



# Reaching Globally Agreed Environmental Goals

## What do indicators tell us?

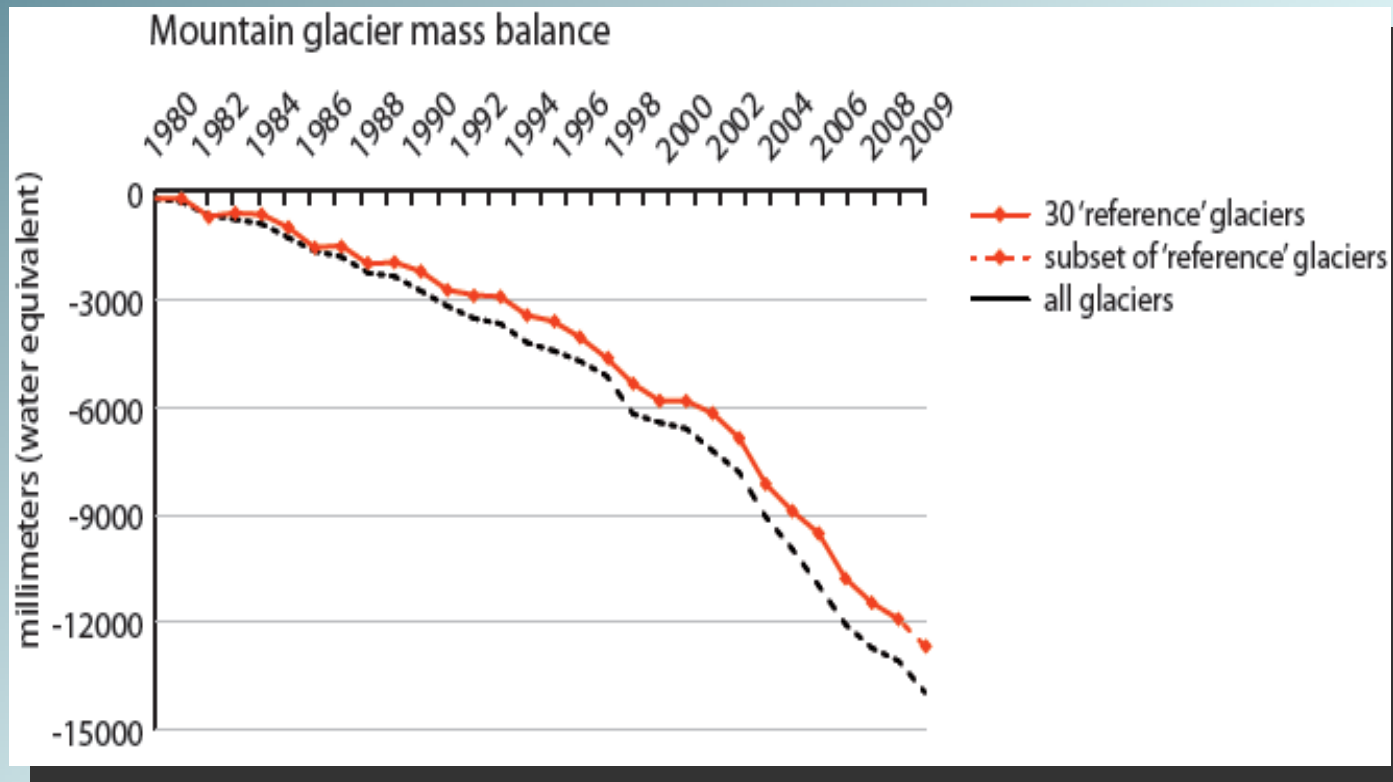


**By Fatoumata Keita-Ouane**  
**CSD-19, New York, May 2011**



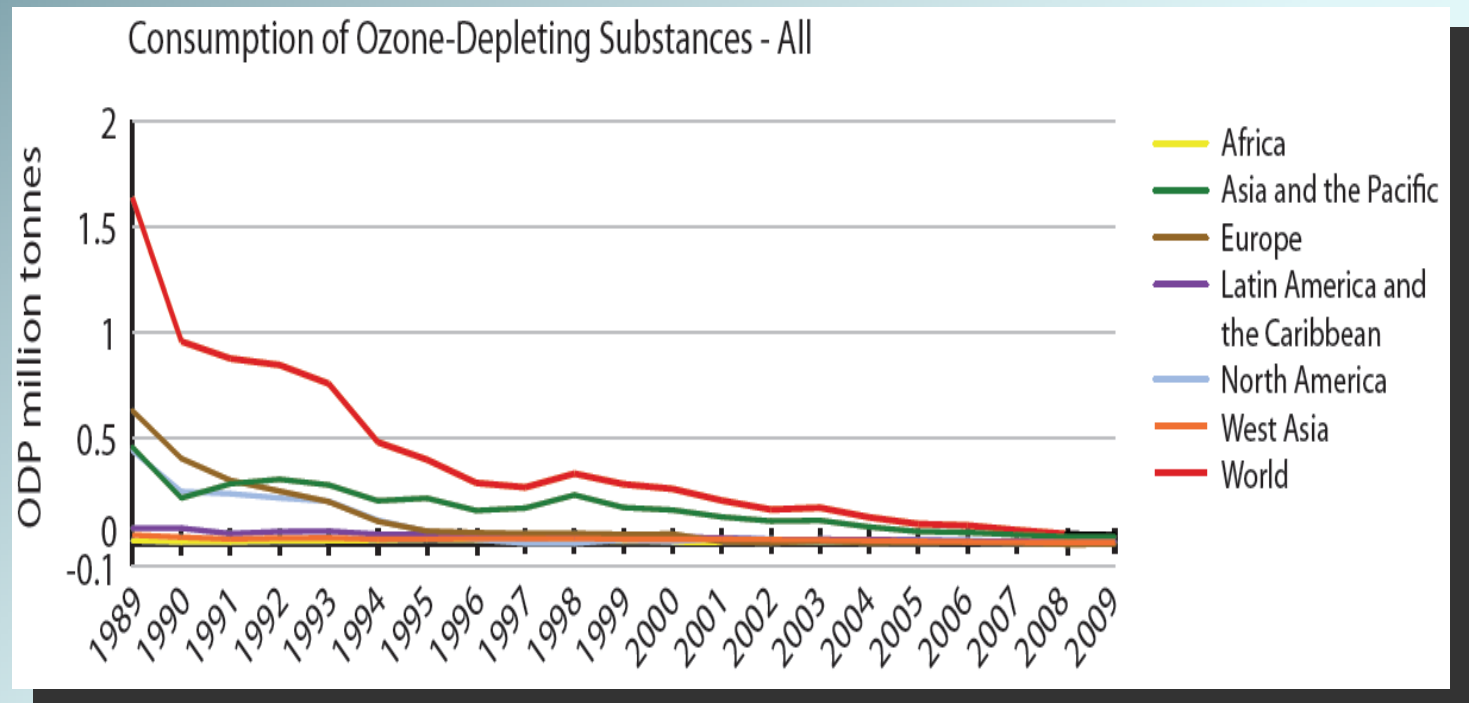
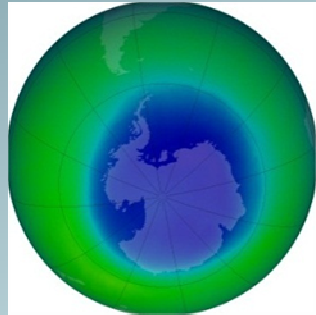
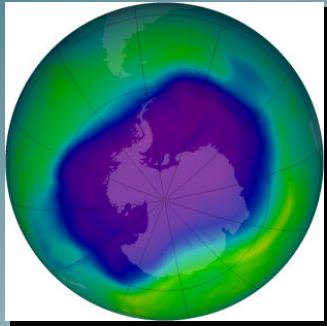
## ***What are indicators?***

