core	No	UNISDR

The demographics theme (previously “population theme”) may include a new indicator on vulnerability to natural hazards, since it links demographic development to risks to sustainable development from natural disasters. However, this placement may have to be revised since it separates the indicator on vulnerability to natural hazards from the related one on the impact of natural disasters. The indicator also requires further methodological work to define ‘disaster prone area’ more precisely.

7. Atmosphere

<i>Sub-theme</i>	<i>Indicator</i>	<i>Category</i>	<i>Indicator change from 2005</i>	<i>Lead agency</i>
Climate Change	Emissions of Greenhouse Gases, total and by sector	Core	Yes	UNFCCC
Ozone Layer Depletion	Consumption of Ozone Depleting Substances	Non-core	No	UNEP-Ozone
Air Quality	Ambient Concentration of Air Pollutants in Urban Areas	Core	No	WHO

The atmosphere theme remains basically unchanged from the previous edition, even though indicators have been updated. The last EGM did suggest sectoral breakdown of the first indicator to allow countries to monitor greenhouse gas emissions. In order to ensure consistency between the CSD indicator set and reporting to UNFCCC,

and to avoid duplication of data management efforts, it may be advisable to use the sectoral classification used by UNFCCC² even when they depart from classifications typically used in official statistics.

8. Land

<i>Sub-theme</i>	<i>Indicator</i>	<i>Category</i>	<i>Indicator change from 2005</i>	<i>Lead agency</i>
Land use and status	Land use indicator	To-be-developed	No	FAO (tbc)
	Land degradation	To-be-developed	Yes	FAO
Agriculture	Arable and permanent cropland	Core	No	FAO
	Efficiency of Fertilizer Use	Non-core	Yes	FAO
	Use of Agricultural Pesticides	Non-core	No	FAO
	Organic farming as percentage of total farming	Non-core	No	Eurostat
Forests	Forest Area as a Percent of Land Area, by type of forests	Core	Yes	FAO
	Percent of forests damaged by defoliation	Non-core	No	Eurostat
	Forest governance	To-be-developed	No	FAO (tbc)
Desertification	Land affected by desertification (Land degradation in arid, semi-arid and dry sub-humid areas)	Core	No	FAO, UNDP Dryland (tbc)

The last expert group meeting suggested the introduction of a comprehensive land use indicator that could cover both arable and croplands and forest as well as other

² The sectors are Energy; Industrial processes; solvent and other product use; agriculture; Land use, land use change and forestry (LULUCF); waste, others.

main land use categories. However, the meeting last year also indicated a preference for indicators looking at land use change rather than land use per se. Hence, the upcoming meeting may want to confirm its recommendation on appropriate overarching land indicators. Given the difficult task of developing a feasible methodology for a land degradation indicator, it has to be decided whether the indicator would be better placed in the to-be-developed category.

As FAO proposes to change the definition of the fertilizer indicator to amount of fertilizer used divided by crop yield, it may be advisable to name the indicator efficiency of fertilizer use. The organic farming indicator could in principle also cover organic forestry and aquaculture. However, in this case the placement of the indicator in the agricultural sub-theme may be inappropriate.

The breakdown of the forest area indicator according to forest types, ecosystem or characteristic could be made in accordance with the classification system under development by FAO for the Global Forest Resources Assessment. This indicator would, therefore, be updated after that work is completed. Defoliation is a useful indicator for forest health and vitality, and is mainly caused by national and trans-national air pollution.

Since land use and land degradation affect all types of land, they have been grouped in a separate sub-theme, which might also include the desertification indicator. It should be noted that the methodologies for both land use and land degradation indicator need to be developed, and, for land desertification, updated.

9. Oceans, seas and coasts

<i>Sub-theme</i>	<i>Indicator</i>	<i>Category</i>	<i>Indicator change from 2005</i>	<i>Lead agency</i>
Coastal Zone	Algae Concentration in Coastal Waters	Core	No	UNEP-GPA
	Percentage of total population living in coastal areas	Non-core	No	CIESIN
	Coastal pollution	To-be-developed	No	tbd
Fisheries	Proportion of fish stocks within safe biological limits	Core	Yes	FAO
Marine environment	Coral reefs	To-be-developed	No	UNEP-WCMC
	Marine trophic index	To-be-developed	No	tbc

Among the coastal zone indicators, the last EGM decided to include algae concentration as a core indicator. There are, however, continuing concerns on methodological details of this indicator, and it is rarely used in national and international datasets. It may therefore be better to move it to the list of indicators “to be developed.” In addition, future development of a coastal pollution indicator would benefit from further guidance on what type of pollution should be covered by this indicator.

The proposed indicator on fisheries differs from the indicator discussed at the last EGM insofar as it counts fish stocks rather than catches. It has, however, been used by FAO for its annual reporting, and it may be added to the MDG indicators.

Further work is needed for developing the two new proposed indicators on the marine environment for use at the national level. In anticipation of progress by the 2010 Biodiversity Indicators Partnership Initiative in the near future, the EGM may also make recommendations on whether these indicators should be in the core group or included in the list of indicators “to be developed.”

10. Freshwater

<i>Sub-theme</i>	<i>Indicator</i>	<i>Category</i>	<i>Indicator change from 2005</i>	<i>Lead agency</i>
Water Quantity	Annual Withdrawal of Ground and Surface Water as Percent of Renewable Water	Core	No	FAO
	Water use productivity by economic sector	Non-core	Yes	UNSD (tbc)
Water Quality	BOD in Water Bodies	Non-core	No	UNEP (tbc)
	Concentration of faecal Coliform in Freshwater	Core	No	WHO

The fresh water theme continues to include sub-themes on water quantity and quality. Currently, there is only one indicator on water quantity, which measures water withdrawal (or abstraction) as percentage of renewable water resources. The choice of renewable rather than total available water resources in the denominator is due to difficulties in defining available water resources, which is linked to the exploitability of the resource.

A possible new indicator of water quantity, proposed by the United Nations Statistics Division, could measure water productivity, with a breakdown by sector. It is defined as value added per sector divided by the amount of water used by the sector, and would complement the current water quantity indicator. While the water withdrawal indicator measures pressure on the water resources, the water productivity indicator measures the contribution of water to the economy. If monitored over time, the indicator of water productivity shows whether the country manages to improve economic performance while simultaneously reducing the impact on the environment, that is, to decouple pattern of water use from economic growth. This indicator is defined in a similar way as the indicators on material and energy intensity. It could also be expressed as 'water use intensity' (the inverse of water productivity).

Currently, national and international efforts on developing water quality indicators are ongoing. It may be appropriate to maintain the current two indicators on

BOD and faecal coliform in the CSD set and to plan a revision, including the incorporation of other pollutants, for a later stage. It may be worthwhile, though, to discuss whether emission of pollutants to water or a pollution intensity indicator (calculated as the ratio of emission over value added), in particular of BOD, should also be covered.

11. Biodiversity

<i>Sub-theme</i>	<i>Indicator</i>	<i>Category</i>	<i>Indicator change from 2005</i>	<i>Lead agency</i>
Ecosystem	Coverage of protected areas by biome and habitat	Core	No	UNEP-WCMC
	Management effectiveness of protected areas	To-be-developed	No	IUCN, UNEP-WCMC
	Area of Selected Key Ecosystems	Non-core	No	UNEP-WCMC (tbc)
	Fragmentation of habitat	To-be-developed	No	tbd
Species	Trends in the Abundance of Selected Key Species	Core	Yes	UNEP-WCMC (tbc)
	Assessment of threatened species	Non-core	No	IUCN

The biodiversity theme and sub-themes have not been changed from the last CSD-SD. Both management effectiveness of protected areas and, especially, fragmentation of habitat are indicators that still need a substantial amount of work. Nevertheless, the meeting may agree already on the future placement of these indicators, either in the core or, perhaps more likely, non-core category. Whereas the revised and expanded protected area indicator is readily applicable, the improved methodology sheet on the indicator on key selected ecosystems identifies a number of concepts on which exact and consistent definitions still have to be found.

The last EGM suggested indicators on farmland birds, woodland birds and butterflies as non-core indicators. However, it may be more appropriate to subsume

these under the trends in the abundance of selected key species indicator. Explicit reference to these three species groups are made in the methodological sheet prepared by the lead agency UNEP-WCMC. The new indicator on threatened species includes a detailed methodology based on the red list index developed by IUCN.

All indicators in this theme benefit from ongoing methodological work in relation to the biodiversity indicators developed to monitor the internationally agreed target of substantially reversing the loss of biodiversity by 2010. After completion of that work, the biodiversity indicators in the CSD-SDG may benefit from a fresh review.

