

Introduction to Environment and Environment Audit



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Broad issues to be covered in the presentation

1. Global trends & concerns related to environment
2. Understanding of environment audit
3. Environment audit and organisations



What is “Environment”

- Surroundings in which an organization operates
 - includes air, water, land, natural resources, flora, fauna, humans and their interrelation.
- It is the combination of external physical conditions that affect and influence the growth, development and survival of organisms.

Environment degradation

- *Environment degradation* occurs when
 - nature's resources (such as trees, habitat, earth, water and air) are being consumed faster than nature can replenish them,
 - when pollution results in irreparable damage done to the environment or
 - when human beings destroy or damage ecosystems in the process of development.
- Environmental degradation can take many forms like climate change, desertification, deforestation and extinction of species.

1. Global Environmental Trends & Concerns



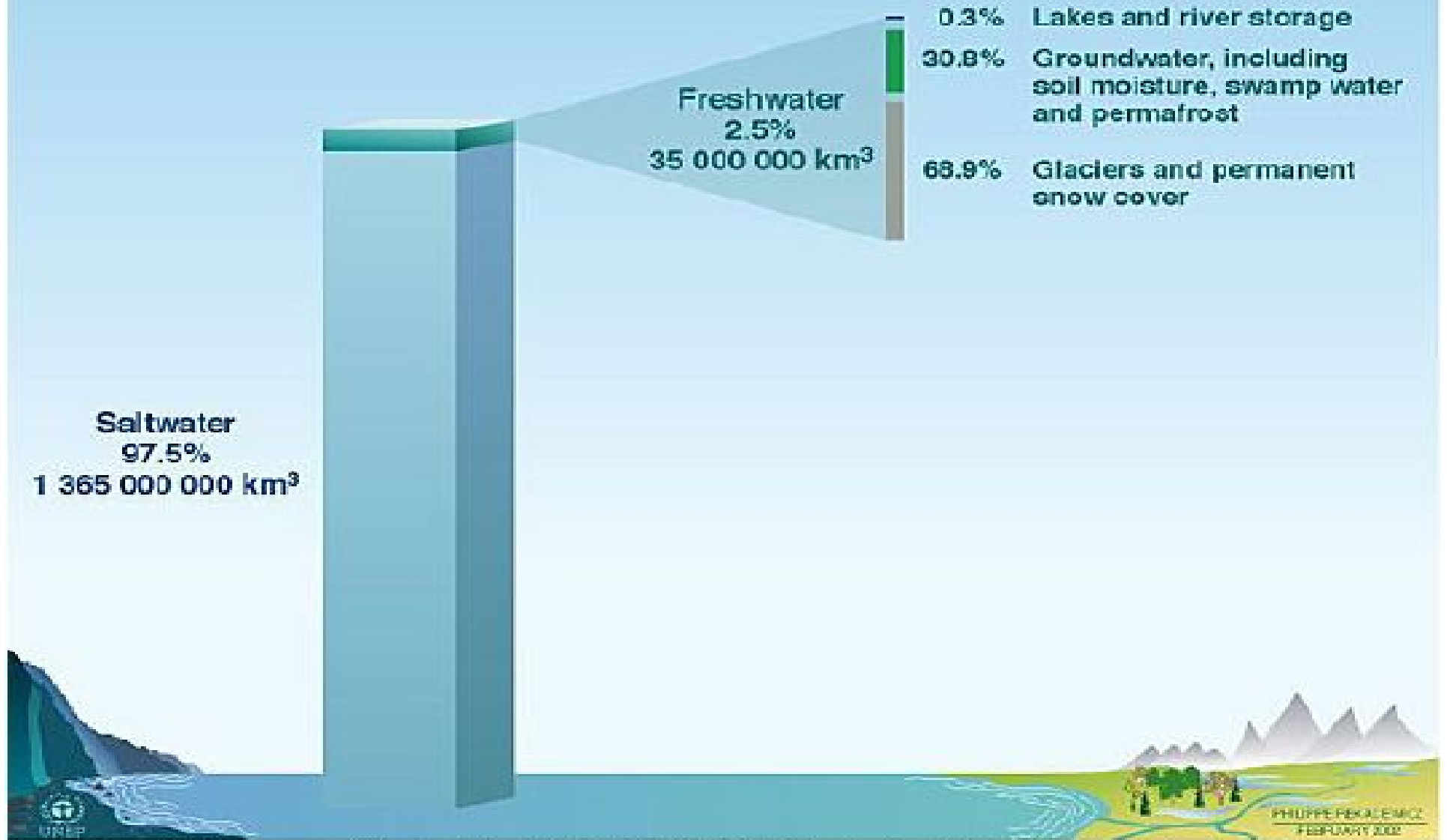
Issues

- Water Pollution
- Land Degradation
- Deforestation
- Destruction of biodiversity
- Air pollution
- Climate Change
- Over Exploitation of resources



A World of Salt

Total Global Saltwater and Freshwater Estimates



Source: Igor A. Shiklomanov, State Hydrological Institute (SHI, St. Petersburg) and United Nations Educational, Scientific and Cultural Organisation (UNESCO, Paris), 1999.

