



Session 1: International Needs for Environmental Statistics and Indicators

Reena Shah

United Nations Statistics Division

New York

(Dakar, 28 February - 4 March 2005)



Overview

- **Uses of statistics and indicators**
- **Policy demands for statistics and indicators**
- **CSD list of indicators**
- **MDG list of indicators**
- **International environmental conventions**
- **Challenges in the compilation of environmental statistics and indicators**



Uses of statistics and indicators

- **Planning**
- **Formulating laws, policies and regulations**
- **Designing market instruments**
- **Research and education**
- **Media**
- **Public participation**
- **Measuring progress**



Frameworks and indicators

- **Frameworks and approaches**
- **Lists of indicators**
- **Focus of this presentation is on the Commission on Sustainable Development (CSD) list of indicators and the Millennium Development Indicators**



Policy demand for statistics and indicators (UNCED)

Chapter 40: Information for Decision-Making

Par. 40.6: Development of Indicators of Sustainable Development

“ Countries at the national level and international governmental and non-governmental organizations at the international level should develop the concept of indicators of sustainable development in order to identify such indicators..... ”

Par. 40.7: Promotion of the Global Use of Indicators

“The organs and organizations of the UN system ... could provide recommendations for harmonized development of indicators at the national, regional and global levels, and for incorporation of a suitable set of these indicators in common, regularly updated, and widely accessible reports and databases, for use at the international level, subject to national sovereignty considerations ”



Policy demand for statistics and indicators (CSD 3)

The CSD 3rd Session (1995) approved a 5 year Programme of Work on Indicators of Sustainable Development

Main Objective:

A core list of indicators of sustainable development accessible to decision-makers at the national level by the year 2001. Achieved by defining them, elucidating their methodologies and providing training and other capacity-building activities, as relevant.



Policy demand for statistics and indicators (WSSD)

- **Strengthen national and regional information and statistical and analytical services relevant to sustainable development policies and programmes ... (WSSD: X,129);**
- **Encourage and promote further work on indicators for sustainable development by countries at the national level ... (WSSD: X,130,131);**
- **Develop information systems that make the sharing of valuable data possible ... (WSSD:X,132 (b));**
- **Support countries, particularly developing countries in their national efforts to collect data that are accurate, long-term, consistent and reliable (WSSD:X,133 (a)).**



Policy demand for statistics and indicators (CSD 11-2003)

- **Encourages further work on indicators for sustainable development by countries at the national level, including integration of gender aspects, on a voluntary basis, in line with national conditions and priorities (CSD 11 par.13)**
- **Underscores that reporting to the CSD be guided by....effective use of indicators..... (CSD 11 par. 14d)**