12. Economic development

<i>Sub-theme</i>	<i>Indicator</i>	<i>Category</i>	<i>Indicator change from 2005</i>	<i>Lead agency</i>
Macroeconomic Performance	GDP per Capita	Core	No	UNSD
	Investment Share in GDP	Non-core	No	UNSD
	Net Savings Rate	Non-core	Yes	UNSD (tbc)
	Inflation	Non-core	No	tbd
Sustainable Public Finance	Debt to GNI ratio	Core	No	World Bank
Employment	Labor productivity	Core	No	ILO
	Employment rate, disaggregated by sex	Core	No	ILO
	Employment Status, by sex	Non-core	Yes	ILO
	Unit labor costs	Non-core	No	ILO
Research and Development	R&D Expenditure as percentage of GDP	Non-core	No	UNESCO
Tourism	Tourism indicators	To-be-developed	Yes	UNWTO
Disaster Preparedness and Response	Economic and Human Loss Due to Natural Disasters, as percentage of population and of GDP	Non-core	No	UNISDR

This new theme contains a variety of sub-themes of predominantly economic nature. The last EGM suggested that genuine savings, developed by the World Bank, could be considered as an alternative to the more standard net savings rate. Given that

experiences with the genuine savings from a national perspective are very limited, it may be appropriate to include net savings rate as defined in the standard system of national accounts in the CSD indicator list, but to include the reference to the genuine savings indicator in the methodology sheet.

The last EGM decided to use total debt to GNI as an indicator on sustainable public finance, rather than external debt only as in the previous set. In line with standard practice, it may be advisable to use GDP rather than GNI as denominator of this indicator.

Employment is a new theme, replacing unemployment rate with employment rate and adding three new indicators. Employment status not only considers the share of unpaid family workers in total employment as discussed at the EGM 2005, but also the shares of salaried workers and self-employed in order to provide a more complete picture of the employment structure.

In the new tourism sub-theme, UNWTO is preparing concrete suggestions for one or two tourism indicators. Depending on the outcome of the discussions, the meeting may decide on these proposals and whether they are core or non-core indicators.

The meeting may wish to discuss the placement of the research and development sub-theme. The economic theme may be appropriate, as a large part of R&D leads to the creation of physical as well as intangible capital.

The disaster response indicator is placed in the economic theme as economic loss is one part of the indicator. However, loss of human lives is certainly not only an economic issue, so the placement of this indicator might be reconsidered.

13. Global partnership

<i>Sub-theme</i>	<i>Indicator</i>	<i>Category</i>	<i>Indicator change from 2005</i>	<i>Lead agency</i>
Trade	Current account deficit as percentage of GDP	Non-core	No	UNSD
	Share of imports from developing countries and from LDCs	Core	No	UNSD (tbc)
External financing	Total Official Development Assistance (ODA) given or received as a percentage of GNI	Core	No	World Bank
	Net FDI inflows and outflows as percentage of GNI	Non-core	No	UNSD (tbc)
	Remittances as percentage of GNI	Non-core	No	UNSD (tbc)

Global partnership contains indicators related to international financial flows. A current account deficit indicator may be placed in the trade sub-theme because the trade balance is a major component of the current account. However, as the current account also contains parts of ODA and remittances, an alternative classification could be considered.

Both FDI and remittances indicators use GNI as denominator., thereby increasing the coherence with the ODA indicator which is also one of the MDG indicators. However, especially in case of the FDI indicator, alternative denominators such as GDP or capital formation are more often used in practice. The meeting may therefore decide which denominator to use.

14. Consumption and production patterns

<i>Sub-theme</i>	<i>Indicator</i>	<i>Category</i>	<i>Indicator change from 2005</i>	<i>Lead agency</i>
Material Consumption	Intensity of Material Use, total and by sector	Core	No	Eurostat
	Annual Material Use per Capita, total and by sector	Non-core	No	Eurostat
Energy Use	Annual Energy Consumption per Capita, total and by sector	Core	Yes	Tbd
	Share of renewable and non-renewable sources in total energy supply	Non-core	Yes	tbd
	Intensity of Energy Use	Core	No	tbd
Waste Generation and Management	Generation of Waste by industry/sector	Non-core	No	UNSD
	Generation of Hazardous Waste	Core	No	UNEP-SBC
	Management of Hazardous Waste	To-be-developed	No	tbd
	Management of Radioactive Waste	Non-core	No	IAEA
	Waste Treatment and Disposal by method of treatment (recycled, incinerated, landfilled)	Core	No	UNSD
Transportation	Share of cars in passenger transportation	Non-core	No	Eurostat
	Road share of freight transport	Non-core	No	Eurostat
	Fuel use by distance of passenger transportation (Energy intensity of transport)	Core	Yes	tbd

The consumption and production pattern theme continues to be the theme with the largest number of indicators. Given the cross-cutting nature of this theme, however, a further split is not warranted.

Eurostat has proposed to change the material intensity indicator to its inverse, to be called material productivity indicator. The indicator would be better aligned with the political goal to increase material productivity, or to decouple economic growth from material consumption. However, the similarity with the indicator of energy intensity would be diminished.

The last meeting agreed to include breakdowns by sector and by source in the indicator on energy consumption. However, as indicators with multiple breakdowns may be difficult to apply and visualize, it may be appropriate to split the indicator. One indicator could be on energy consumption, per capita and by sector. A second indicator could address the issue of the energy-mix, in line with the international commitment to increase the share of renewables in energy use and supply. The current CSD indicator set includes not only energy intensity for the overall economy, but also energy intensities for the service, manufacturing, residential and transportation sector. A sectoral breakdown can easily be incorporated in the overall energy intensity indicators as long as the sector is measured by its value added, as is normally the case of services and manufacturing. Energy intensities of the household sector could be measured by number of persons, number of households or floor area. In order to keep the size of the CSD set manageable, it may be preferable to refer to the more comprehensive set of Energy Indicators for Sustainable Development (EISD) rather than include a specific indicator on energy intensity by the household sector. In this regard, it may be noted that energy consumption by household sector also provides important information on changes in energy intensity if population size is relatively stable over time.

The transport energy intensity indicator, as included in the EISD is closely related to the proposed new CSD indicator of fuel use by distance of passenger transportation. Therefore, the meeting may wish to decide whether the transport energy intensity indicator from the EISD should be used for fuel use by distance. It should be taken into account that the EISD indicator proposes that the indicator be computed separately for different modes of transport.

With regard to the waste sub-theme, the Secretariat of the Basel Convention on Hazardous Waste indicated it will not have the resources to develop an indicator on hazardous waste management. Therefore, this indicator would probably have to remain in the to-be-developed list.

IV. Multi-thematic nature of CSD indicators

Sustainable development indicators attempt to measure sustainable development in its entirety, taking into account the multi-dimensional nature of sustainable development. As noted, abolishing the pillars in the revised CSD-ISD already strengthens the emphasis on the multi-dimensional character of sustainable development. The reorganization of themes and sub themes also contributes. In order to highlight the role of indicators in addressing the important inter-thematic linkages, tables 1 and 2 present an overview of the potential of CSD indicators to measure progress towards sustainable development across various themes.

The table marks in dark grey the themes to which the indicators primarily belong. Note that an indicator may belong to more than one primary theme, as for example with the proportion of population with access to safe drinking water, which has primary links to both poverty and health. Light grey shading indicates a clear but likely secondary link. In the drinking water example, the indicator is also useful for measuring the impact of regulating and governing water utilities and, therefore, the governance theme is marked light grey in the table. Moreover, since domestic fresh water is the major source of drinking water for most countries, the indicator provides information on availability and use of water resources. It is also an indicator for the availability of infrastructure in utilities and equitable access to the basic need of water. Consequently, the themes of economic development and equity are also marked in light grey.