Indicators are measures - generally quantitative - that can be used to illustrate and communicate complex phenomena in a simple way, including trends and progress over time.



***Indicators can help tell if a problem is getting better or worse...***

For example, the rate of melting of mountain glaciers tells us something about atmospheric warming



**...Indicators can also help tell if policy measures appear to be having an effect.**

Reduced production of ozone depleting substances indicates that countries are successfully phasing them out.

# Approach to undertaking an indicator-based update of the state and trends of the global environment

The indicator-based update of the state and trends of the global environment in Part 1 will:

- **present** past and current global and, wherever possible regional, **trends** of the drivers of environmental change, their **impacts on and the state** of the environment as well as responses to the changes through easily understandable, scientifically sound and policy relevant indicators;
- indicate and **track the responses made** to address certain environmental challenges by looking at the progress made in meeting related internationally-agreed goals;
- help **identify the sectors and regions most critical** for speeding up achievement of the internationally-agreed goals; and
- **highlight the areas where there are gaps** in monitoring, data collection and dissemination, and where uncertainties are high.

# What is needed?

To prepare the indicator-based update it is necessary to have:

- Inventory of the **availability of the data variables** necessary for developing indicators, as well as an inventory of other necessary information.
  - GEO Data Portal which provides data on most topics as derived from authoritative sources, checked, compiled and aggregated to UNEP regions (with hundreds of data variables from the World Database on Protected Areas, IUCN Red List, World Development Indicators, FAOSTAT, MEA Secretariats, UNSD, OECD.Stat etc etc).
  - Other global and regional data portals and/or gateways (for example UNEP/GEO regional Data Portals, and data developed under published global and regional assessment processes, studies, reports, relevant international documents, etc).
- Develop relevant **best available indicators** and prepare a short list.
- **Screening procedure** needs to be implemented to select a narrow list of indicators,
- **Analyses of needs and gaps**, including those relevant to internationally agreed goals
- Ways of **presentation and visualization** of indicator-based information in the assessment.

# **Examples of indicator based SOE**



## **UN Millennium Development Goals**

Tracking progress towards achieving the millennium development goals, in particular Goal 7 on environmental sustainability.