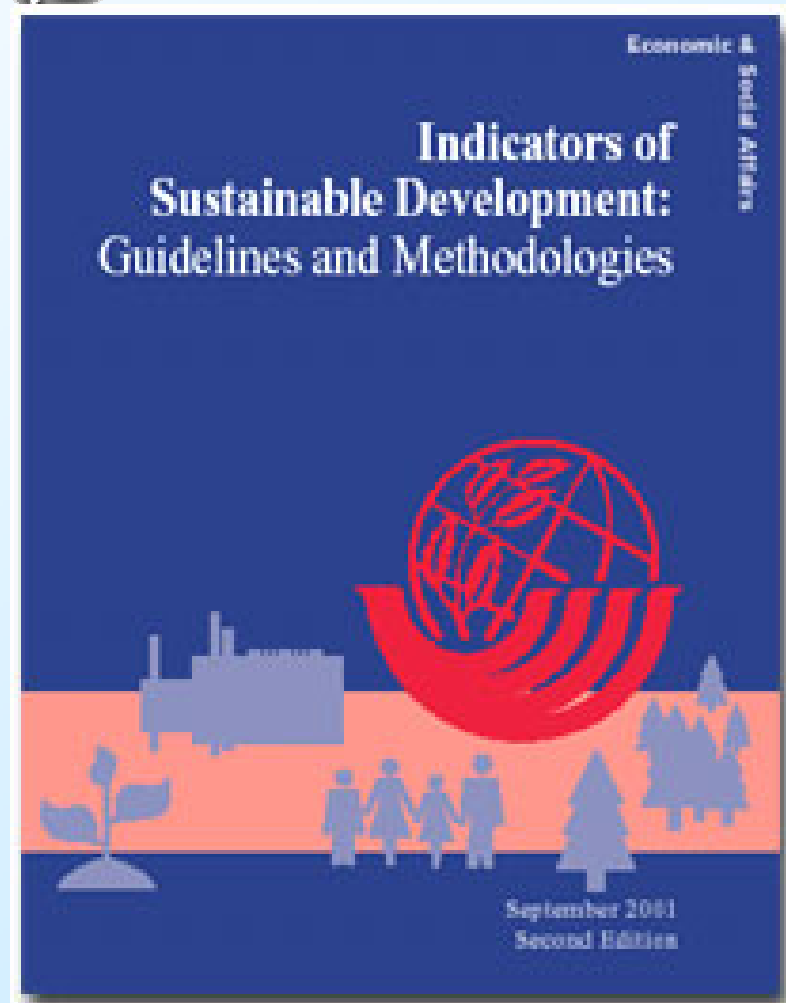


CSD Indicators of Sustainable Development Guidelines and Methodologies

- **Core set of 58 indicators with flexible adaptation at the national level**
 - **Description of themes and sub-themes**
 - **Methodology sheet for each indicator by lead agency**
 - **Guidelines for national implementation**
- (<http://www.un.org/esa/sustdev/natlinfo/indicators/isd.htm>)



CSD Indicators of Sustainable Development







CSD Framework

Dimension	Theme	Sub-Theme	Indicators
Social			
Environmental			
Economic			
Institutional			

SOCIAL

Theme	Sub-theme	Indicator
 Equity	Poverty	Percent of Population Living below Poverty Line
		Gini Index of Income Inequality
		Unemployment Rate
	Gender Equality	Ratio of Average Female Wage to Male Wage
Health (6)	Nutritional Status	Nutritional Status of Children
	Mortality	Mortality Rate Under 5 Years Old
		Life Expectancy at Birth
	Sanitation	Percent of Population with Adequate Sewage Disposal Facilities
	Drinking Water	Population with Access to Safe Drinking Water
	Healthcare Delivery	Percent of Population with Access to Primary Health Care Facilities
		Immunization against Infectious Childhood Diseases
		Contraceptive Prevalence Rate
Education (36)	Education Level	Children Reaching Grade 5 of Primary Education Adult
		Adult Secondary Education Achievement Level
	Literacy	Adult Literacy Rate
Housing (7)	Living Conditions	Floor Area per Person
Security	Crime (36, 24)	Number of Recorded Crimes per 100,000 Population
Population (5)	Population Change	Population Growth Rate
		Population of Urban Formal and Informal Settlements

ENVIRONMENTAL

Theme	Sub-theme	Indicator
 Atmosphere	Climate Change	Emission of Greenhouse Gases
	Ozone Layer Depletion	Consumption of Ozone Depleting Substances
	Air Quality	Ambient Concentration of Air Pollutants in Urban Areas
Land (10)	Agriculture (14)	Arable and Permanent Crop Land Area
		Use of Fertilizers
		Use of Agriculture Pesticides
	Forest (11)	Forest Area as a Percent of Land Area
		Wood Harvesting Intensity
	Desertification (12)	Land Affected by Desertification
Urbanization (7)	Area of Urban Formal and Informal Settlements	
Oceans, Seas and Coasts (17)	Coastal Zone	Algae Concentration in Coastal Waters
		Percent of Total Population Living in Coastal Areas
	Fisheries	Annual Catch by Major Species
Fresh Water (18)	Water Quality	Annual Withdrawal of Ground and Surface Water as a Percent of Total Available Water
	Water Quality	BOD in Water Bodies
		Concentration of Faecal Coliform in Freshwater
Biodiversity (15)	Ecosystem	Areas of Selected Key Ecosystems
		Protected Area as a % of Total Area
	Species	Abundance of Selected Key Species



ECONOMIC

Theme	Sub-theme	Indicator
Economic Structure (2)	Economic Performance	GDP per Capita
		Investment Share in GDP
	Trade	Balance of Trade in Goods and Services
	Financial Status (33)	Debt to GNP Ratio
		Total ODA Given or Received as a Percent of GNP
Consumption and Production Patterns (4)	Material Consumption	Intensity of Material Use
	Energy Use	Annual Energy Consumption per Capita
		Share of Consumption of Renewable Energy Resources
		Intensity of Energy Use
	Waste Generation and Management (19-22)	Generation of Industrial and Municipal Solid Waste
		Generation of Hazardous Waste
		Generation of Radioactive Waste
		Waste Recycling and Reuse
	Transportation	Distance Traveled per Capita by Mode of Transport