Table 1: Thematic coverage of CSD core indicators

	Poverty	Governance	Equity	Health	Education	Demographics	Atmosphere	Land	Oceans, Seas and Coasts	Fresh Water	Biodiversity	Economic Development	Global partnership	Cons. and Product. Patterns
Percent of Population Living Below National Poverty Line	■													
Proportion of population with access to improved sanitation														
Population with Access to Safe Drinking Water														
Share of households without access to electricity or commercial energy														
Proportion of population living in slums	■													
Internet users per 100 population		■												
Ratio of Average Female Wage to Male Wage			■											
Mortality Rate Under 5 Year Old				■										
Life expectancy at Birth					■									
Nutritional Status of Children														■
Percent of Population with Access to Primary Health Care Facilities														
Immunization Against Infectious Childhood Diseases														
Gross intake into last year of primary education, by sex														
Adult Education Attainment Level (Secondary and/or tertiary), by sex														
Adult Literacy Rate, by sex														
Population Growth Rate, rural and urban														
Dependency Ratio (Young and Old)														
Percentage of population living in disaster prone areas														
Emissions of Greenhouse Gases, total and by sector														
Ambient Concentration of Air Pollutants in Urban Areas														
Arable and Permanent Crop Land Area														
Forest Area as a Percent of Land Area, by type of forests														
Land affected by desertification														
Algae Concentration in Coastal Waters														
Fish catch outside safe biological limits														
Annual Withdrawal of Ground and Surface as Percent of Total Renewable Water														
Concentration of Faecal coliform in Freshwater														
Coverage of protected areas by biome and habitat														
Trends in the Abundance of Selected Key Species														
GDP per Capita														
Debt to GNI ratio														
Labor productivity														
Employment rate, disaggregated by sex														
Share of imports from developing countries and from LDCs														
Total Official Development Assistance (ODA) given or received as a percentage of GNI														
Intensity of Material Use														
Annual Energy Consumption per Capita and by sector														
Intensity of Energy Use														
Generation of Hazardous Waste														
Waste Treatment and Disposal by method of treatment														
Fuel use by distance of passenger transportation														

Table 2: Thematic coverage of CSD non-core indicators

	Poverty	Governance	Equity	Health	Education	Demographics	Atmosphere	Land	Oceans, Seas and Coasts	Fresh Water	Biodiversity	Economic Development	Global partnership	Cons. and Product. Patterns
Proportion of population below \$1 (1993 PPP) per day	■													
Waste water treatment by treatment category	■													
Fixed Telephone lines and cellular subscribers per 100 population		■												■
Ratio of national income shares of highest to lowest quintile		■												
Healthy life years				■										
Contraceptive Prevalence Rate				■										
Smoking prevalence				■										
Prevalence of mental health problems				■										
Prevalence of major diseases such as HIV/AIDS, Malaria, Tuberculosis				■										
Net enrolment rate in primary education				■										
Life long learning				■										
Total fertility rate				■										
Consumption of Ozone Depleting Substances							■							
Efficiency of Fertilizer Use								■						
Use of Agricultural Pesticides								■						
Organic farming as percentage of total farming								■						
Percent of forests damaged by defoliation								■						
Percentage of total population living in coastal areas								■						
Water use productivity by sector									■					■
BOD in Water Bodies									■					
Area of Selected Key Ecosystems										■				
Assessment of threatened species											■			
Investment Share in GDP												■		
Net Savings Rate													■	
Inflation														■
Employment Status, by sex														■
Unit labor costs														■
R&D Expenditure as percentage of GDP														■
Economic and Human Loss Due to Natural Disasters, as percentage of population and of GDP														■
Current account deficit as percentage of GDP														■
Net FDI inflows and outflows as percentage of GNI														■
Remittances as percentage of GNI														■
Annual Material Use per Capita, total and by sector														■
Share of renewable and non-renewable energy sources														■
Generation of Waste by industry/sector														■
Management of Radioactive Waste														■
Share of cars in passenger transportation														■
Road share of freight transport														■

The tables only consider direct relationships between indicators and themes. To illustrate this point, consider the indicator on educational attainment. As educational attainment is a measure of human capital, which in turn is a major element of economic growth, the theme of economic development is marked in light gray in the table. At the same time, economic growth is a major determinant of consumption patterns in areas of energy, waste, transport or material consumption. Therefore, educational attainment would be a valid indirect measure for elements of consumption and production. However, as the link in this case is indirect rather than direct, the consumption theme is not shaded in the table. Education certainly has important direct linkages to consumption patterns, as evidenced for example in the declaration of the United Nations Decade of Education for Sustainable Development. However, the CSD indicator on education does not serve as measure for the impact of education on sustainable consumption patterns, at least not directly.

The upcoming expert group meeting may want to comment on the usefulness of such tables and the accuracy of the shading contained in the tables.

V. Conclusion

The present background paper proposes specific modifications to the thematic framework of the CSD indicators. It also lists a series of issues that have to be decided upon before the revised CSD indicator set can be finalized. Given the progress made at the previous expert group meeting in December 2005 and during informal communication in 2006, the timeframe for completing the revision, including the preparation of all outstanding methodology sheets, by November 2006 appears to be feasible. It is expected that the outcome will form a better basis for governments across the world to revise their existing national indicators of sustainable development or to develop new ones.

Given the rapidly evolving nature of indicators of sustainable development, especially with regard to sectoral oriented indicator sets, the CSD indicator set will be

kept under continuous review. The inclusion of indicators currently contained in the to-be-developed category into either core or non-core indicators can be done after consultation with concerned parties on an ongoing basis. However, a more general review may be necessary in five years. Such a review could reflect national experiences with sustainable development indicators and their role in monitoring sustainable development strategies. This may also be an appropriate time to revisit the thematic framework in light of possible progress in the development of alternative frameworks and in the implementation of integrated data systems, for example through extended national accounting systems.

Annex: Short description of CSD indicators

1. Poverty

PERCENT OF POPULATION LIVING BELOW NATIONAL POVERTY LINE

Sub-theme: Income Poverty

Category: Core indicator

Brief Definition: The proportion of the population with a standard of living below the poverty line as defined by the national government

Purpose: The indicator assesses overall performance from the point of view of the poor. The indicator can be decomposed into poverty measures for various sub-groups of the population, such as by gender region of residence, employment sector, education level, or ethnic group. This is important poverty-reduction policies, such as the regional or sectoral priorities for public spending.

PERCENT OF POPULATION LIVING BELOW INTERNATIONAL POVERTY LINE

Sub-theme: Income Poverty

Category: Non-core indicator

Brief Definition: The proportion of the population with a standard of living below the international poverty line of 1\$ per day, using purchase power parity (PPP) exchange rates from 1993

Purpose: The indicator assesses overall performance from the point of view of the poor. The main purpose of this indicator is to allow for international comparisons of poverty.

PERCENTAGE OF POPULATION WITH ACCESS TO AN IMPROVED SANITATION FACILITY, URBAN AND RURAL

Sub-theme: Sanitation

Category: Core indicator

Brief Definition: Proportion of population with access to a private sanitary facility for human excreta disposal in the dwelling or immediate vicinity.

Purpose: To monitor progress in the accessibility of the population to sanitation facilities. Accessibility to adequate excreta disposal facilities is fundamental to decrease the faecal risk and frequency of associated diseases. When broken down by geographic (such as rural/urban zones) or social or economic criteria, it also provides tangible evidence of inequities.

PERCENTAGE OF URBAN POPULATION WITH ACCESS TO AN IMPROVED SANITATION FACILITY, BY WASTE WATER TREATMENT CATEGORY

Sub-theme: Sanitation

Category: Non-core indicator

Brief Definition: Proportion of urban population with access to a private sanitary facility for human excreta disposal that is treated according to waste water treatment categories: Primary, Secondary, Tertiary, as defined by OECD . [To be completed]

Purpose:

POPULATION WITH ACCESS TO SAFE DRINKING WATER

Sub-theme: Drinking water

Category: Core indicator

Brief Definition: Proportion of population with access to an improved drinking water source in a dwelling or located within a convenient distance from the user's dwelling.

Purpose: To monitor progress in the accessibility of the population to improved water sources. Accessibility to improved water sources is fundamental to decrease the faecal risk

and frequency of associated diseases. When broken down by geographic (such as rural/urban zones) or social or economic criteria, it also provides tangible evidence of inequities.

SHARE OF HOUSEHOLDS WITHOUT ELECTRICITY OR COMMERCIAL ENERGY, OR HEAVILY DEPENDENT ON NON-COMMERCIAL ENERGY

Sub-theme: Access to Energy

Category: Core indicator

Brief Definition: Share of households with no access to commercial energy services including electricity, or heavily dependent on 'traditional' non-commercial energy options, such as fuelwood, crop wastes and animal dung.

Purpose: To monitor progress in accessibility and affordability of commercial energy services including electricity. Commercial energy services are an essential component to providing basic social services. Lack of access to commercial energy services contributes to poverty and deprivation and limits economic development. Furthermore, adequate, affordable and reliable energy services are necessary to guarantee sustainable economic and human development.

PROPORTION OF URBAN POPULATION LIVING IN SLUMS

Sub-theme: Living conditions

Category: Core indicator

Brief Definition: The proportion of urban population lacking at least one of the following five housing conditions: Access to improved water; Access to improved sanitation facilities; Sufficient-living area, not overcrowded; Structural quality/durability of dwellings; Security of tenure.

Purpose: This indicator measures the proportion of city dwellers living in slums. It is a key indicator measuring the adequacy of the basic human need for shelter. An increase of this indicator is sign for deteriorating living conditions in urban areas. Disaggregating the indicator by type of housing conditions gives further information on the severity of inadequate housing conditions.

2. Governance

GOVERNANCE INDICATOR

Sub-theme: Good governance

Category: To-be-developed

Brief Definition: To-be-developed

Purpose

CORRUPTION INDICATOR

Sub-theme: Good governance

Category: To-be-developed

Brief Definition: The estimated prevalence of corruption is defined as the percentage of individuals or households that have been paid bribes or have been asked to pay bribes by government officials for their services. The indicator is included in the International Crime Victim Survey of UNODC.

