



Global Environment Outlook 4: An Overview

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Structure of the Presentation

- **The Background**
- **The GEO 4 Process**
- **The Outlook**



- **The Background**
- The GEO 4 Process
- The Outlook Component



The Human Challenge

Considerable progress has been made in fighting poverty

- life expectancy increasing
- infant mortality decreasing
- agricultural production increasing

Major problems remain

- 1.2 billion people live on less than \$1 per day
- 1 billion people do not have access to clean water
- More than 2 billion people have no access to sanitation
- 1.3 billion are breathing air below the standards considered acceptable by WHO
- 700 million people suffer from indoor air pollution due to biomass burning
- Human population increasing at 80 million per year



Source: Serageldin, 2002, Science 296:54



Growing Demand For Environmental Services

Food

Food production must increase to meet the needs of an additional 3 billion people over the next 30 years



Water

One-third of the world's population is now subject to water scarcity.

Population facing water scarcity would double over the next 30 years



Fuel Wood

Wood is the only source of fuel for one third of the world's population.

Wood demand likely to increase





The Background

- The UNEP GEO project was initiated in response to
 - Environmental reporting requirements of *Agenda 21*
 - UNEP governing council decision of May 1995
- The coordinated global network of collaborating centers (CCs) is at the core of the GEO process
- Reports are produced using regional and participatory approach



Principle of Access to Environmental Information

Agenda 21 and the Malmo Ministerial Declaration of 2000

- Agenda 21 stresses on the role of information and dissemination of scientific information in a manner suitable for both planning and public information.
- Malmo Ministerial Declaration of 2000 emphasizes on intensifying scientific research and freedom of access to environmental information.