PHILIPPE PEKALENICKI
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State of the Environment

Fresh Water, Marine & Coastal Areas

- 1.1 billion people lack access to safe drinking water & 2.4 billion people lack access to sanitation
- By 2025, two-thirds of the world's population may be living in countries that face serious water shortages
- About a third of all coral reefs are expected to vanish in the next 30 years
- 70% of domestic untreated wastewater is discharged into India's rivers and lakes

Land – Global Outlook



Land – Global Outlook

- Overgrazing – 20% to 35% of pasture and grasslands damaged
- Soil salinization and water logging affect about 40 million hectares of land globally per annum.
- More than 250 million people are directly affected by desertification.
- Extraction of crops, bio-matter etc, each year exceeds what the nature can restore, estimated deficit 20%.

Forests – Global



Forests – Global

- More than 220 million hectares of tropical forests were destroyed during 1975–90, mainly for food production
- The annual rate of natural forest loss is estimated at over 14.6 million hectares (an area the size of Nepal)
- Deforestation of tropical forests is almost 1 per cent annually

State of the Environment (Global)

Biodiversity



State of the Environment (Global)

Biodiversity

- More than 11,000 species of animals and plants are known to be threatened with extinction.
- The current species extinction rate is estimated to be between 1,000 and 10,000 times higher than the natural rate