Purpose: The indicator measures the prevalence of corruption among government officials.

INTERNET USERS PER POPULATION

Sub-theme: Information and Communication Technologies **Category:** Core

Brief Definition: Internet users are those who use the Internet from any location. The Internet is defined as a world-wide public computer network that provides access to a number of communication services including the World Wide Web and carries email, news, entertainment and data files. Internet access may be via a computer, Internet-enabled mobile phone, digital TV, games machine etc. Location of use can refer to any location, including work. The indicator is derived by dividing the number of Internet users by total population and multiplying by 100.

Purpose: The number of Internet users is a measure of Internet access and use. The internet can significantly shorten time lags as well as opening up a new range of information resources.

FIXED TELEPHONE LINES AND CELLULAR SUBSCRIBERS PER 100 POPULATION

Sub-theme: Information and Communication Technologies **Category:** Non-core

Brief Definition: The indicator is derived by dividing the number of fixed telephone lines and the number of mobile cellular subscribers by the population and multiplying by 100.

Purpose: This indicator is the broadest and most common measurement of the degree of telecommunication development in a country. Telecommunications is critical to support sustainable development and is closely linked to social, economic, and institutional development.

NUMBER OF RECORDED INTENTIONAL HOMICIDES AND VIOLENT CRIMES PER 100,000 POPULATION

Sub-theme: Crime

Category: To-be-developed

Brief Definition: Number of intentional homicides and number of other violent crimes recorded in criminal (police) statistics. Violent crimes include: assault, rape, robbery.

Purpose: To measure the development of violent crime over time. The phenomenon of crime compromises human dignity, creates a climate of fear and erodes the quality of life.

3. Equity

INCOME QUINTILE SHARE RATIO

Sub-theme: Income

Category: Non-core

Brief Definition: The ratio of total income received by the 20% of the population with the highest income (top quintile) to that received by the 20% of the population with the lowest income (lowest quintile). Income is understood as disposable income, after taxes and transfers.

Purpose: Inequality in income is a standard measure for intra-generational equity. Persistent high values of the indicator may indicate a low degree of social cohesion.

RATIO OF AVERAGE FEMALE WAGE TO MALE WAGE

Sub-theme: Gender equity

Category: Core

Brief Definition: Obtained as the quotient of average wages paid to female and male employees at regular intervals for time worked or work done..

Purpose: To assess the remuneration offered to women vis-à-vis their male counterpart to ultimately determine the level of the reward of women's participation in the economy. The lower the ratio of wages offered to women, the less the attraction there may be for women to join the labour force, which in turn deprives the economy of a vital component of development. This disadvantage could also be attributed to a number of reasons such as inequalities in educational opportunities for women

4. Health

MORTALITY RATE UNDER 5 YEARS OLD

Sub-theme: Mortality

Category: Core

Brief Definition: Under-5 mortality refers to the probability of dying before age 5, per 1,000 newborns.

Purpose: This indicator measures the risk of dying in infancy and early childhood. In high-mortality settings, a large fraction of all deaths occur at ages under 5 years. Under-5 mortality levels are influenced by poverty; education, particularly of mothers; the availability, accessibility and quality of health services; health risks in the environment, such as access to safe water and sanitation; and nutrition, among other factors.

LIFE EXPECTANCY AT BIRTH

Sub-theme: Mortality

Category: Core

Brief Definition: The average number of years that a newborn could expect to live, if he or she were to pass through life subject to the age-specific death rates of a given period.

Purpose: Measures how many years on average a new-born baby is expected to live, given current age-specific mortality risks. Life expectancy at birth is an indicator of mortality conditions and, by proxy, of health conditions.

HEALTHY LIFE EXPECTANCY AT BIRTH

Sub-theme: Mortality

Category: Non-core

Brief Definition: The average number of years that a newborn could expect to live in "full health" by taking into account years lived in less than full health due to disease and/or injury.

Purpose: The indicator measures how many years on average a new-born baby is expected to live, given current age-specific mortality and morbidity risks. He captures both fatal and non-fatal health outcome in a summary measure of average levels of population health.

PERCENT OF POPULATION WITH ACCESS TO PRIMARY HEALTH CARE FACILITIES

Sub-theme: Health care delivery

Category: Core

Brief Definition: Proportion of population with access to primary health care facilities. Primary health care is defined as essential health care made accessible at a cost the

country and community can afford, with methods that are practical, scientifically sound and socially acceptable.

Purpose: To monitor progress in the access of the population to primary health care. Accessibility of health services, going beyond just physical access, and including economic, social and cultural accessibility and acceptability, is of fundamental significance to reflect on health system progress, equity and sustainable development.

IMMUNIZATION AGAINST INFECTIOUS CHILDHOOD DISEASES

Sub-theme: Health care delivery

Category: Core

Brief Definition: The percent of the eligible population that have been immunized according to national immunization policies. The definition includes three components: (i) the proportion of children immunized against diphtheria, tetanus, pertussis, measles, poliomyelitis, tuberculosis and hepatitis B before their first birthday; (ii) the proportion of children immunized against yellow fever in affected countries of Africa; and (iii) the proportion of women of child-bearing age immunized against tetanus.

Purpose: This indicator monitors the implementation of immunization programs. Good management of immunization programmes is essential to the reduction of morbidity and mortality from major childhood infectious diseases, and is integral to the achievement of sustainable development.

CONTRACEPTIVE PREVALENCE RATE

Sub-theme: Health care delivery

Category: Non-core

Brief Definition: This indicator is generally defined as the percent of women of reproductive age (15-49 yrs) using any method of contraception at a given point in time. It is usually calculated for married women of reproductive age, but sometimes for other base population, such as all women of reproductive age at risk of pregnancy.

Purpose: The measure indicates the extent of people's conscious efforts and capabilities to control their fertility. It does not capture all actions taken to control fertility, since induced abortion is common in many countries.

NUTRITIONAL STATUS OF CHILDREN

Sub-theme: Nutritional status

Category: Core

Brief Definition: Percentage of underweight-for-age below -2 standard deviation (SD) of the National Center for Health Statistics (NCHS)/WHO reference median) among children under five years of age; and percentage of stunting (height-for-age below -2 SD of the National Center for Health Statistics (NCHS)/WHO reference median) among children under five years of age. [Definition for obesity of children to be added]

Purpose: The purpose of this indicator is to measure long term nutritional imbalance and malnutrition, as well as current under-nutrition and obesity.

SMOKING PREVALENCE RATE

Sub-theme: Health status and risks

Category: Non-core

Brief Definition: The indicator is defined as the number of current tobacco smokers among the population, expressed as a percentage of population. Current smoking includes both daily and non-daily or occasional smoking of cigarettes, cigars, pipes or any other smoked tobacco products.

Purpose: The indicator measures the spread of tobacco use in the population. Tobacco use remains the leading preventable cause of death and disease in our society. It is a major risk factor for diseases of the heart and blood vessels, chronic bronchitis and emphysema, cancers of the lung and other diseases.

SUICIDE DEATH RATES, BY SEX

Sub-theme: Health status and risks

Category: Non-core

Brief Definition: The indicator is defined as the number of deaths per 100,000 persons for which suicide is the officially declared cause. Standardized instead of actual death rates are used. Standardized death rates increase comparability over time and between countries, as they aim at measuring death rates independently of different age structures of populations.

Purpose: Suicide death rates are widely used as an indicator of mental health.

PREVALENCE OF MAJOR DISEASES SUCH AS HIV/AIDS, MALARIA AND TUBERCULOSIS

Sub-theme: Health status and risks

Category: Non-core

Brief Definition: The number of HIV infections, cases of tuberculosis, cases of malaria and other major diseases per 100,000 persons. The indicator should be calculated and reported separately for each disease posing a risk for sustainable development in the country. [To be completed]

Purpose: The indicator measures the size of the problem caused by major diseases and the effectiveness of programmes to combat their spread.

5. Education

GROSS INTAKE RATE INTO LAST YEAR OF PRIMARY EDUCATION, BY SEX

Sub-theme: Education level

Category: Core

Brief definition: Total number of new entrants in the last grade of primary education, regardless of age, expressed as a percentage of the population of the theoretical entrance age to the last grade of primary education.

Purpose: The indicator measures whether or not the entire eligible school age population has access to school and whether or not they complete the full primary cycle.

NET ENROLMENT RATE IN PRIMARY EDUCATION, BY SEX

Sub-theme: Education level

Category: Non-core

Brief definition: The indicator is the ratio of the number of children of official school age (as defined by the national education system) who are enrolled in primary school to the total population of children of official school age.

Purpose: The indicator shows the proportion of children of primary school age who are enrolled in primary school. Net enrolment refers only to children of official primary school age, and excludes children of other age groups enrolled in primary school age as well as children of primary school age enrolled in other levels of education.