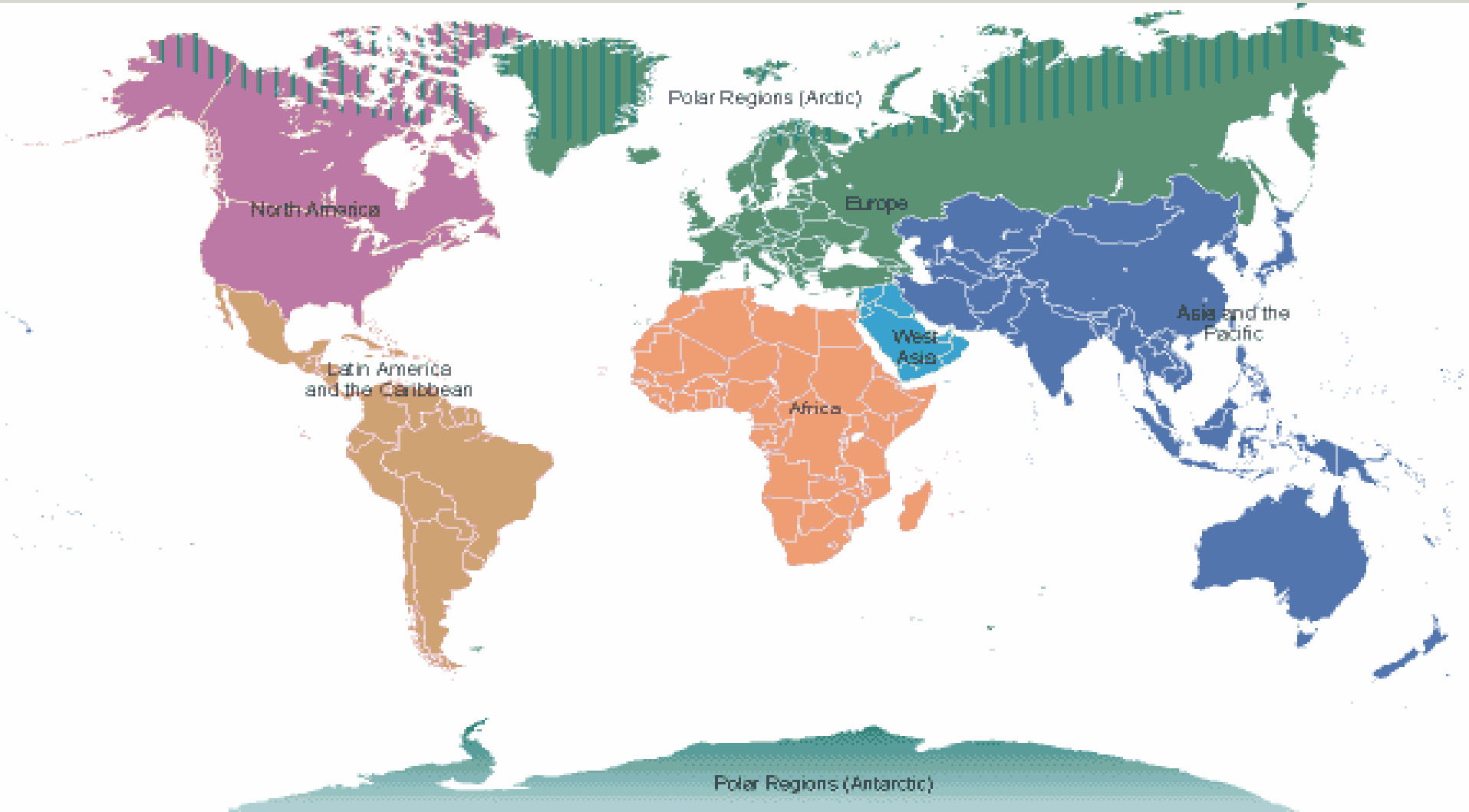


The GEO Project Is...

- A global environmental assessment process that is cross sectoral
- It incorporates regional views and builds consensus on priority issues and actions through dialogue
- Aims to strengthen environmental assessment capacity in the regions through training and learning by doing.
- Is participatory and consultative with active involvement of regions and stakeholders

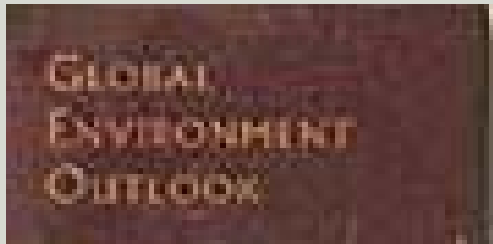


The GEO 3 Regions





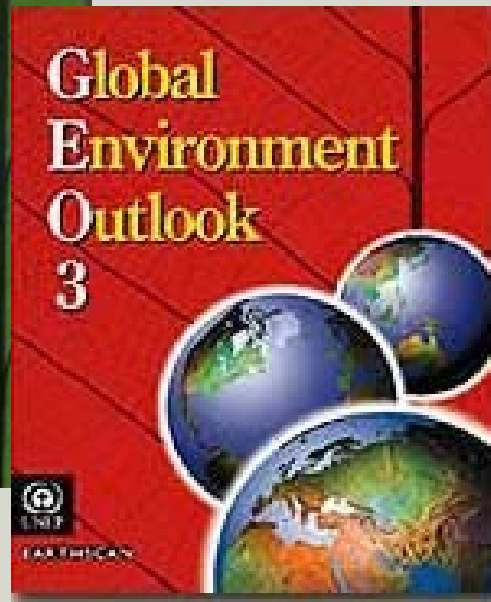
The Global Environment Outlook



GEO 1 published 1997



GEO 2 published 2000



GEO 3 published 2002



Major Constituents of GEO Reports

Integrating Environment Development

- 1970's: Foundation of modern environmentalism
- 1980's: Defining sustainable development
- 1990's: Implementing sustainable development