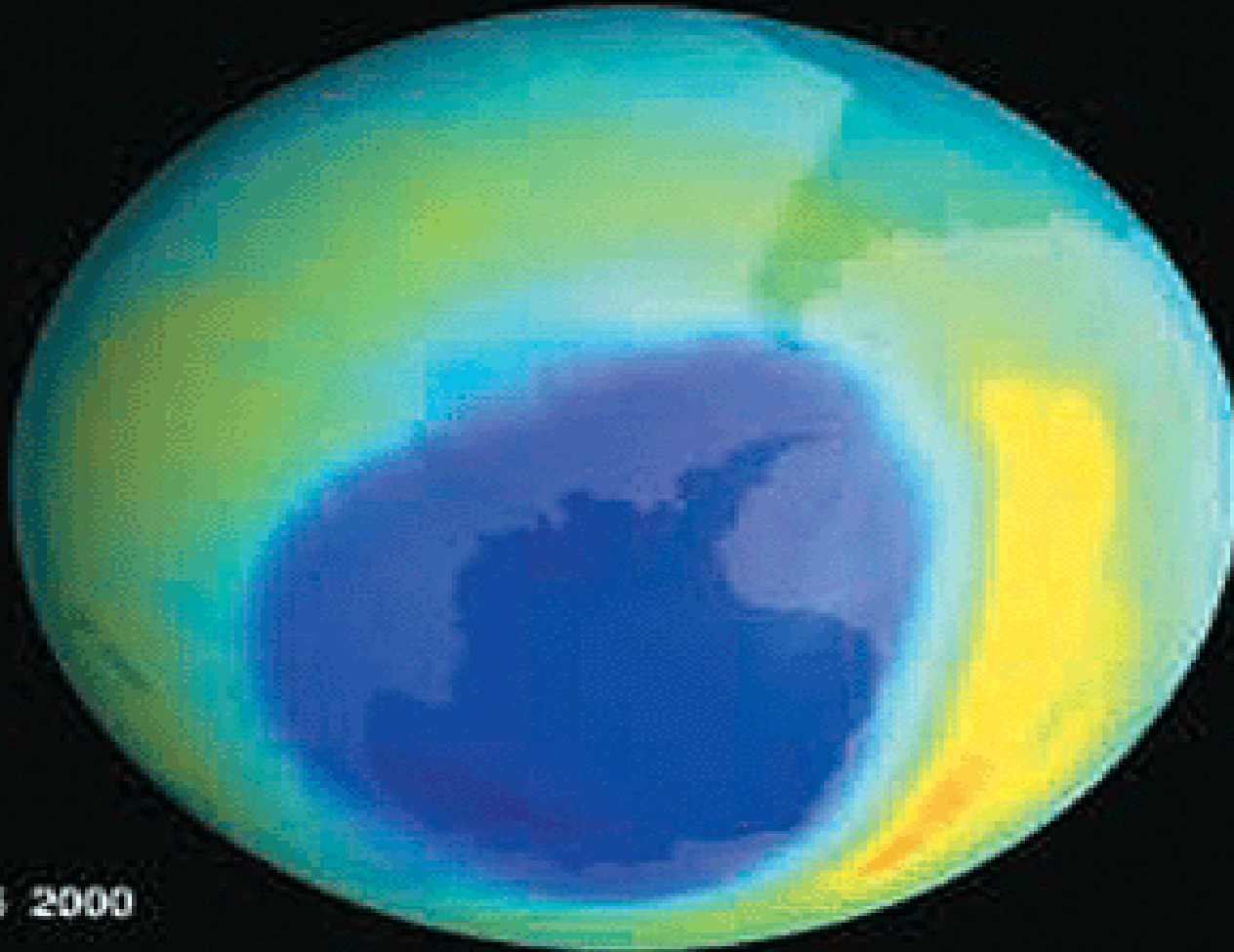
Air Pollution



- 50 % of the population in Eastern China and 38% of people in Northern India, are affected by high concentrations of pollutants, far exceeding even the weakest of World Health Organization standards
- Primary Pollutants which together contribute to air Pollution are:
 - Carbon Monoxide (CO)
 - Sulphur Dioxide (SO₂)
 - Nitrogen Oxides (NOX)
 - Suspended Particulate Matter (SPM)

State of the Environment

Atmosphere - Global



Sep 6 2000

Global climate change

- Our planet is warming faster than at any time in the past 10,000 years
- This greenhouse effect is driven by gasses like CO₂, which have reached their highest level for more than 400,000 years
- There is a need to reduce emissions of CO₂