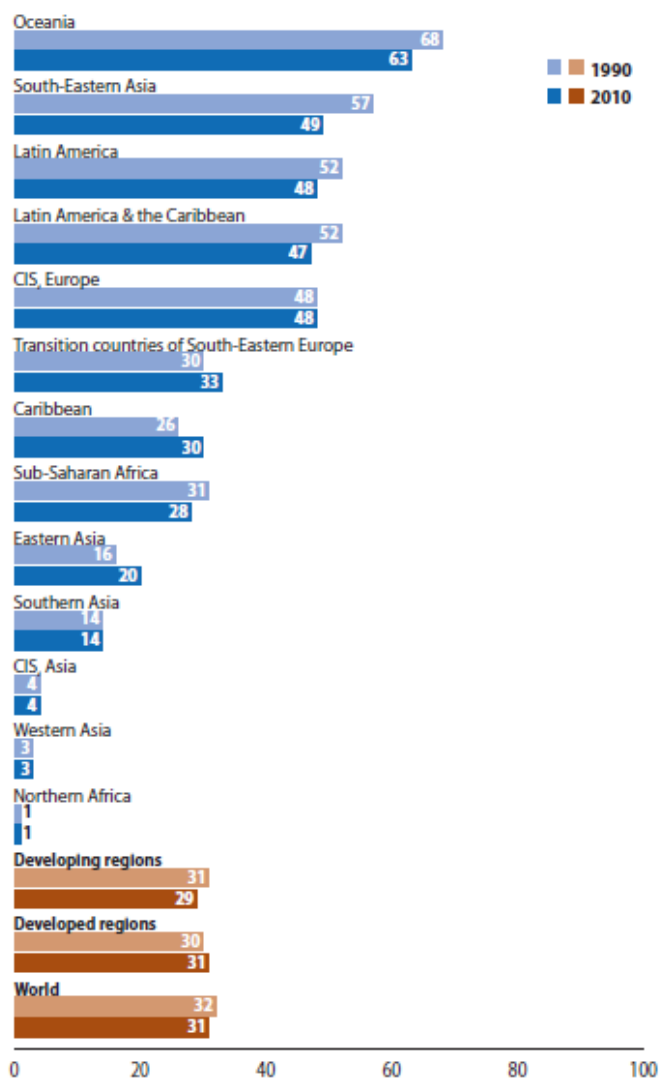


# UN MDG 7

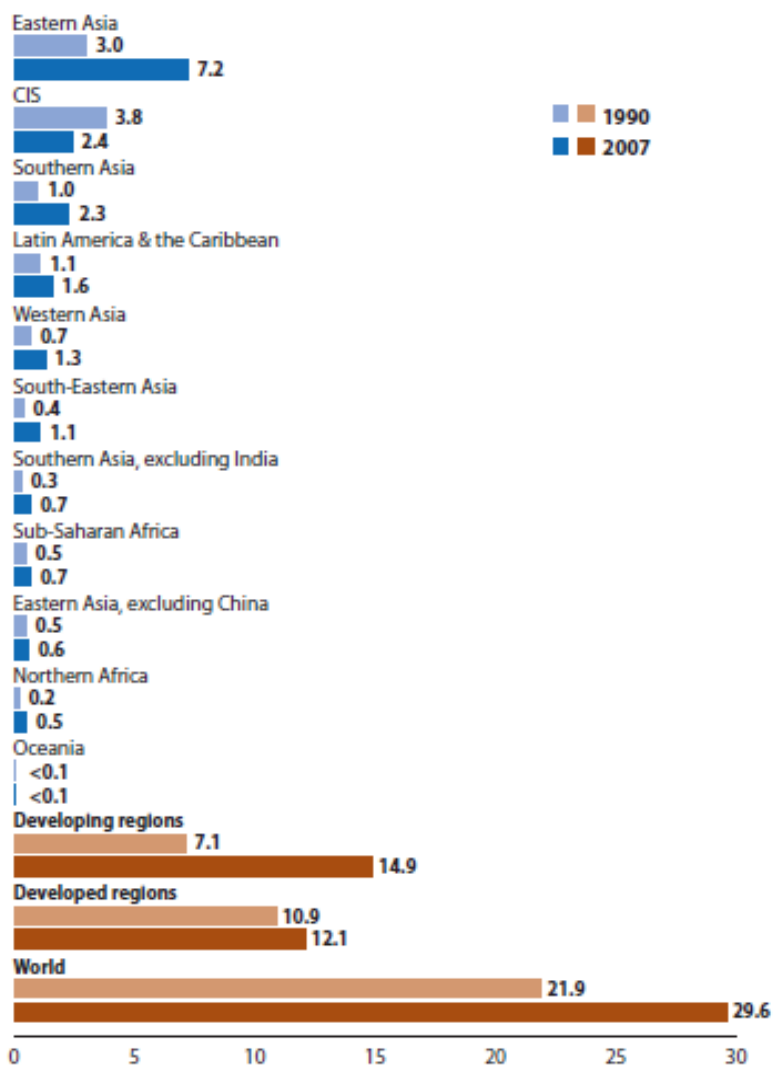
Goals and Targets (from the Millennium Declaration)	Indicators for monitoring progress
Target 7.A: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources	7.1 Proportion of land area covered by forest 7.2 CO <sub>2</sub> emissions, total, per capita and per \$1 GDP (PPP) 7.3 Consumption of ozone-depleting substances 7.4 Proportion of fish stocks within safe biological limits 7.5 Proportion of total water resources used
Target 7.B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss	7.6 Proportion of terrestrial and marine areas protected 7.7 Proportion of species threatened with extinction
Target 7.C: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation	7.8 Proportion of population using an improved drinking water source 7.9 Proportion of population using an improved sanitation facility
Target 7.D: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers	7.10 Proportion of urban population living in slums

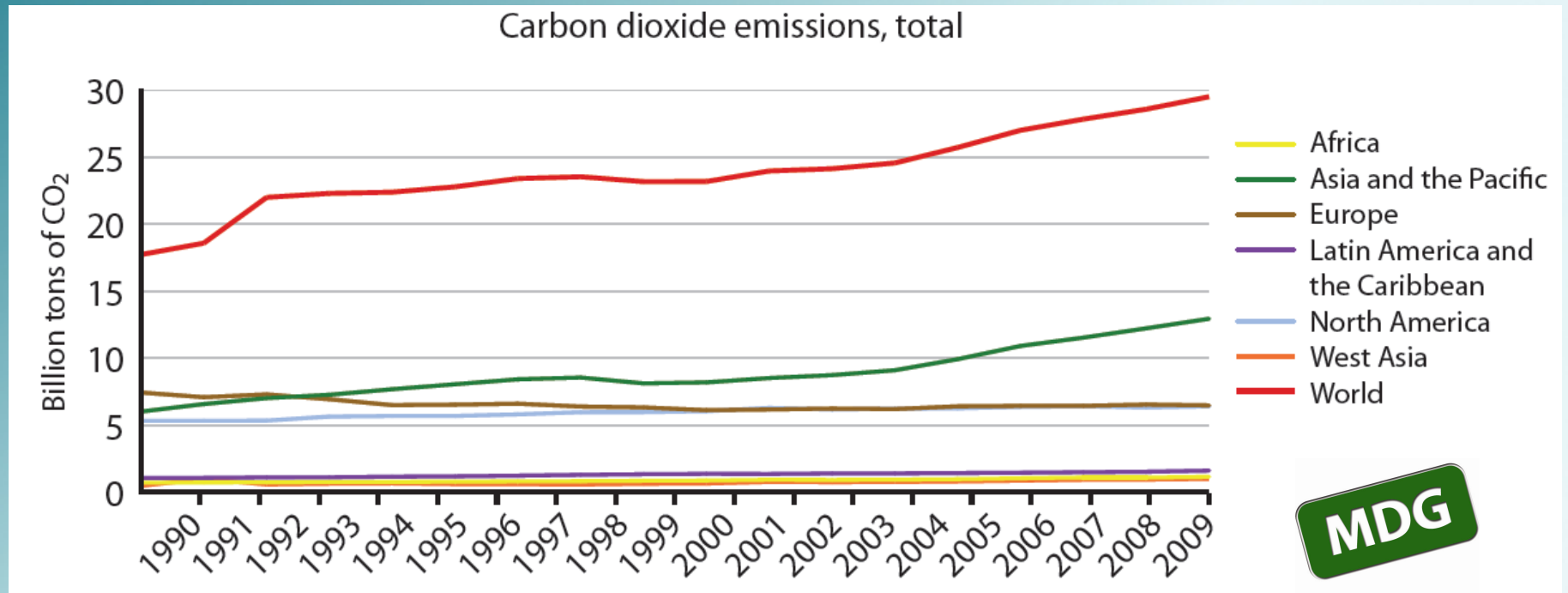
## Target 7.A: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources

Forested area as percentage of land area, 1990 and 2010 (Percentage)



Emissions of carbon dioxide (CO<sub>2</sub>), 1990 and 2007 (Billions of metric tons)



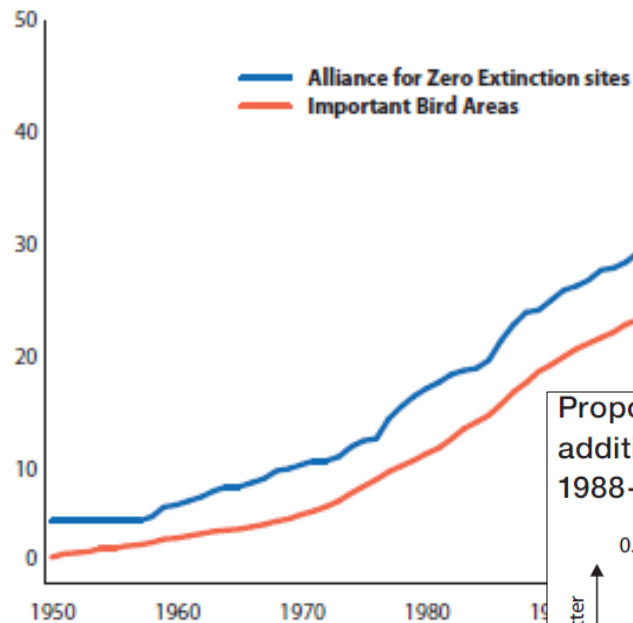


## ***Carbon dioxide emissions***

Carbon dioxide emissions expressed in billions of tonnes CO<sub>2</sub>, 1989-2007