State of the Environment and policy retrospective

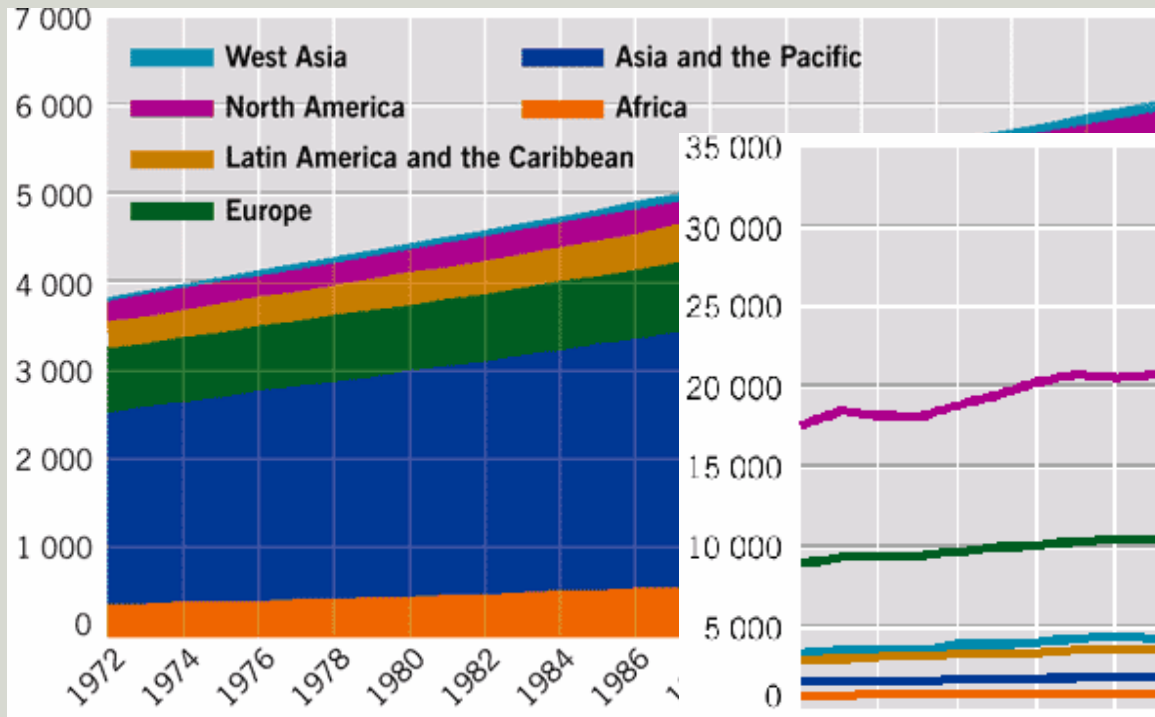
- Land, forests, biodiversity, freshwater, coastal and marine areas, atmosphere, urban areas, disasters

Human vulnerability to environmental change

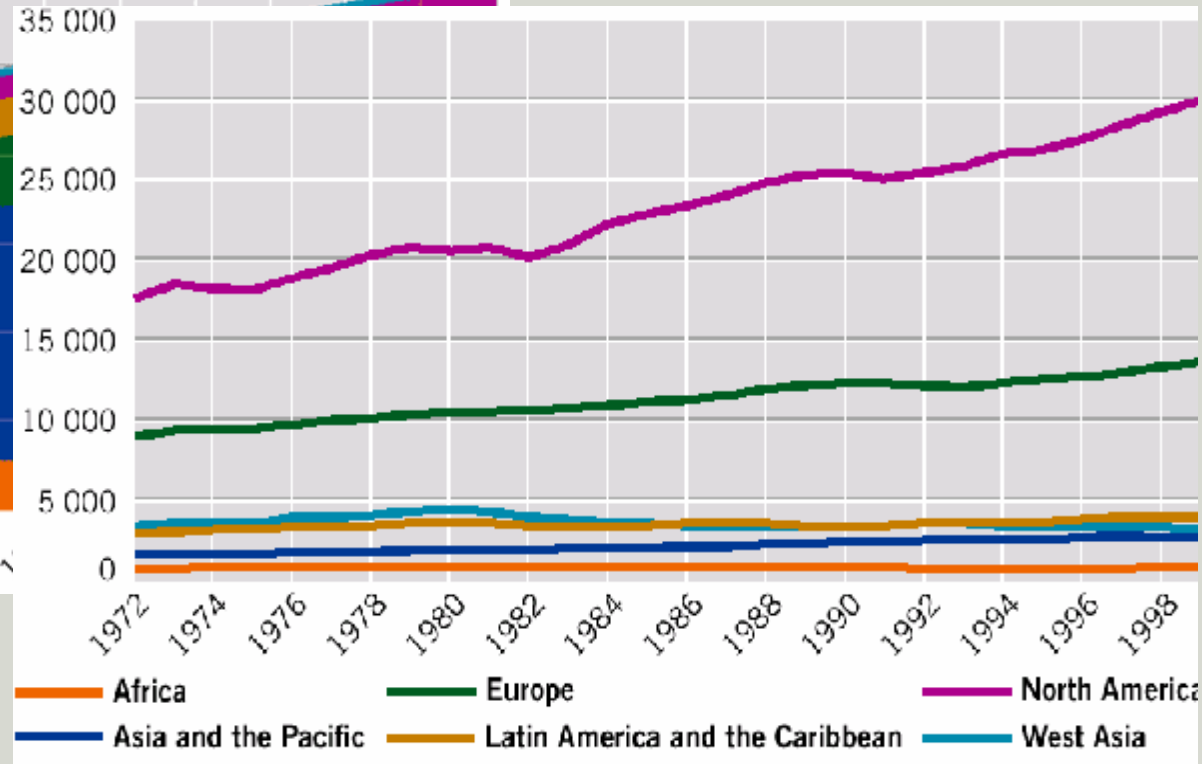
- Understanding vulnerability (vulnerable groups, places)
- How people are affected (health, food security, economic losses)
- Responding to human vulnerability (adaptation, early warning)