INSTITUTIONAL

Theme	Sub-theme	Indicator
Institutional Framework (38, 39)	Strategic Implementation Of SD (8)	National Sustainable Development Strategy
	International Cooperation	Implementation of Ratified Global Agreements
Institutional Capacity (37)	Information Access (40)	Number of Internet Subscribers per 1000 Inhabitants
	Communication Infrastructure (40)	Main Telephone Lines per 1000 Inhabitants
	Science and Technology (35)	Expenditure on Research and Development as a Percent GDP
	Disaster Preparedness and Response	Economic and Human Loss Due to Natural Disasters



Millennium Declaration

- Adopted by the United Nations General Assembly in 2000 by 189 nations
- Commitment to a set of values and principles
- 8 Millennium Development Goals
- 18 Targets and 48 Indicators to be reported on by member states

(http://millenniumindicators.un.org/unsd/mi/mi_goals.asp)



Millennium Declaration Indicators

Goal 1. Eradicate extreme poverty and hunger

Target 1.

Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day

Indicators

1. Proportion of population below \$1 (PPP) per day (World Bank)
2. Poverty gap ratio (incidence x depth of poverty) (World Bank)
3. Share of poorest quintile in national consumption (World Bank)

Target 2.

Halve, between 1990 and 2015, the proportion of people who suffer from hunger

Indicators

4. Prevalence of underweight children under five years of age (UNICEF - WHO)
5. Proportion of population below minimum level of dietary energy consumption (FAO)

Goal 2. Achieve universal primary education

Target 3.

Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling

Indicators

6. Net enrolment ratio in primary education (UNESCO)
7. Proportion of pupils starting grade 1 who reach grade 5 (UNESCO)
8. Literacy rate of 15-24-year-olds (UNESCO)



Millennium Declaration Indicators

Goal 3. Promote gender equality and empower women

Target 4.

Eliminate gender disparity in primary and secondary education, preferably by 2005, and to all levels of education no later than 2015

Indicators

9. [Ratio of girls to boys in primary, secondary and tertiary education \(UNESCO\)](#)
10. [Ratio of literate women to men of 15- to 24-year-olds \(UNESCO\)](#)
11. [Share of women in wage employment in the non-agricultural sector \(ILO\)](#)
12. [Proportion of seats held by women in national parliament \(IPU\)](#)

Goal 4. Reduce child mortality

Target 5.

Reduce by two thirds, between 1990 and 2015, the under-five mortality rate

Indicators

13. [Under-five mortality rate \(UNICEF - WHO\)](#)
14. [Infant mortality rate \(UNICEF - WHO\)](#)
15. [Proportion of 1-year-old children immunized against measles \(UNICEF - WHO\)](#)



Millennium Declaration Indicators

Goal 5. Improve maternal health

Target 6

Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio

Indicators

16. Maternal mortality ratio (UNICEF - WHO)
17. Proportion of births attended by skilled health personnel (UNICEF - WHO)

Goal 6. Combat HIV/AIDS, malaria and other diseases

Target 7

Have halted by 2015 and begun to reverse the spread of HIV/AIDS

Indicators

18. HIV prevalence among 15-to-24-year-old pregnant women (UNAIDS-UNICEF-WHO)
19. Condom use rate of the contraceptive prevalence rate (UNAIDS, UNICEF, UN Population

Division, WHO)

20. Number of children orphaned by HIV/AIDS (UNICEF-UNAIDS)

Target 8

Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases

Indicators

21. Prevalence and death rates associated with malaria (WHO)
22. Proportion of population in malaria risk areas using effective malaria prevention and treatment measures (UNICEF - WHO)
23. Prevalence and death rates associated with tuberculosis (WHO)
24. Proportion of tuberculosis cases detected and cured under directly observed treatment short course (DOTS) (WHO)



Millennium Declaration Indicators

Goal 7. Ensure environmental sustainability

Target 9.

Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources

Indicators

- 25. Proportion of land area covered by forest (FAO)
- 26. Ratio of area protected to maintain biological diversity to surface area (UNEP-IUCN)
- 27. Energy use (kg oil equivalent) per \$1 GDP (PPP) (IEA, UNSD, World Bank)
- 28. Carbon dioxide emissions (per capita) (UNFCCC, UNSD) and consumption of ozone-depleting CFCs (ODP tons) (UNEP-Ozone Secretariat)
- 29. Proportion of population using solid fuels (WHO)

Target 10.

Halve by 2015 the proportion of people without sustainable access to safe drinking water

Indicators

- 30. Proportion of population with sustainable access to an improved water source, urban and rural (UNICEF - WHO)

Target 11.

By 2020 to have achieved a significant improvement in the lives of at least 100 million slum dwellers

Indicators

- 31. Proportion of urban population with access to improved sanitation (UNICEF - WHO)
- 32. Proportion of households with access to secure tenure (UN-HABITAT)



Millennium Declaration Indicators

Goal 8. Develop a global partnership for development

Indicators for targets 12-15 are given below in a combined list.