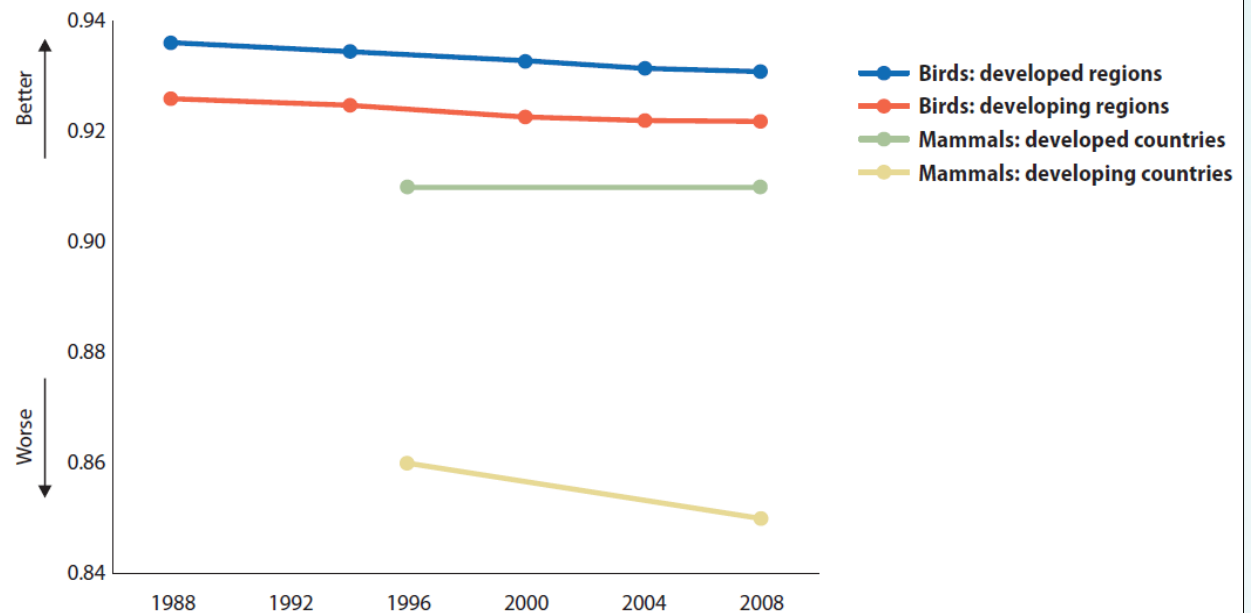
## Target 7.B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss

Proportion of key biodiversity areas protected, 1950-2007  
(Percentage)

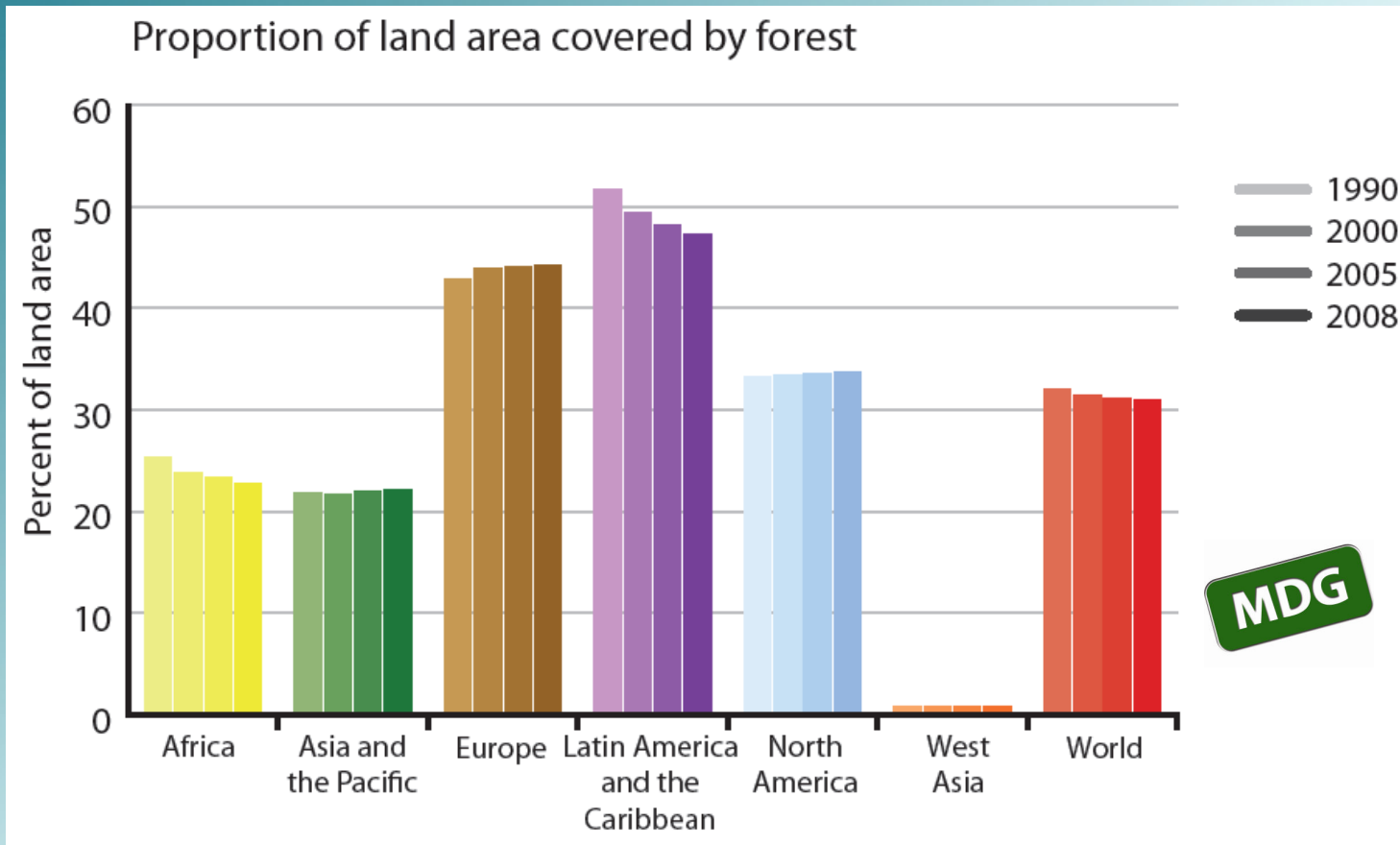


Note: Data refer to 10,993 Important Bird Areas (IBAs)