Direct observations of recent climate change



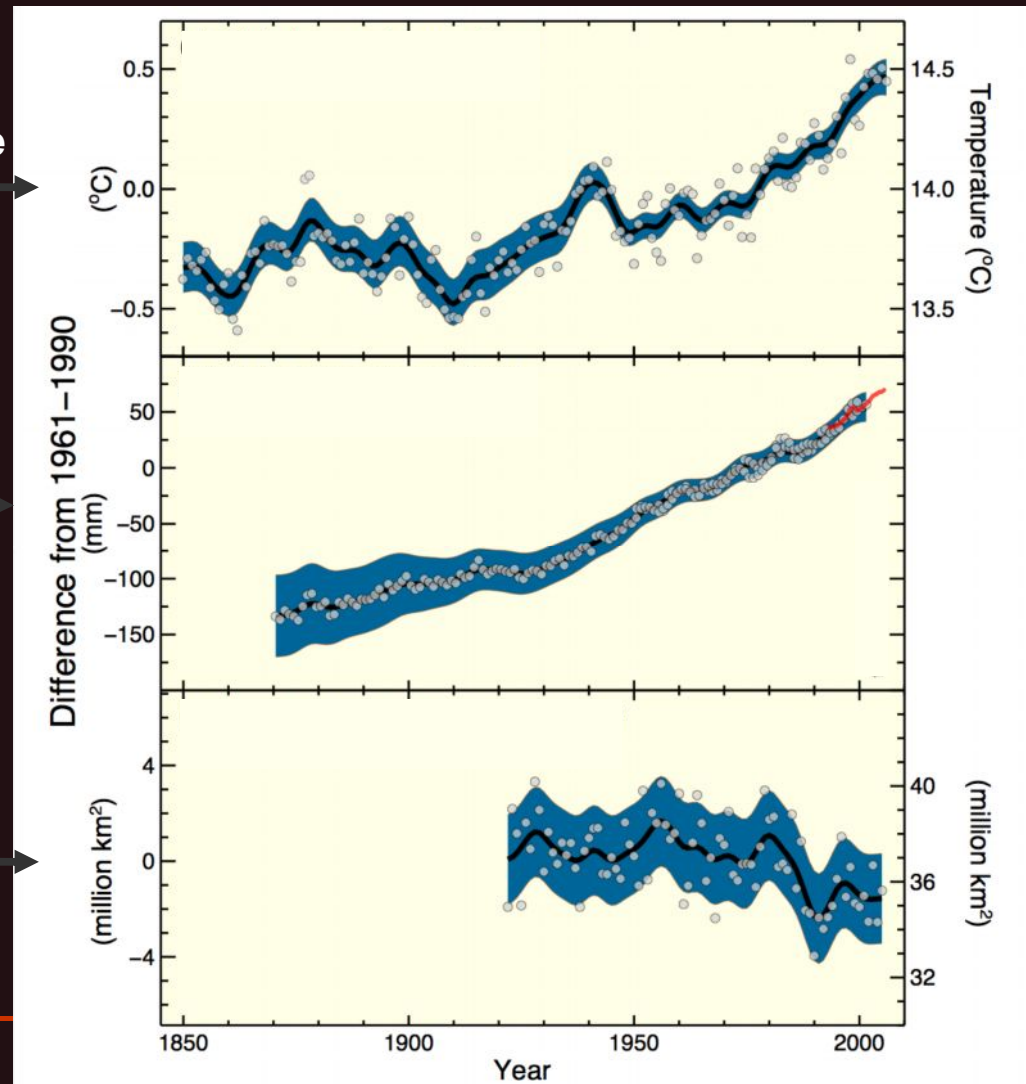
Global average temperature



Global average sea level



Northern hemisphere snow cover



Coastal settlements most at risk



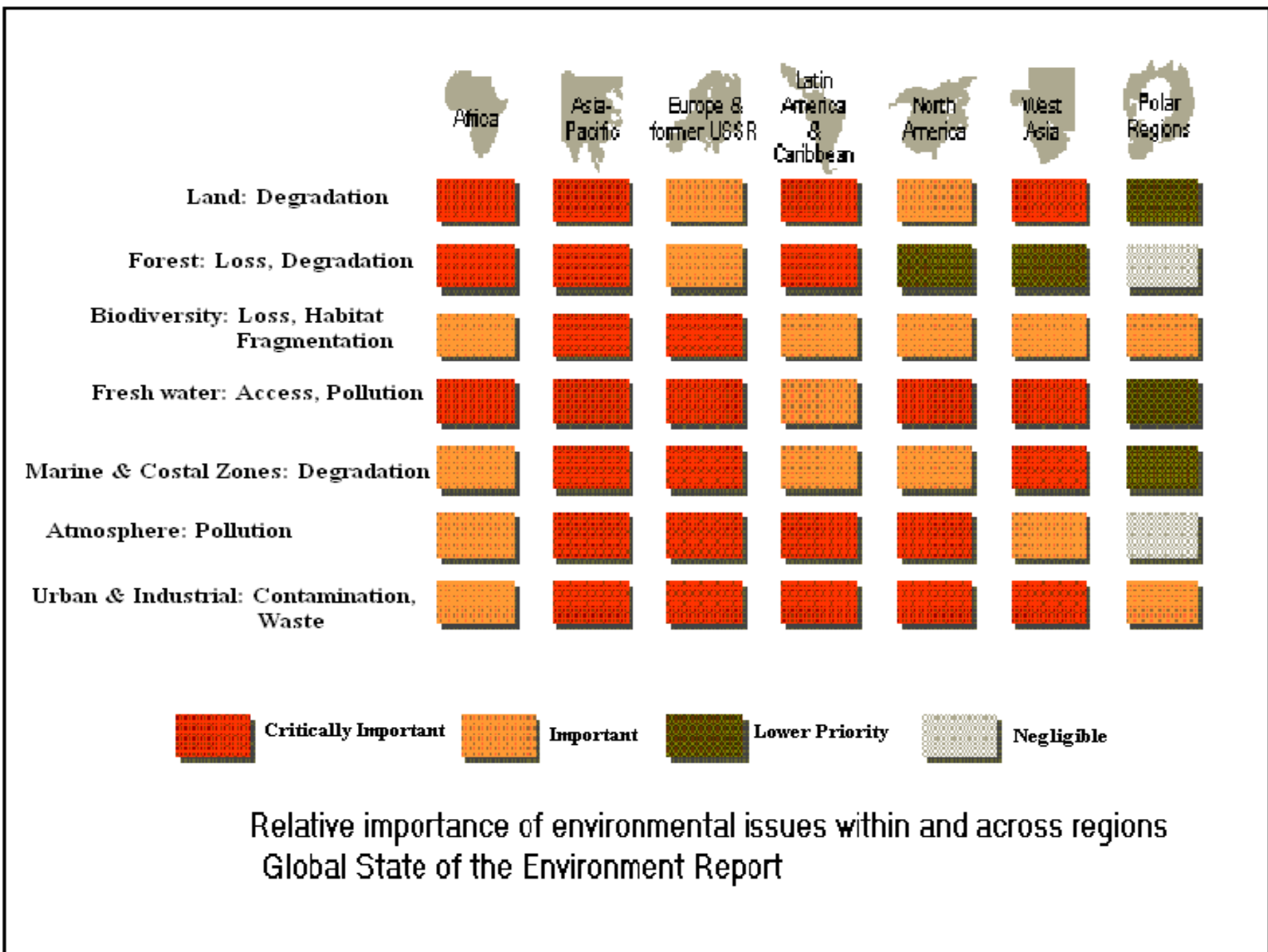
Over-exploitation



Photo: IUCN

Over-exploitation

- World population more than 6 billion people
- Life on Earth is increasingly being altered by humans
- Old ways of harvesting are being replaced by intensive technologies often without controls to prevent over-harvesting
- Unsustainable use: the use of natural resources in a way and at a rate that lead to the loss of biodiversity



Role of the government in environmental issues

- New role of Government as regulator
- Environmental legislation and regulations
- Standard-setting
- Oversight and monitoring
- Licensing and inspections
- Enforcement, sanction and penalties

2. Environmental Audit

- According to World Bank, a methodical examination of environmental information about an organization, a facility, or a site, to verify whether, or to what extent, they conform to specified audit criteria.
- Criteria for examination may be based on local, national or global environmental standards

Types of environment audit

1. Audits of Government monitoring of compliance with environmental laws
2. Audits of the performance of Government environmental programmes
3. Audits of the environmental impact of other Government programmes
4. Audits of environmental management systems
5. Environmental assessment of proposed environmental policies and programmes

Environmental Management Standards (EMS)