State of the Environment



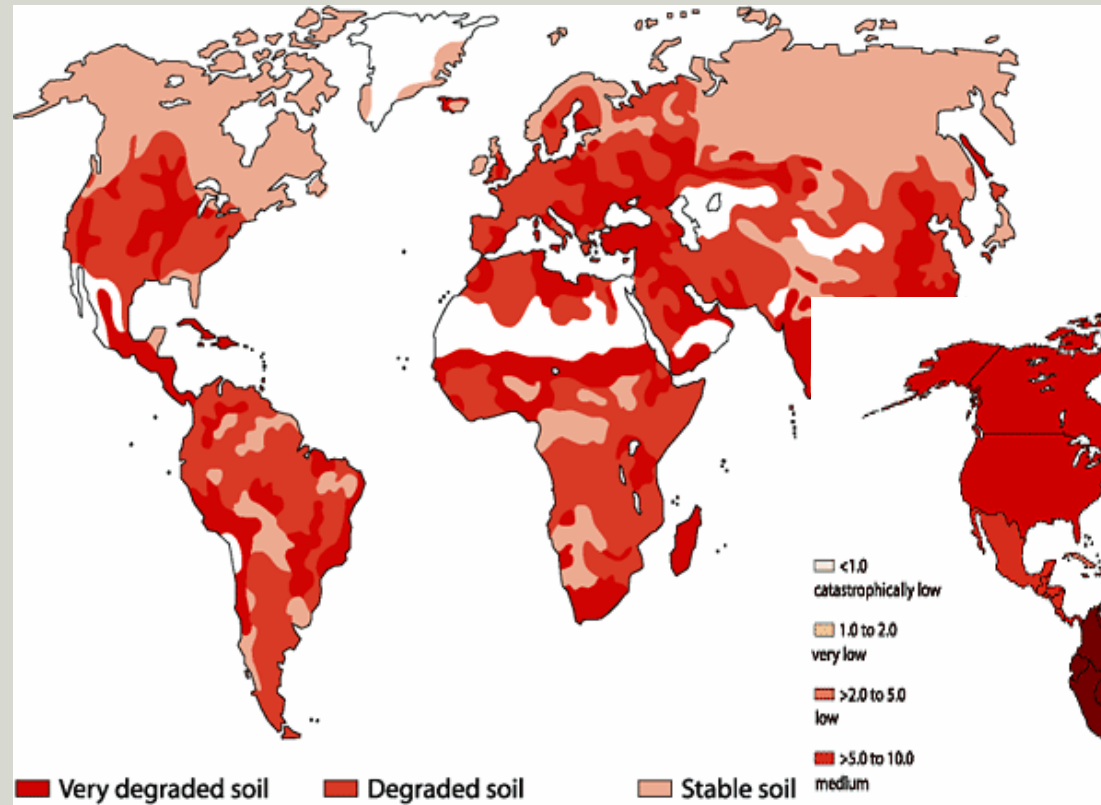
World population in Millions
Source: UNPD 2001