Proportion of species expected to remain extant in the near future in the absence of additional conservation action (IUCN Red List Index of species survival for birds, 1988-2008, and mammals, 1996-2008)

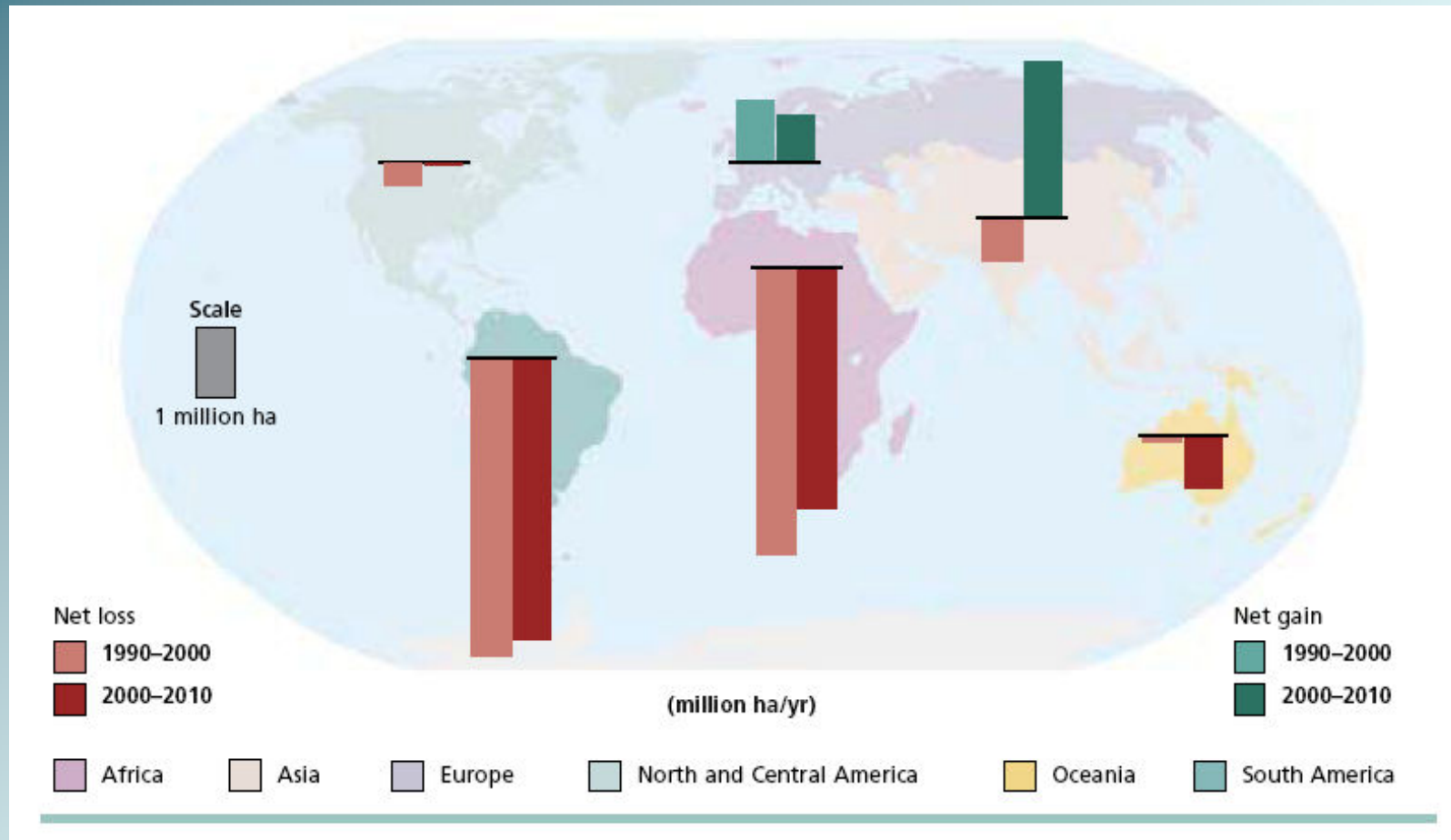


Note: A Red List Index value of 1.0 means that all species are categorized as of 'least concern', and hence none are expected to go extinct in the near future. A value of zero indicates that all species have gone extinct.