ADULT SECONDARY (TERTIARY) SCHOOLING ATTAINMENT LEVEL, BY SEX

Sub-theme: Education level

Category: Core

Brief definition: Adult Secondary Schooling Attainment Level is defined as the proportion of the population of working age (25-64 years) which has completed at least (upper) secondary education. Adult Tertiary Schooling Attainment Level is defined as the proportion of the population of working age (25-64 years) which has completed at least the first stage (as defined by the International Standard Classification of Education or ISCED) tertiary education.

Purpose: These indicators provide measures of the quality of the human capital stock within the adult population of approximately working age. For instance, those who have completed upper secondary education can be expected either to have an adequate set of skills relevant to the labour market or to have demonstrated the ability to acquire such skills.

LIFE LONG LEARNING

Sub-theme: Education level

Category: Non-core

Brief definition: Percentage of the population aged 25 to 64 in education or training.

Purpose: The scale and quality of human resources are major determinants of both the creation of new knowledge and its dissemination. Key factors are the constant updating of the knowledge of the workforce, as well as the overall educational level of the working age population and the intensity of lifelong learning activities.

ADULT LITERACY RATES

Sub-theme: Literacy

Category: Core

Brief definition: The proportion of the adult population aged 15 years and over that is literate.

Purpose: This indicator provides a measure of the stock of literate persons within the adult population who are capable of using written words in daily life and to continue to learn. It reflects the accumulated accomplishment of education in spreading literacy. Any shortfall in literacy would provide indications of efforts required in the future to extend literacy to the remaining adult illiterate population.

6. Demographics

POPULATION GROWTH RATE, RURAL AND URBAN

Sub-theme: Population change

Category: Core

Brief definition: The average annual rate of change of population size during a specified period.

Purpose: The population growth rate measures how fast the size of population is changing. The dramatic growth of urban populations, caused by high rates of natural increase (excess of births over deaths) in urban areas as well as migration from rural to urban areas and the transformation of rural settlements into urban places, is of concern in many countries.

TOTAL FERTILITY RATE

Sub-theme: Population change

Category: Non-core

Brief definition: The average number of children a hypothetical cohort of women would have at the end of their reproductive period if they were subject during their whole lives to the fertility rates of a given period and if they were not subject to mortality. It is expressed as children per woman.

Purpose: The total fertility rate is a standard indicator of future population change. It is also used to indicate the replacement level fertility.

DEPENDENCY RATIO

Sub-theme: Population change

Category: Core

Brief Definition: The dependency ratio relates the number of children (0-14 years old) and older persons (65 years or over) to the working-age population (15-64 years old).

Purpose: Dependency ratios indicate the potential effects of changes in population age structures for social and economic development, pointing out broad trends in potential social support needs. A high dependency ratio indicates that the economically active population and the overall economy may face a greater burden in supporting the young and/or older economically dependent populations.

PERCENTAGE OF POPULATION LIVING IN DISASTER PRONE AREAS, BY TYPE OF NATURAL DISASTER

Sub-theme: Vulnerability to natural hazards

Category: Core

Brief Definition: The percentage of national population living in areas subject to significant risk of prominent hazards: cyclones, drought, floods, earthquake, volcanoes and landslides. Criteria on what constitutes a significant risk are under development for each of these hazards.

Purpose: This indicator contributes to a better understanding of the level of vulnerability to natural hazards in a given country, thus encouraging long-term, sustainable risk reduction programs to prevent disasters, which are a major threat to national development.

7. Atmosphere

EMISSIONS OF GREENHOUSE GASES, TOTAL AND BY SECTOR

Sub-theme: Climate change

Category: Core

Brief Definition: Anthropogenic emissions, less removal by sinks, of the greenhouse gases carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF₆). All gases can be converted in CO₂ equivalents. Sectors used in data submissions to the United Nations Framework Convention on Climate Change are: Energy; Industrial processes; solvent and other product use; agriculture; Land use, land use change and forestry (LULUCF); waste, others.

Purpose: This indicator measures the emissions of the six main GHGs which have a direct impact on climate change, less the removal of the main GHG CO₂ through sequestration as a result of land-use change and forestry activities. An increase of

greenhouse gas concentration in the atmosphere contributes to global warming, which is a major global challenge to sustainable development.

CONSUMPTION OF OZONE DEPLETING SUBSTANCES

Sub-theme: Ozone Layer Depletion

Category: Non-core

Brief Definition: This indicator will show the consumption trends for ODSs controlled under the Montreal Protocol on Substance that Deplete the Ozone Layer, thereby allowing inference of the amounts of Ozone Depleting Substances being eliminated as a result of the protocol.

Purpose: This indicator depicts the progress towards the phase out the ODSs by the countries which have ratified the Montreal Protocol on Substances that Deplete the Ozone Layer and its Amendments. The phase-out of ODSs, and their substitution by less harmful substances or new processes, will lead to the recovery of the ozone layer, whose depletion has adverse effects on human health, animals, plants, micro-organisms, marine life, materials, biogeochemical cycles, and air quality.

AMBIENT CONCENTRATION OF AIR POLLUTANTS IN URBAN AREAS

Sub-theme: Air quality

Category: Core

Brief Definition: Ambient air pollution concentrations of ozone, particulate matter (PM₁₀, and PM_{2.5}, if those are not available: SPM, black smoke), sulphur dioxide, nitrogen dioxide, lead. Additional: carbon monoxide, nitrogen monoxide, volatile organic compounds including benzene (VOCs)

Purpose: The indicator provides a measure of the state of the environment in terms of air quality and is an indirect measure of population exposure to air pollution of health concern in urban areas.

8. Land

LAND USE INDICATOR

Sub-theme: Land use and status

Category: To-be-developed

Brief Definition: The share of each of the main land categories in total land area: Arable land, permanent cropland, permanent pasture, forests and woodland, built-up areas, other. [To be completed]

Purpose: The indicator shows changes in the use of land resources over time.

LAND DEGRADATION

Sub-theme: Land use and status

Category: To-be-developed

Brief Definition: The share of land that has lost its biological or economic productivity. It includes land affected by soil erosion, deterioration of the physical, chemical and biological or economic properties of soil, long-term loss of natural vegetation. New methodologies for this indicator are currently developed.

Purpose: The indicator measures the reduction in quality of land resources.

ARABLE AND PERMANENT CROP LAND AREA

Sub-theme: Agriculture

Category: Core

Brief Definition: Arable and permanent crop land is the total of “arable land” and “land under permanent crops”. Arable land is the land under temporary crops, temporary meadows for mowing or pasture, land under market and kitchen gardens and land temporarily fallow (for less than five years); and land under permanent crops is the land cultivated with crops that occupy the land for long periods and need not be replanted after each harvest.

Purpose: This indicator shows the amount of land available for agricultural production and, *inter alia*, the cropland area available for food production. The data when related to other variables such as population, total land area, gross cropped area, fertilizer use, pesticides use, etc., can also be used to study agricultural practices of the country. In order to be useful, it must be available as a time series.

FERTILIZER USE EFFICIENCY

Sub-theme: Agriculture

Category: Non-core

Brief Definition: Extent of fertilizer use recovery in agriculture per crop unit. Data on the quantities of fertilizers used are converted into the three basic nutrient components and aggregated. The three components are nitrogen (N), phosphorous (P₂O₅), and potassium (K₂O). Nutrient components of crops and their by-products are based on their standardized chemical composition

Purpose: The purpose of this indicator is to measure the recovery of plant nutrients from mineral fertilizer application in crop husbandry (agriculture) for resource use efficiency.

USE OF AGRICULTURAL PESTICIDES

Sub-theme: Agriculture

Category: Non-core

Brief Definition: Use of pesticides per unit of agricultural land area.

Purpose: This indicator measures the use of pesticides in agriculture. Pesticides tend to accumulate in the soil and in biota, and residues may reach surface and groundwater through leaching. Humans can be exposed to pesticides through food.

AREA OCCUPIED BY ORGANIC FARMING

Sub-theme: Agriculture

Category: Non-core

Brief Definition: Ratio of total utilised agricultural area occupied by organic farming to total utilised agricultural area.

Purpose: This indicator shows the importance of organic farming. Organic farming contributes to reducing environmental loading on water resources and pressure on biodiversity.

FOREST AREA AS A PERCENT OF LAND AREA

Sub-theme: Forests

Category: Core

Brief Definition: The amount of natural and plantation forest area tracked over time. The indicator may be sub-divided by forest type, ecosystem or characteristic. Harmonized international classification systems are under development for the Global Forest Resources Assessment 2010.

Purpose: The purpose of the indicator is to show the area covered by the forest formations of a region/country over time. A continuing and fast decreasing forest area

in a country might be an alarm signal of unsustainable practices in the forestry and agricultural sector.