Gross Domestic Product Per Capita (USD 1995/year)
Source: WB 2001

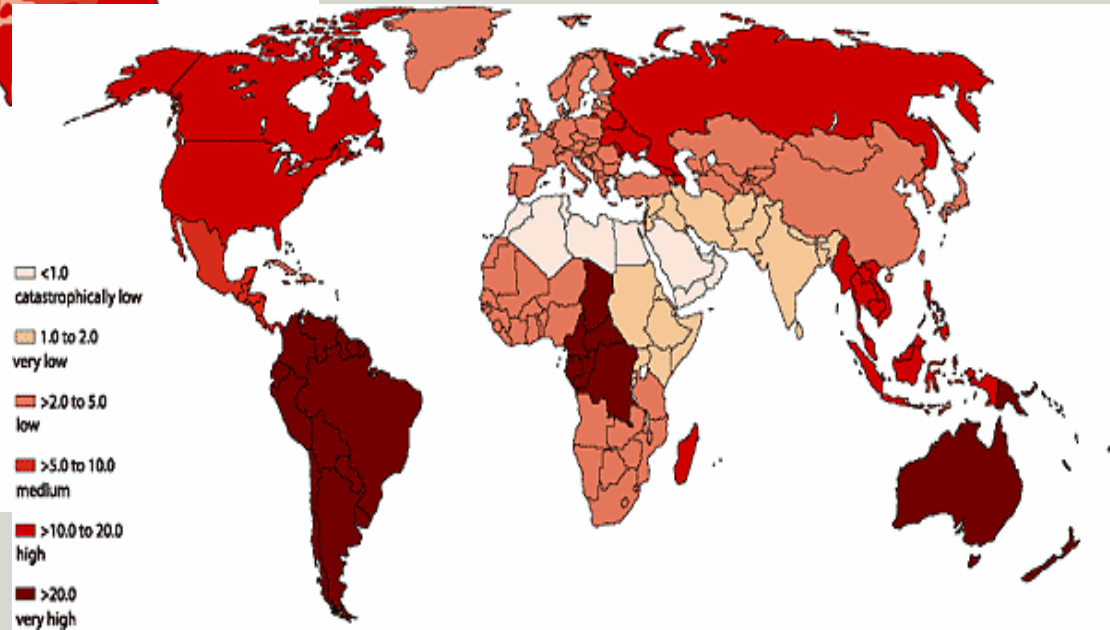


State of the Environment



Extent of degraded land

Source: UNEP, GRID Arendal 2001



Water availability measured in terms of 1 000 m³ per capita/year

Source: UNDP, UNEP, WB, WRI 2000



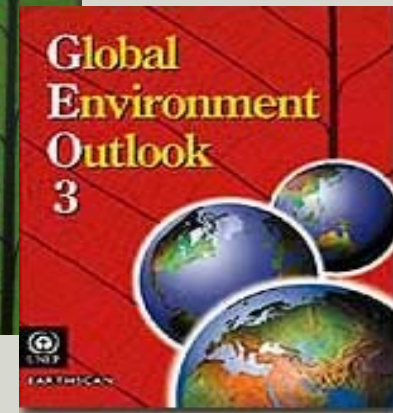
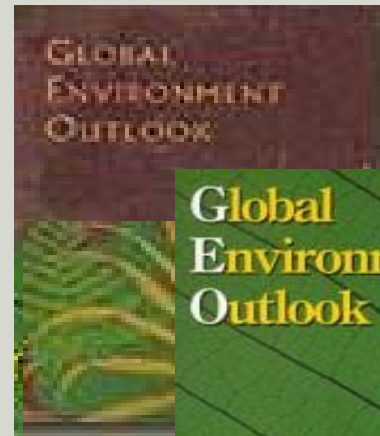
Major Constituents of GEO Reports

Outlook

- Driving forces
- A tale of four futures
- Environmental implications
- Lessons from the future