## ***Forest cover***

Proportion of land area covered by forests in 1990, 2000, 2005 and 2010

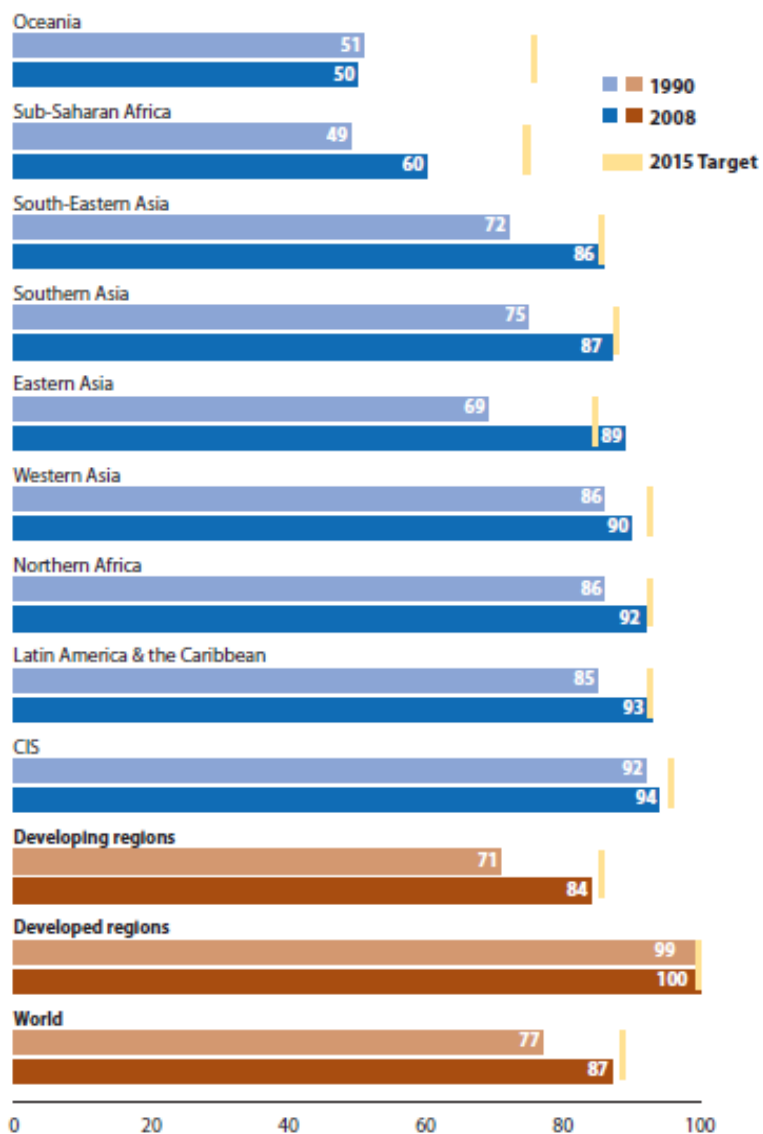


## Annual change in forest area by region (million hectares), 1990-2010

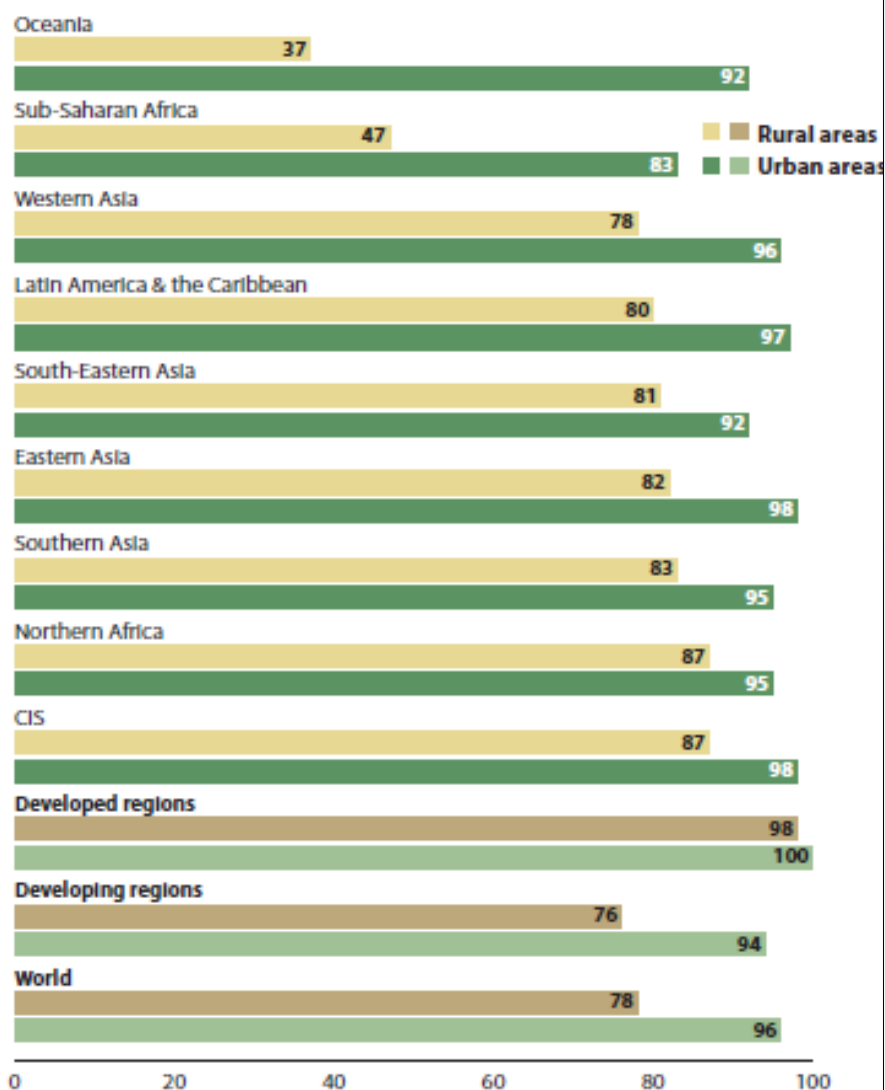
Whereas there are positive trends in Europe and Asia, the biodiverse tropical forests in Latin America and Africa continue to show significant net losses of forest area.

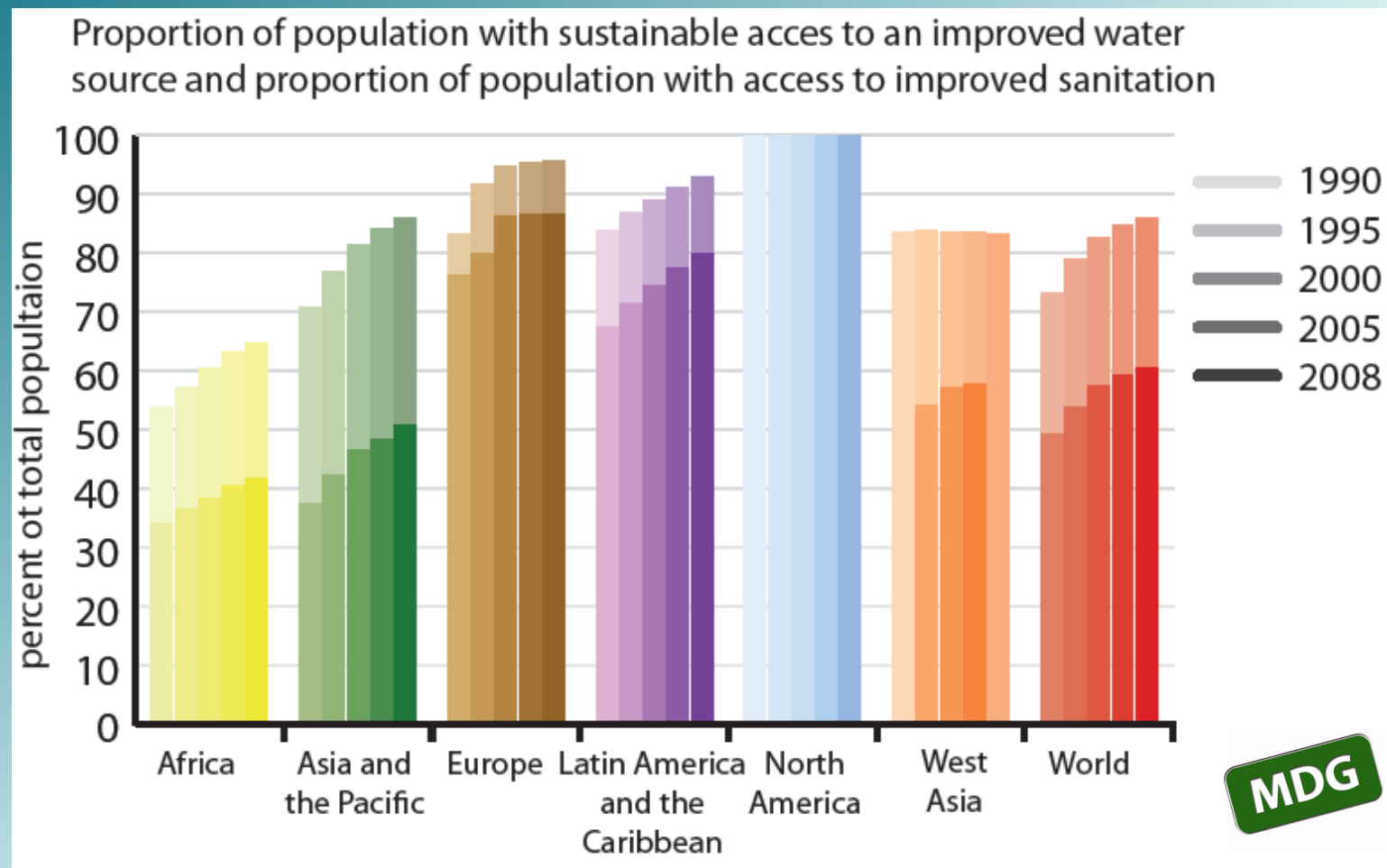
## Target 7.C: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation

Proportion of population using an improved water source, 1990 and 2008 (Percentage)



Proportion of population using an improved water source, rural and urban areas, 2008 (Percentage)



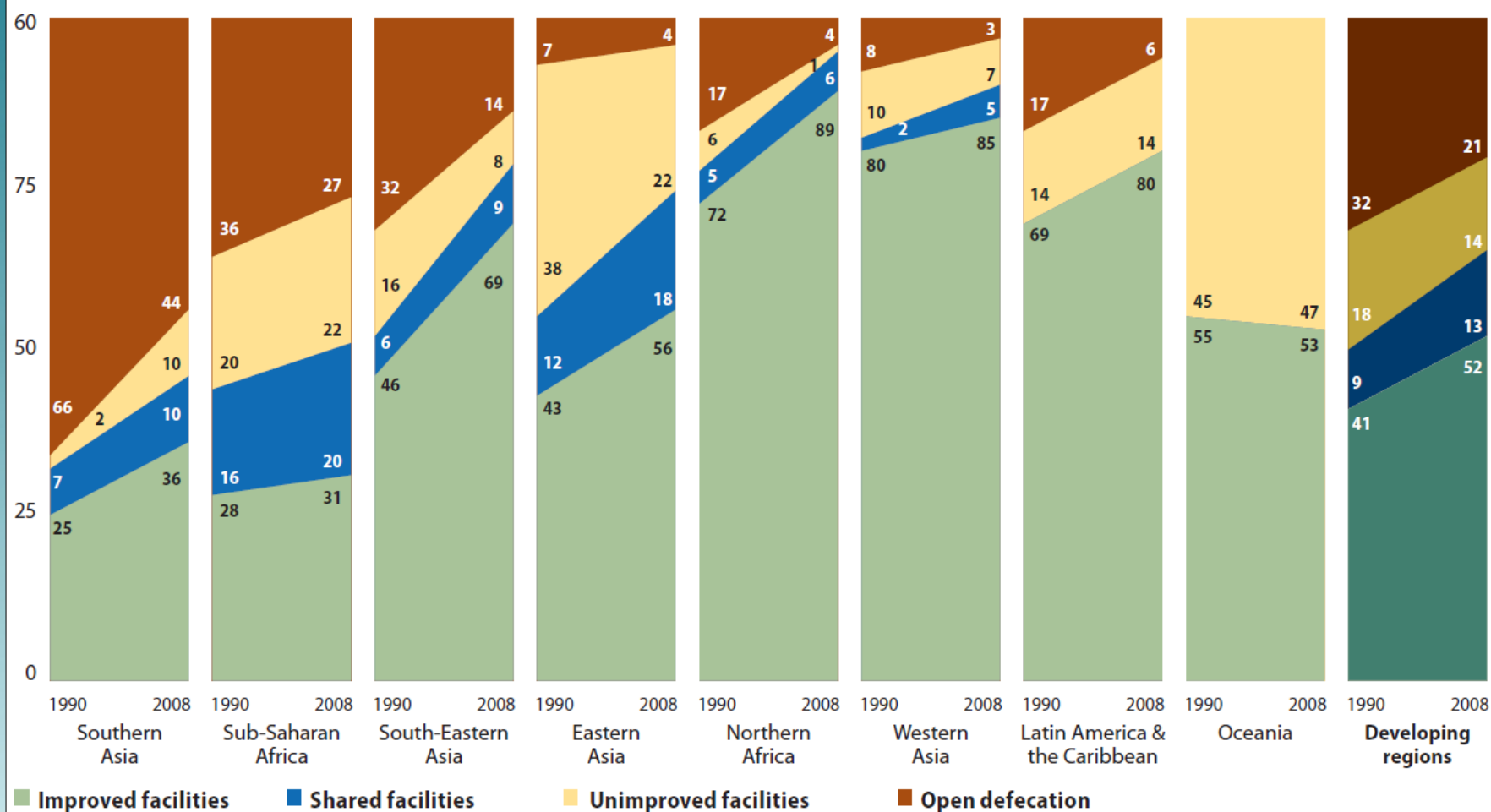


## ***Access to clean water and sanitation***

Improved drinking water and sanitation coverage as a percentage of the total population.

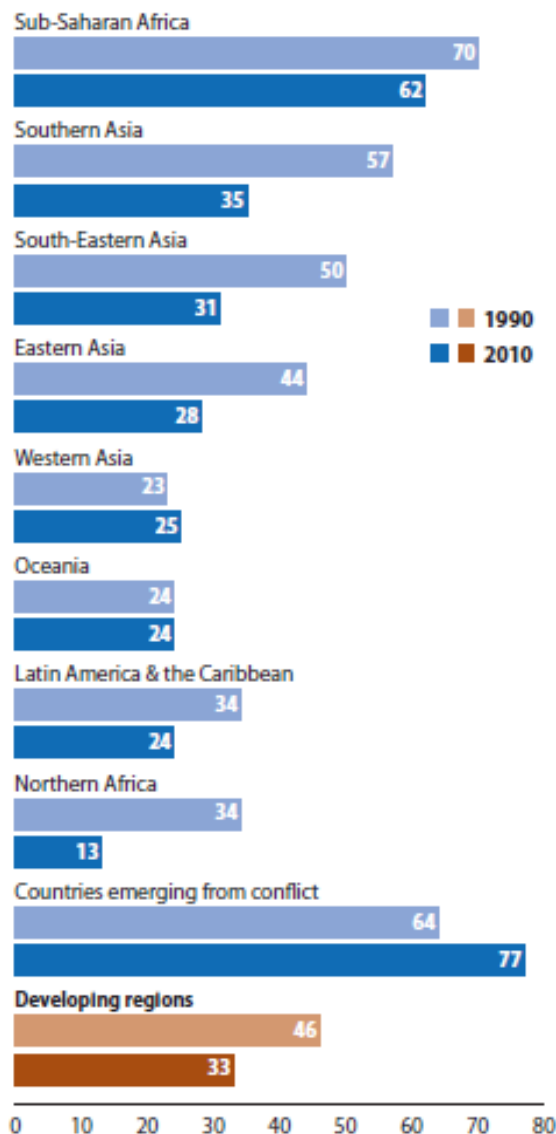


Proportion of population by sanitation practices, 1990 and 2008 (Percentage)



Note: Data for Latin America & the Caribbean and Oceania are not sufficient to provide regionally representative estimates of the proportion of the population who use shared sanitation facilities.