FOREST TREES DAMAGED BY DEFOLIATION

Sub-theme: Forests

Category: Non-core

Brief Definition: This indicator is defined as the percentage of trees on forest and other wooded land in the defoliation classes moderate, severe and dead. Defoliation is needle or leaf loss in the assessable crown as compared with a reference tree.

Purpose: The purpose of the indicator is to provide information on the state of forest defoliation. The extent of defoliation provides an indication of the state of health of forests, and forest health is a precondition for sustainable forest management.

FOREST GOVERNANCE

Sub-theme: Forests

Category: To-be-developed

Brief Definition: To be developed.

Purpose:

LAND AFFECTED BY DESERTIFICATION

Sub-theme: Desertification

Category: Core

Brief Definition: This is a measure of the amount of land affected by desertification and its proportion of national territory. Desertification is defined as land degradation in arid, semi-arid, and dry sub-humid areas.

Purpose: The indicator describes the extent and severity of desertification at the national level. It should be: (i) a measure of the state of the problem at any one time; (ii) an indication of the trend in the severity of the problem over time and success of response mechanisms; and (iii) a means of comparing the severity of the problem from one country to another.

9. Oceans, seas and coasts

ALGAE CONCENTRATION IN COASTAL WATERS

Sub-theme: Coastal Zone

Category: Core

Brief Definition: This indicator uses the concentration of algae growing in coastal waters to represent the health of the coastal zone ecosystem, and the effectiveness of measures aimed at reducing nutrient inputs from run-off and discharge.

Purpose: This indicator has the potential to illustrate the effectiveness of measures designed to reduce nutrient inputs in accordance with the goals of the Regional Seas Conventions and Action Plans. High algal concentrations in coastal waters reflect high nutrient inputs, which can represent serious threats to coastal ecosystem health.

PERCENTAGE OF TOTAL POPULATION LIVING IN COASTAL AREAS

Sub-theme: Coastal Zone

Category: Core

Brief Definition: Percentage of total population living within 100 kilo-meters of the coastline. A country might also consider percentage of population in the low elevation coastal zone (<10 meters elevation), or percentage of population in the coastal draining watershed zone. See methodology for more information on defining the coastal zone.

Purpose: This indicator serves two purposes. It quantifies an important driver of coastal ecosystem pressure, and it also quantifies an important component of vulnerability to sea-level rise and other coastal hazards. Among the most important pressures are habitat conversion, land cover change, pollutant loads, and introduction of invasive species.

COASTAL POLLUTION

Sub-theme: Coastal Zone

Category: To-be-developed

Brief Definition: To be developed

Purpose:

PROPORTION OF FISH STOCKS WITHIN THEIR SAFE BIOLOGICAL LIMITS

Sub-theme: Fisheries

Category: Core

Brief Definition: Percentage of fish stocks exploited within their level of maximum biological productivity, i.e., stocks that are either “Underexploited”, “Moderately exploited” or “Fully exploited” according to formal stock assessments based on a FAO procedure. Stocks that are “Overexploited”, “Depleted” and “Recovering” are outside their maximum biological productivity.

Purpose: To provide information on the state of exploitation of fishery resources at the global, regional and national levels.

CORAL REEFS

Sub-theme: Marine environment

Category: To-be-developed

Brief Definition: indicator that will use trends in the extant area of coral reefs (a ‘key ecosystem’ for many countries), and the percentage live cover of those reefs, to assess the relative effectiveness of measures for conserving coral reef biodiversity at the ecosystem level and as a tool to estimate the need for specific conservation measures to maintain the coral reef biodiversity in a country or region.

Purpose: The indicator has the potential to illustrate the effectiveness of national measures designed to conserve biological diversity and ensure its use is sustainable, including the measures implemented in fulfilment of obligations accepted under the Convention on Biological Diversity (CBD).

MARINE TROPHIC INDEX

Sub-theme: Marine environment

Category: To-be-developed

Brief Definition: To be developed

Purpose:

10. Freshwater

ANNUAL WITHDRAWALS OF GROUNDWATER AND SURFACE WATER AS A PERCENT OF TOTAL RENEWABLE WATER

Sub-theme: Water quantity

Category: Core

Brief Definition: The total annual volume of ground and surface water abstracted for water uses as a percentage of the total annually renewable volume of freshwater. The *total renewable water resources* are defined as the sum of internal renewable water

resources (average annual flow of rivers and recharge of groundwater generated from endogenous precipitation) and incoming flow originating outside the country, taking into consideration the quantity of flows reserved to upstream and downstream countries through formal or informal agreements or treaties and reduction of flow due to upstream withdrawal

Purpose: The indicator shows the degree to which total renewable water resources are being exploited to meet the country's water demands. It is an important measure of a country's vulnerability to water shortages.

WATER USE PRODUCTIVITY BY SECTOR

Sub-theme: Water quantity

Category: Non-core

Brief Definition: The indicator is defined as value added per sector divided by the amount of water used by sector. Value added is to be measured in constant prices, either in national or international currencies.

Purpose: The indicator shows how efficient the economy and its sectors use water resources. It is an important indicator for policies of water allocation among different sectors of the economy, as water is likely to be allocated to the more productive uses in water-scarce regions.

BIOLOGICAL OXYGEN DEMAND (BOD) IN WATER BODIES

Sub-theme: Water quality

Category: Non-core

Brief Definition: BOD measures the amount of oxygen required or consumed for the microbiological decomposition (oxidation) of organic material in water.

Purpose: The purpose of this indicator is to assess the quality of water available to consumers in localities or communities for basic and commercial needs. It is also one of a group of indicators of ecosystem health.

PRESENCE OF FAECAL COLIFORMS IN FRESHWATER

Sub-theme: Water quality

Category: Non-core

Brief Definition: The proportion of freshwater resources destined for potable supply containing concentrations of faecal coliforms which exceed the levels recommended in the World Health Organization (WHO) Guidelines for Drinking-water Quality.

Purpose: The indicator assesses the microbial quality of water available to communities for basic needs. It identifies communities where contamination of water with human and animal excreta at source or in the supply poses a threat to health.

11. Biodiversity

PROTECTED AREA AS A PERCENT OF TOTAL AREA, BY BIOME AND HABITAT

Sub-theme: Ecosystem

Category: Core

Brief Definition: This indicator measures the area of protected land ecosystems, inland water ecosystems, and marine ecosystems expressed as a percentage of the total area of land ecosystems, inland water ecosystems and marine ecosystems respectively. The indicator can be disaggregated by both biome (marine/ freshwater/ terrestrial) and habitat, and this will enable the indicator to provide more specific information for meeting users' needs. It may also be possible and desirable to disaggregate the indicator

further, for example by protected area category (i.e. using the IUCN categorisation system).

Purpose: The indicator represents the extent to which areas important for conserving biodiversity, cultural heritage, scientific research (including baseline monitoring), recreation, natural resource maintenance, and other values, are protected from incompatible uses. It shows how much of each major ecosystem is dedicated to maintaining its diversity and integrity. In general it provides a broad assessment and requires further elaboration particularly in relation to management effectiveness.

MANAGEMENT EFFECTIVENESS OF PROTECTED AREAS

Sub-theme: Ecosystem

Category: To-be-developed

Brief Definition: This indicator will use information about the context, planning and design, resource inputs, management processes, delivery of goods and services, and conservation outcomes of protected areas to determine the effectiveness with which they are being managed, and thus the effectiveness of protected areas as a tool for biodiversity conservation

Purpose: The indicator represents the effectiveness of attempts to protect areas important for conserving biodiversity, cultural heritage, scientific research (including baseline monitoring), recreation, natural resource maintenance, and other values, from incompatible uses.

AREA OF SELECTED KEY ECOSYSTEMS

Sub-theme: Ecosystem

Category: Non-core

Brief Definition: This indicator uses trends in the extant area of identified key ecosystems to assess the relative effectiveness of measures for conserving biodiversity at ecosystem level and as a tool to estimate the need for specific conservation measures to maintain the biological diversity in a country or region.

Purpose: The indicator has the potential to illustrate the effectiveness of national measures designed to conserve biological diversity and ensure its use is sustainable, including the measures implemented in fulfilment of obligations accepted under the Convention on Biological Diversity (CBD).

FRAGMENTATION OF HABITAT

Sub-theme: Ecosystem

Category: To-be-developed

Brief Definition: This indicator will use trends in the fragmentation of identified key habitats to assess the relative effectiveness of measures for conserving biodiversity and as a tool to estimate the need for specific conservation measures to maintain the biological diversity in a country or region.

Purpose: The indicator has the potential to illustrate the effectiveness of national measures designed to conserve biological diversity and ensure its use is sustainable, including the measures implemented in fulfilment of obligations accepted under the Convention on Biological Diversity (CBD).