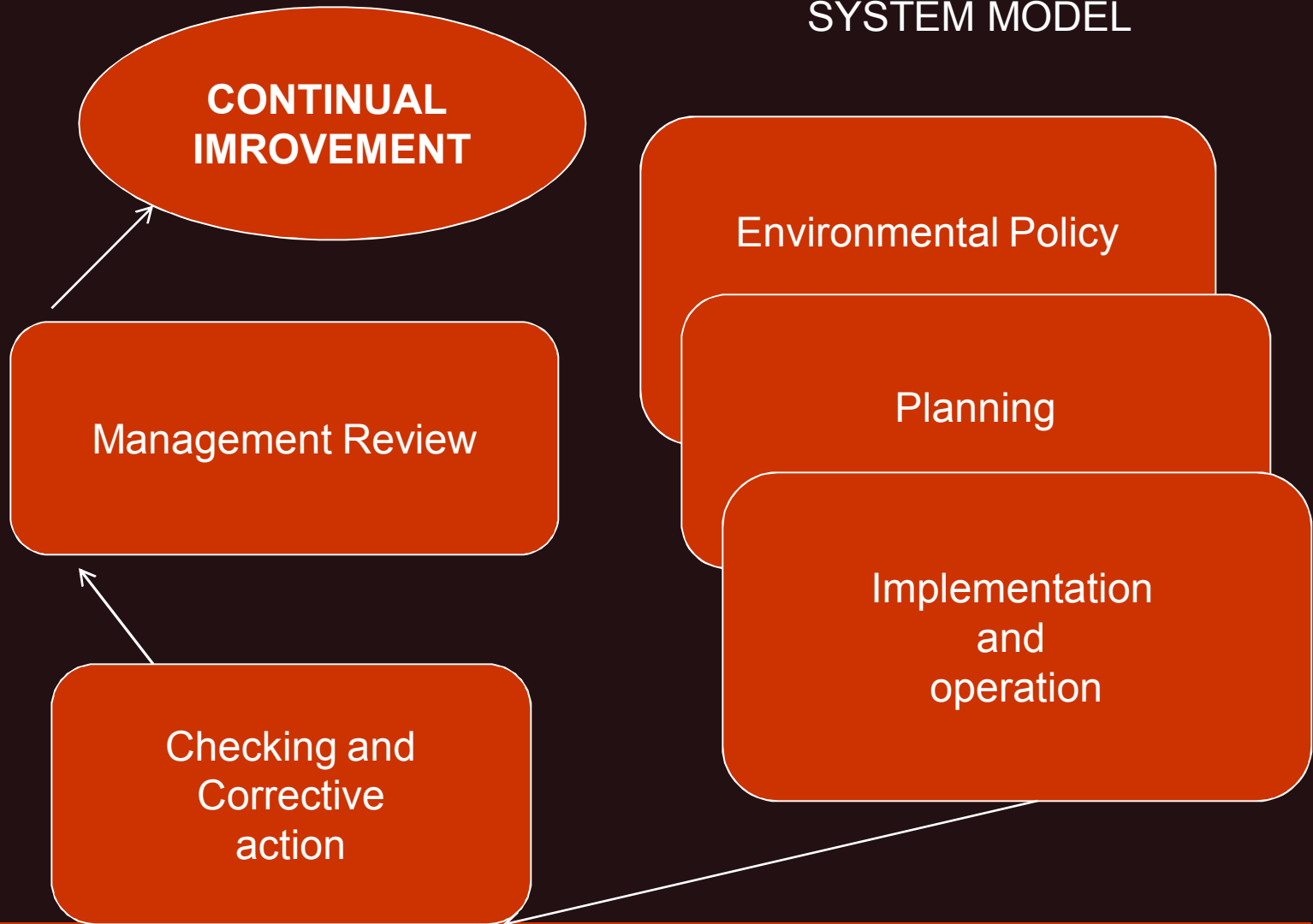
- An assessment of the nature and extent of harm (or risk of harm) to the environment posed by an industrial process or activity, waste, substance or noise
- Organisations are increasingly using a tool called Environment Management System (EMS) for this purpose
- EMS is a structured system to identify the causes of environmental problems and minimize them. For example;
 - It is cheaper to prevent the leakage or spill in the first place than clean up afterwards in addition to losing valuable material
 - It is more cost effective to prevent pollution than managing it after it has been generated

- Based on the request of the UN Business Council on Sustainable Development, the basic concept of ISO 9000 series of standards for quality management system were adapted
- This led to issue of ISO 14000 series of standards in September 1996
- ISO 14001 requires an organisation to implement and maintain a management system that will enable an organisation to improve environmental performance on continual basis

Environment Impact Assessment (EIA)