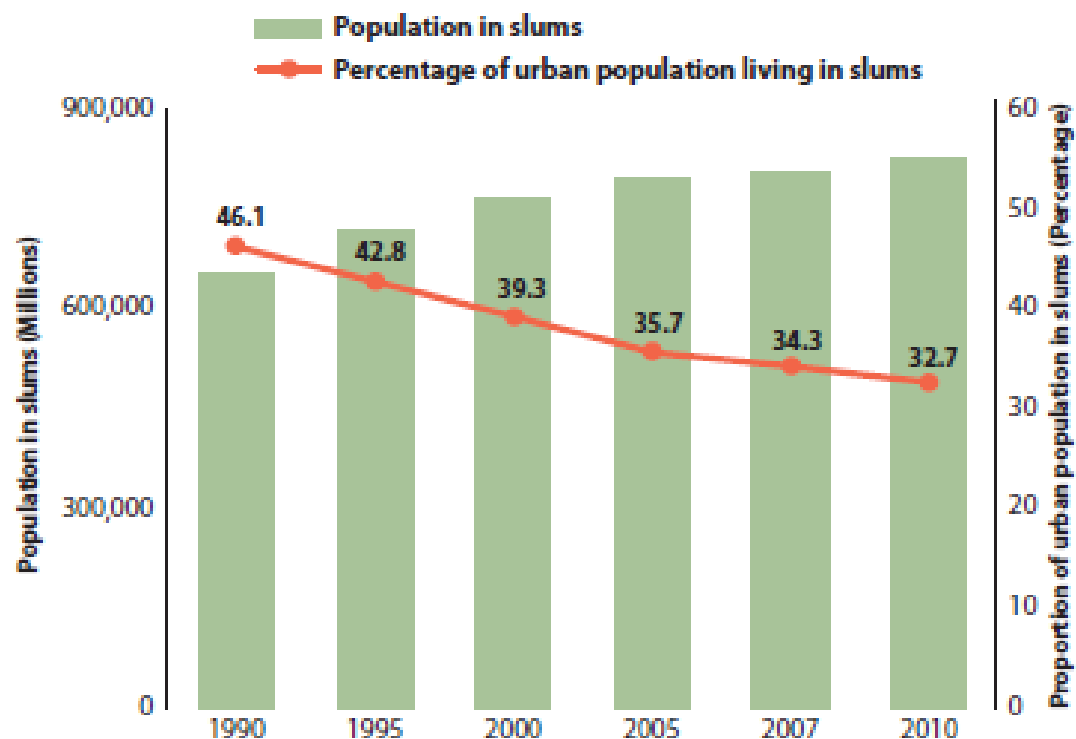
### Proportion of urban population living in slum areas, 1990 and 2010 (Percentage)



Note: Countries emerging from conflict included in the aggregate figures are: Angola, Cambodia, Central African Republic, Chad, Democratic Republic of the Congo, Guinea-Bissau, Iraq, Lao People's Democratic Republic, Lebanon, Mozambique, Sierra Leone, Somalia and Sudan.

**Target 7.D: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers**

### Population living in urban slums and proportion of urban population living in slums, developing regions, 1990-2010



# Convention on Biological Diversity: 2010 Indicators

Status and trends of the components of biological diversity	
Indicators for immediate testing	Possible indicators for development
<ul style="list-style-type: none"> <li>▪ Trends in extent of selected biomes, ecosystems, and habitats</li> <li>▪ Trends in abundance and distribution of selected species</li> <li>▪ Coverage of protected areas</li> <li>▪ Change in status of threatened species</li> <li>▪ Trends in genetic diversity of domesticated animals, cultivated plants, and fish species of major socioeconomic importance</li> </ul>	
Related indicators for immediate testing	Possible related indicators for development
<ul style="list-style-type: none"> <li>▪ Area of forest, agricultural and aquaculture ecosystems under sustainable management</li> <li>▪ Nitrogen deposition</li> <li>▪ Trends in invasive alien species</li> <li>▪ Marine Trophic Index</li> <li>▪ Water quality of freshwater ecosystems</li> <li>▪ Connectivity fragmentation of ecosystems</li> <li>▪ Official development assistance provided in support of the Convention</li> </ul>	<ul style="list-style-type: none"> <li>▪ Proportion of products derived from sustainable sources</li> <li>▪ Trophic integrity of other ecosystems</li> <li>▪ Biodiversity for food and medicine</li> <li>▪ Indicator of technology</li> </ul>
Sustainable use	
Indicators for immediate testing	Possible indicators for development
<ul style="list-style-type: none"> <li>▪ Area of forest, agricultural and aquaculture ecosystems under sustainable management</li> </ul>	<ul style="list-style-type: none"> <li>▪ Proportion of products derived from sustainable sources</li> <li>▪ Ecological footprint and related concepts</li> </ul>
Related indicators for immediate testing	Possible related indicators for development
<ul style="list-style-type: none"> <li>▪ Trends in extent of selected biomes, ecosystems, and habitats</li> <li>▪ Trends in abundance and distribution of selected species</li> <li>▪ Change in status of threatened species</li> <li>▪ Trends in genetic diversity of domesticated animals, cultivated plants, and fish species of major socioeconomic importance</li> <li>▪ Nitrogen deposition</li> <li>▪ Marine Trophic Index</li> <li>▪ Water quality of freshwater ecosystems</li> <li>▪ Connectivity fragmentation of ecosystems</li> <li>▪ Status and trends of linguistic diversity and numbers of speakers of indigenous languages</li> <li>▪ Official development assistance provided in support of the Convention</li> </ul>	<ul style="list-style-type: none"> <li>▪ Trophic integrity of other ecosystems</li> <li>▪ Incidence of human-induced ecosystem failure</li> <li>▪ Health and well-being of communities who depend directly on local ecosystem goods and services</li> <li>▪ Biodiversity for food and medicine</li> <li>▪ Other indicator of the status of indigenous and traditional knowledge</li> <li>▪ Indicator of access and benefit-sharing Indicator</li> </ul>