ABUNDANCE OF KEY SPECIES

Sub-theme: Ecosystem

Category: Core

Brief Definition: This indicator uses estimates of population trends in selected species to represent changes in biodiversity, and the relative effectiveness of measures to

maintain biodiversity. The indicator can be applied to individual species groups (e.g. birds, butterflies), or can be aggregated to incorporate a number of taxa (e.g. in a fashion similar to the Living Planet Index), according to data availability and indicator applicability.

Purpose: The indicator has the potential to illustrate the effectiveness of national measures designed to conserve biological diversity and ensure its use is sustainable, including the measures implemented in fulfilment of obligations accepted under the Convention on Biological Diversity (CBD).

ASSESSMENT OF THREATENED SPECIES

Sub-theme: Ecosystem

Category: Non-core

Brief Definition: This indicator uses an adaptation of the global World Conservation Union (IUCN) Red List Index methodology to show overall changes in threat status (i.e. relative project extinction risk) of representative sets of species at the national level. It is applicable for any country which has a national Red List, and which has fully assessed its species more than once over time. The red list contains seven categories: Least Concern, Near Threatened, Vulnerable, Endangered, Critically Endangered, Extinct in the Wild, Extinct,

Purpose: The indicator allows monitoring the extinction risk of species over time. The indicator has the potential to illustrate the effectiveness of national measures designed to conserve biological diversity and ensure its use is sustainable, including the measures implemented in fulfilment of obligations accepted under the Convention on Biological Diversity (CBD).

12. Economic development

GROSS DOMESTIC PRODUCT PER CAPITA

Sub-theme: Macroeconomic performance

Category: Core

Brief Definition: Levels of gross domestic product (GDP) per capita are obtained by dividing annual or period GDP at current market prices by population. A variation of the indicator could be the growth of real GDP per capita which is derived by computing the annual or period growth rate of GDP in constant basic producers' or purchasers' prices divided by corresponding population.

Purpose: The indicator is a basic economic growth indicator and measures the level and extent of total economic output. It reflects changes in total production of goods and services. It is a most powerful summary indicator of the economic state of development in its many aspects.

INVESTMENT SHARE IN GROSS DOMESTIC PRODUCT

Sub-theme: Macroeconomic performance

Category: Non-core

Brief Definition: This indicator measures the share of investment in relation to total production. It is obtained by dividing gross capital formation by gross domestic product, both at purchasers' prices. Gross capital formation includes outlays on additions of new durable goods to stocks of fixed assets by industries, producers of government services, the private sector, non-profit services, and households, but excludes outlays of government services on durable goods for military use.

Purpose: The investment ratio gives an impression of the relative importance of investment as opposed to, for example, consumption. Acquisitions of capital goods provide important information on future economic performance of a society by widening and deepening the capital stock.

NET SAVINGS RATE

Sub-theme: Macroeconomic performance

Category: Non-core

Brief Definition: The indicator is defined as net savings divided by net national income. Net savings is the part of net national disposable income (i.e. net national income plus the balance of current transfers with the rest of the world) that is not used for consumption. Net national income is gross national income minus the depreciation of capital.

Purpose: The indicator measures the part of income available for net investment (i.e. investment beyond just replacing depreciation) or, possibly, capital transfers to the rest of the world. It is an important indicator for future net wealth.

INFLATION RATE

Sub-theme: Macroeconomic performance

Category: Non-core

Brief Definition: The indicator is defined as the annual percentage increase of the consumer price index. Consumer price indices are based on a representative basket of goods and services purchased by consumers in an economy. Composition and relative weights of the basket are reviewed periodically.

Purpose: The indicator measures inflation, which if too high hampers economic growth. High and unanticipated inflation increases uncertainty and leads to inter-and intra-temporal misallocation of resources as long as prices are not fully flexible. Inflation, especially if unanticipated, has often unwanted distributional effects, as it shifts income away from fixed income earners (such as pensioners) and wealth away from asset owners.

DEBT TO GNI RATIO

Sub-theme: Sustainable Public Finance

Category: Non-core

Brief Definition: The indicator is defined as the total amount of outstanding debt issued by the general government divided by gross national income. Total debt consists of external debt (debt held by non-residents) and internal debt (held by residents). Debt issued in foreign currency is converted by using market exchange rates.

Purpose: The indicator is a standard measure of public finance. Debt constitutes a burden for future generations as it reduces the amount available for their consumption and investments. The indicator increases over time if the public deficit is larger than the product of nominal GNI growth and the debt ratio.

EMPLOYMENT-TO-POPULATION RATIO

Sub-theme: Employment

Category: Core

Brief Definition: The employment-to-population ratio is defined as the proportion of a country's working-age population that is employed.

Purpose: The employment-to-population ratio provides information on the ability of an economy to create employment. Employment is viewed as the desired portion of the economically active population (labour force). Employment-to-population ratios are of

particular interest when broken down by sex, as they can provide information on gender differences in labour market activity in a given country.

STATUS IN EMPLOYMENT

Sub-theme Employment

Category: Core

Brief Definition: The indicator of status in employment distinguishes between three categories of the total employed. These are: (a) wage and salaried workers (also known as employees); (b) self-employed workers (employers, own-account workers and members of producers' cooperatives); c) contributing family workers (also known as unpaid family workers). These three groups of workers are presented as percentages of the total employed for both sexes and for males and females separately.

Purpose: This indicator provides information on the distribution of the workforce by status in employment. A high share of wage and salaried workers can signify advanced economic development, high shares of own-account-workers. A high share of contributing family workers is often associated with poor development, little job growth, widespread poverty and often a large rural economy.

LABOUR PRODUCTIVITY

Sub-theme Employment

Category: Core

Brief Definition: Labour productivity is defined as output (in constant prices) per unit of labour. The indicator can be reported for the total economy as well as for different sectors.

Purpose: Positive changes of this indicator measure the part of economic growth due to more effective work by those who are employed. Driving forces behind labour productivity include the accumulation of machinery and equipment, improvements in organization as well as physical and institutional infrastructures, improved health and skills of workers ("human capital") and the generation of new technologies.

UNIT LABOUR COST

Sub-theme Employment

Category: Non-core

Brief Definition: Unit labour cost is defined as labour compensation per unit of gross value added produced. Total labour compensation includes gross wages and salaries of employees and other costs of labour that are paid by employers, including employers' contributions to social security and pension schemes.

Purpose: Unit Labour Cost represents a direct link between productivity and the cost of labour used in generating output. A rise in a country's unit labour cost represents an increased reward for labour's contribution to output. However, a rise in labour cost that is higher than the rise in labour productivity, especially in tradable goods producing sectors, may indicate a decrease in international competitiveness, if other costs are not adjusted in compensation.

GROSS DOMESTIC EXPENDITURE ON RESEARCH AND DEVELOPMENT AS A PERCENT OF GROSS DOMESTIC PRODUCT

Sub-theme Research and Development

Category: Core

Brief Definition: Gross domestic expenditure on scientific research and experimental development (R&D) expressed as a percentage of Gross Domestic Product (GDP).

Purpose: This ratio provides an indication of the level of financial resources devoted to R&D in terms of their share of the GDP. R&D is essential for expanding the knowledge basis and developing anew and improved products and the in the economy. It is a critical component of future economic growth.

TOURISM INDICATOR

Sub-theme: Tourism

Category: To-be-developed

Brief Definition: To be developed

Purpose:

HUMAN AND ECONOMIC LOSS DUE TO DISASTERS

Sub-theme: Disaster response

Category: Non-core

Brief Definition: The number of persons deceased, missing, and/or injured as a direct result of a disaster involving natural hazards; and the amount of economic and infrastructure losses incurred as a direct result of the natural disaster.

Purpose: To provide estimates of the human and economic impact of disasters in order to measure the trends in population vulnerability and to determine whether a country or province is becoming more or less prone to the effects of disasters.

13. Global partnership

CURRENT ACCOUNT DEFICIT AS PERCENTAGE OF GDP

Sub-theme: Trade

Category: Non-core

Brief Definition: The indicator is the balance of the current account divided by gross domestic product. The current account is part of the balance of payments and contains financial transactions of economic value between residents and non-residents of an economy. In the 5th edition of the balance of payment manual, the current account components are the balance of trade in goods and services, balance of income (compensation of employees working abroad and income from foreign investments) and current transfers (workers remittances and government transfers).

Purpose: The indicator shows the economic relation with the rest of the world. A current account deficit is offset by a surplus in the capital (capital transfers) and financial (foreign investment and reserves) accounts. Hence, a current account deficit increases the net liabilities with foreign countries. Repayment of these liabilities decreases the resources future generations have available for consumption and investment.

SHARE OF IMPORTS FROM DEVELOPING COUNTRIES AND LDCS

Sub-theme: Trade

Category: Core

Brief Definition: The indicator is defined as the share of imports from least-developed countries (LDCs) and from other developing countries in total imports.

Purpose: Imports from developing countries and from LDCs constitute a major source of external financing for development of those countries. For developed country importers, the indicator is one measure of the relative importance of North-South trade, whereas for developing country importers it is a measure of South-South trade.