Target 12.

Develop further an open, rule-based, predictable, non-discriminatory trading and financial system.

Includes a commitment to good governance, development, and poverty reduction - both nationally and internationally

Target 13.

Address the special needs of the least developed countries.

Includes: tariff and quota-free access for least-developed countries' exports; enhanced programme of debt relief for HIPC's and cancellation of official bilateral debt; and more generous ODA for countries committed to poverty reduction

Target 14.

Address the special needs of landlocked countries and small island developing States (through the Programme of Action for the Sustainable Development of Small Island Developing States and the outcome of the twenty-second special session of the General Assembly)

Target 15.

Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term



Millennium Declaration Indicators

Indicators

Official development assistance

- 33. Net ODA, total and to LDCs, as percentage of OECD/DAC donors' gross national income (OECD)
- 34. Proportion of total bilateral, sector-allocable ODA of OECD/DAC donors to basic social services (basic education, primary health care, nutrition, safe water and sanitation) (OECD)
- 35. Proportion of bilateral ODA of OECD/DAC donors that is untied (OECD)
- 36. ODA received in landlocked countries as proportion of their GNIs (OECD)
- 37. ODA received in small island developing States as proportion of their GNIs (OECD)

Market access

- 38. Proportion of total developed country imports (by value and excluding arms) from developing countries and from LDCs, admitted free of duties (UNCTAD, WTO, WB)
- 39. Average tariffs imposed by developed countries on agricultural products and textiles and clothing from developing countries (UNCTAD, WTO, WB)
- 40. Agricultural support estimate for OECD countries as percentage of their GDP (OECD)
- 41. Proportion of ODA provided to help build trade capacity (WTO, OECD)

Debt sustainability

- 42. Total number of countries that have reached their HIPC decision points and number that have reached their HIPC completion points (cumulative) (IMF - World Bank) (see indicator 43 below)
- 43. Debt relief committed under HIPC initiative, US\$ (IMF - World Bank)
- 44. Debt service as a percentage of exports of goods and services (IMF - World Bank)



Millennium Declaration Indicators

Target 16.

In cooperation with developing countries, develop and implement strategies for decent and productive work for youth

Indicators

45. Unemployment rate of 15- to 24-year-olds, each sex and total (ILO)

Target 17.

In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries

Indicators

46. Proportion of population with access to affordable essential drugs on a sustainable basis (WHO)

Target 18.

In cooperation with the private sector, make available the benefits of new technologies, especially information and communications

Indicators

47. Telephone lines and cellular subscribers per 100 population (ITU)

48. Personal computers in use per 100 population (ITU) and Internet users per 100 population (ITU)

International Environmental Conventions



Name of Convention	Activities	Website
United Nations Framework Convention on Climate Change (UNFCCC)	Greenhouse Gas Emission Inventories and other pollutants.	http://unfccc.int
Vienna Convention for the Protection of the Ozone Layer and Montreal Protocol on Ozone Depleting Substances	Production and consumption of ozone depleting substances. Substances covered: CFCs, HCFCs, methyl chloroform, carbon tetrachloride, methyl bromide.	http://www.unep.org/ozone/
Basel Convention on the Control of Transboundary Movements of Hazardous Waste and their Disposal	Hazardous and other waste. Topics covered: generation, import, export, and transition of hazardous and other wastes.	http://www.basel.int/
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)	International wildlife trade. Topics covered: international data on trade of wild flora and fauna, some legislative, regulatory and administrative measures to enforce the convention.	http://www.cites.org
Convention on Biological Diversity (CBD)	First global agreement on the conservation and sustainable use of biological diversity.	http://www.biodiv.org/
United Nations Convention to Combat Desertification (UNCCD)	International convention to combat desertification in countries experiencing serious drought and/or desertification, particularly in Africa.	http://www.unccd.int/main.php
United Nations Convention on the Law of the Sea (UNCLOS)	Establishes rights and obligations relating to navigation, the conservation and use of marine resources, the protection of marine biodiversity, and the protection of the marine environment.	http://www.unclos.com/
Convention on Wetlands of International Importance (Ramsar Convention)	All aspects of wetland conservation and use. Conservation and wise use of wetlands and their resources.	http://www.ramsar.org/



Challenges in the compilation of environmental statistics and indicators

- Lack of basic data and/or resources
- Indicator is not always relevant
- Lack of coordination at the national and international levels
- Politically sensitive data
- Different definitions and/or classifications
- Lack of adequate time series
- Duplicate data sources and/or conflicting values