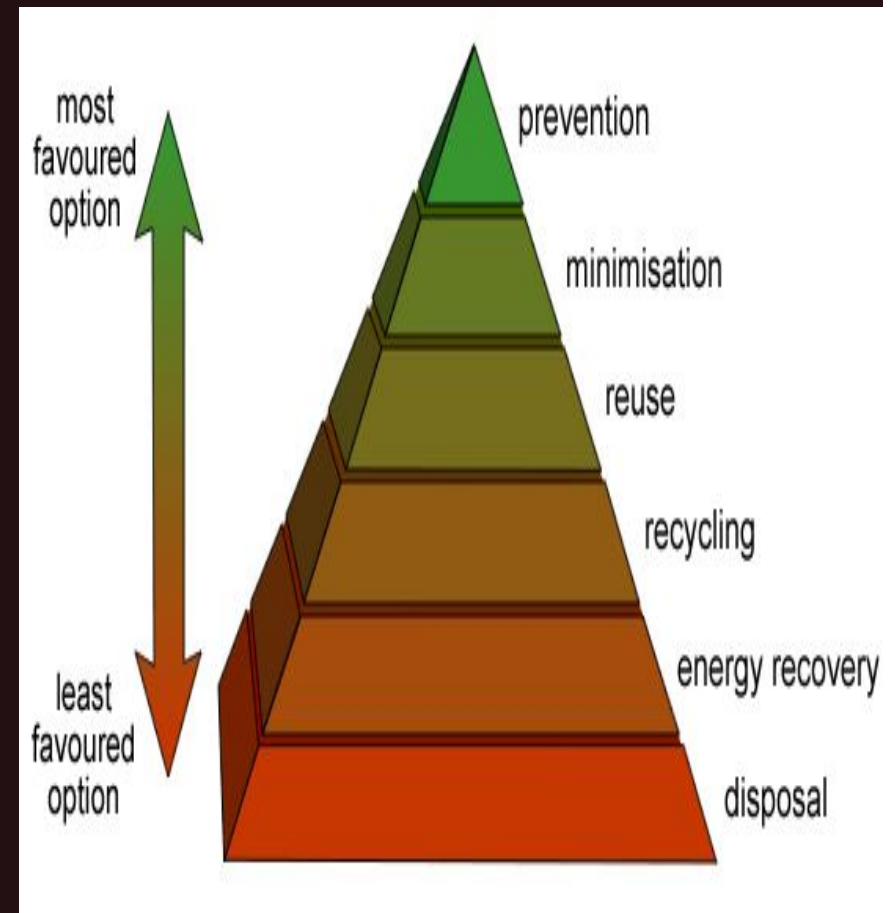
- An assessment applied at the project level is a process intended to ensure that environmental impacts of schemes are identified prior to the work being carried out so that proposals can be modified or managed in such a way that adverse impacts are avoided or minimised.
- EIA has now been made mandatory under the Environmental (Protection) Act, 1986 for 29 categories of developmental activities involving investments of Rs. 50 crore and above.

ENVIRONMENT MANAGEMENT SYSTEM MODEL



Case study: Management of waste in India

- ❑ **MoEF/CPCB/states do not have a complete data about all the various kinds of waste being generated in India**
- ❑ **Risks to health/environment had not been adequately assessed by MoEF/states**
- ❑ **Waste management efforts in India were not directed by a clear-cut policy, which incorporated a waste hierarchy,**



Audit findings

- ❑ **Rules were not framed for all kinds of waste, like construction & demolition waste, electronic waste, agricultural waste, etc**
- ❑ **Instances of the polluter being held responsible for unsafe disposal were very few**
- ❑ **Compliance to municipal solid waste rules i.e. Collection, segregation of waste after collection, waste processing facilities and scientific landfills were almost non-existent**

Audit findings

- ❑ **Compliance to compliance to bio-medical waste rules and plastic waste rules was weak**
- ❑ **Weak compliance was compounded by lax and ineffective monitoring.**
- ❑ **Absence of adequate funds/manpower for waste management activities**

Audit impact

- MoEF constituted a committee to draw up a road map for the management of waste in India based on CAG's recommendations
- The Committee consists of senior Government officials, Central Pollution Control Board, representatives from NGOs and eminent persons in the field of waste management.
 - A representative of the C&AG was also invited to attend the meetings
- Report has made 103 recommendations which are being implemented by the Ministry

A close-up photograph of a person's hand holding a small green plant with dark soil. The background is a soft, out-of-focus green. A red L-shaped line is positioned in the upper left quadrant, and a horizontal red line is located below the main text.

Please nurture the
environment

Thank You