TOTAL OFFICIAL DEVELOPMENT ASSISTANCE GIVEN OR RECEIVED AS PERCENTAGE OF GROSS NATIONAL INCOME

Sub-theme: External financing

Category: Core

Brief Definition: : This indicator is defined as the total official development assistance (ODA) given or received as a share of GNI of the source or recipient country, respectively. When ODA flows by donor countries are measured, ODA comprises bilateral disbursements of concessional funds (as defined by the OECD Development Assistance Committee) to developing countries and multilateral institutions. When ODA receipts by developing countries are measured, ODA comprises disbursement of concessional finance from both bilateral and multilateral sources.

Purpose: The indicator is a measure of the size of flows that are both concessional, and aimed mainly at promoting development and welfare of developing countries. It conveys information about the borrower's receipt of aid from official lenders or official lender's concessional flows to developing countries.

NET FOREIGN DIRECT INVESTMENT INFLOWS AND OUTFLOWS AS PERCENTAGE OF GNI

Brief Definition: : This indicator is defined as the share of net foreign direct investment (FDI) inflows and of net FDI outflows to GNI. FDI is an investment abroad in which the investor's purpose is to gain an effective voice in the management of the enterprise. The 5th edition of the Balance of Payment Manual suggests a threshold of 10 per cent of equity ownership to qualify an investor as a foreign direct investor.

Purpose: The indicator shows the integration of an economy into the international economic system. An increase of this indicator shows an increase in the attractiveness of a country to foreign investors. In many cases, FDI is a major source of external financing and an important determinant of economic growth.

REMITTANCES AS PERCENTAGE OF GNI

Brief Definition: : The indicator is defined as the ratio of total remittances to GNI. For the 6th edition of the balance of payment manual, total remittances are defined as the sum of personal transfers, net compensation of employees, capital transfers between households and social benefits. In the 5th edition, remittances were defined as the sum of net compensation of employees, worker's remittances (a part of personal transfers) and migrant's capital transfers.

Purpose: The indicator shows economic benefits for a country from temporary and permanent movements of its citizens abroad. For many countries, remittances are a major and stable source of external financing.

14. Consumption and production patterns

INTENSITY OF MATERIAL USE

Sub-theme Employment

Category: Core

Brief Definition: Ratio of Domestic Material Consumption (DMC) to Gross Domestic Product (GDP) at constant prices

Purpose The indicator provides a basis for policies to increase the efficient use of raw materials in order to conserve natural resources and reduce environment degradation resulting from primary production, material processing, manufacturing and waste disposal

DOMESTIC MATERIAL CONSUMPTION

Sub-theme Employment

Category: Non-core

Brief Definition: DMC is defined as the weight of the total amount of materials directly used in the economy (used domestic extraction plus imports), minus the materials that are exported.

Purpose: The indicator provides a basis for policies to decouple the growth of the economy from the use of natural resources so as to achieve a reduction of environment degradation resulting from primary production, material processing, manufacturing and waste disposal.

ANNUAL ENERGY CONSUMPTION, BY CAPITA AND BY SECTOR

Sub-theme: Energy

Category: Core

Brief Definition: The indicator is defined as the total energy consumption (total primary energy supply or total final consumption) in the economy (in tonnes of oil equivalents) divided by population (energy use per capita). [Sectoral breakdown to be added]

Purpose: This indicator measures the level of energy use on a per capita basis and reflects the energy-use patterns in the economy overall and in the different sectors. Energy is a key factor in economic development and in providing vital services that improve quality of life. Although energy is a key requirement for economic progress, its production, use and by-products have resulted in major pressures on the environment, both by depleting resources and by creating pollution

SHARE OF RENEWABLE AND NON-RENEWABLE SOURCES IN TOTAL ENERGY SUPPLY

Sub-theme: Energy

Category: Non-core

Brief Definition: The share of renewable and non-renewable fuel sources in total primary energy supply or total final energy consumption. Renewable energy sources are divided into non-combustible (geothermal, hydro, solar, wind, tide and wave) and combustible renewables and waste (biomass, animal products, municipal waste and industrial waste). Non-renewables are fossil fuels (coal, crude oil, petroleum products, gas) and nuclear.

Purpose: The promotion of energy, and in particular of electricity from renewable sources of energy, is a high priority for sustainable development for several reasons, including the security and diversification of energy supply and environmental protection.

INTENSITY OF ENERGY CONSUMPTION, TOTAL AND BY SECTOR

Sub-theme: Energy

Category: Non-core

Brief Definition: The indicator is defined as energy consumption (of the economy in total and of the main sectors) divided by gross domestic product (or value added in case of a sector). For the residential sector, number of households, population or floor area should be used as denominator.

Purpose: Declining trends in overall energy use relative to GDP (or value added) indicate whether the economy manages to improve its energy efficiency and, hence, to decouple economic growth from energy consumption.

GENERATION OF WASTE

Sub-theme: Waste generation and management

Category: Non-core

Brief Definition: The indicator is defined as the amount of waste generated by selected main groups of industries or sectors of the economy, expressed per capita and per unit of GDP. The recommended categories are based on the International Standard Industrial Classification of All Economic Activities (ISIC) Rev. 3.

Purpose: The main purpose is to show the trend in the generation of waste produced by different human activities. Waste generation per capita allows comparisons of countries with similar economies, while waste generated per unit of GDP will show if there has been any decoupling of waste generation from economic growth. For each industry or sector selected, the two time series should be shown together to get the full benefit of the indicator

GENERATION OF HAZARDOUS WASTES

Sub-theme: Waste generation and management

Category: Core

Brief Definition: The total amount of hazardous wastes generated per year through industrial or other waste generating activities, according to the definition of hazardous waste as referred to in the Basel Convention and other related conventions.

Purpose: It provides a measure of the extent and type of industrialization in a country and in this connection the nature of the industrial activities including technologies and processes generating hazardous wastes.

MANAGEMENT OF HAZARDOUS WASTES

Sub-theme: Waste generation and management

Category: Non-core

Brief Definition: To-be-developed.

Purpose:

MANAGEMENT OF RADIOACTIVE WASTE

Sub-theme: Waste generation and management

Category: Non-core

Brief Definition: Progress in the management of radioactive waste is measured against key milestones related to both the processing of waste into forms suitable for either safe storage or for placement into a designated endpoint (the "form factor") and to the placement of waste into an endpoint facility ("endpoint factor"). Radioactive waste from various sources, such as nuclear power generation and other nuclear fuel cycle related activities, radioisotope production and use for applications in medicine, agriculture, industry and research, is considered.

Purpose: The purpose is to represent the progress in managing the various radioactive wastes that arise from the nuclear fuel cycle and/or from nuclear applications. The indicator provides a measure of both the current status of radioactive waste management at any point in time and the progress made over time towards the overall sustainability of radioactive waste management.

WASTE TREATMENT AND DISPOSAL

Sub-theme: Waste generation and management

Category: Non-core

Brief Definition: The indicator is defined as percentage of waste which is *i*) recycled and composted; *ii*) incinerated and *iii*) landfilled on a controlled site.

Purpose: The purpose of this indicator is to measure the proportion of waste generated which is recycled (including composted), incinerated, or landfilled on a controlled site. It gives an indication of the environmental impact of waste management in the country. The proper treatment and disposal of waste is important from an environmental and social viewpoint but can be an economic burden on industries, municipalities and households.

CAR SHARE OF INLAND PASSENGER TRANSPORT

Sub-theme: Transport

Category: Non-core

Brief definition: Share of car transport in total inland (passenger cars, buses and coaches, and trains) passenger transport in passenger-km

Purpose: To provide information on the dependence of passenger transport on the car at the global, regional and national levels. The use of cars for passenger transportation is generally less energy efficient and has greater environmental and social impacts, such as pollution, global warming as well as a higher accident rate, than mass transit.

ROAD SHARE OF INLAND FREIGHT TRANSPORT

Sub-theme: Transport

Category: Non-core

Brief definition: Share of road in total inland (road, rail and inland waterways) freight transport in tonne-km.

Purpose: To provide information on the dependence of goods transport on road at the global, regional and national levels. Road transport is less energy-efficient and produces more emissions per tonne-kilometre than either rail or inland waterways transport. Therefore, the use of road for freight transport has greater environmental and social impacts, such as pollution, global warming, as well as a higher accident rate, than either rail or inland waterways transport.

FUEL USE BY DISTANCE OF TRANSPORTATION

Sub-theme: Transport

Category: Core

Brief definition: Fuel use per unit of freight-kilometre (km) hauled and per unit of passenger-km travelled by mode. [To be completed]

Purpose: Transport is a major user of energy, mostly in the form of oil products, which makes transport the most important driver behind growth in global oil demand. The transport indicators measure how much energy is used for moving both goods and people.