Options for action

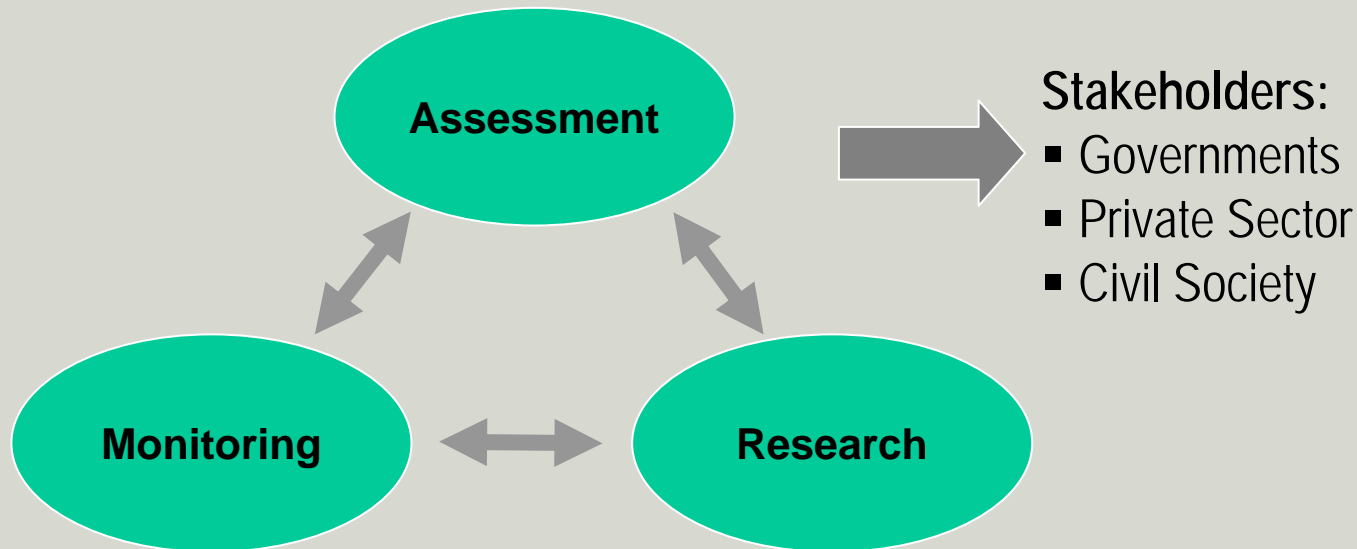
- Meeting socio economic targets
- Role of information
- Recommendations for making policy work





GEO Project is...

- A social process to bring the findings of science to bear on the needs of decision-makers



- A scientific assessment applies the judgment of experts to existing knowledge to provide scientifically credible answers to policy relevant questions.



- The Background
- **The GEO 4 Process**
- The Outlook



Key Questions and Elements

The Context

- Which are the environmental issues to be given prominence?
- Focus on human well being, vulnerability, development goals (MDGs)
- How far are we from achieving the set goals
- What is the regional context and what are their priorities



Key Questions and Elements

State and trends of the environment at global and regional level

- The current state of environment vis a vis targets
- Linking environmental reporting with policy analysis
- How is environment contributing to cross cutting goals of health, food security, poverty alleviation, energy, vulnerability
 - Assessment at global level and where appropriate at sub regional level
- Broadly issues covered belong to the categories Air, Land, Water.
- What are the drivers of change and the emerging challenges



Key Questions and Elements

The Challenges and opportunities

- Which goals have been met, what are the lessons learnt and how far have we come since Brundtland.
- Has the perspective on long term challenges changed
- Have socio economic and political developments shifted our priorities
- Has science given us new insights into the complexity and dynamics of environmental changes
- What are the new challenges the international community faces and what are the opportunities



Key Questions and Elements

The Outlook

- The extent and direction of opportunities (actions) would determine different out looks for the future.
- GEO 4 will explore possible futures
 - Markets first, Policy first, Security first, Sustainability first
- Regional differentiation and regional and global implications to be explored
- Implications of decisions made today



- The Background
- The GEO 4 Process
- **The Outlook**



The Outlook (A Tale of Four Futures)

Markets First

- Factors combine to make the shift to a liberalized, market oriented society almost universal.
- Convergence towards dominant values and development paths
- Privatization spreads, social safety nets are reduced and reliance is placed on market-based approaches

Policy First

- Decisive initiatives are taken by governments in an attempt to reach specific social and environmental goals.
- Incremental policy adjustments steer conventional development towards environmental and policy reduction goals.



The Outlook (A Tale of Four Futures)

Security First

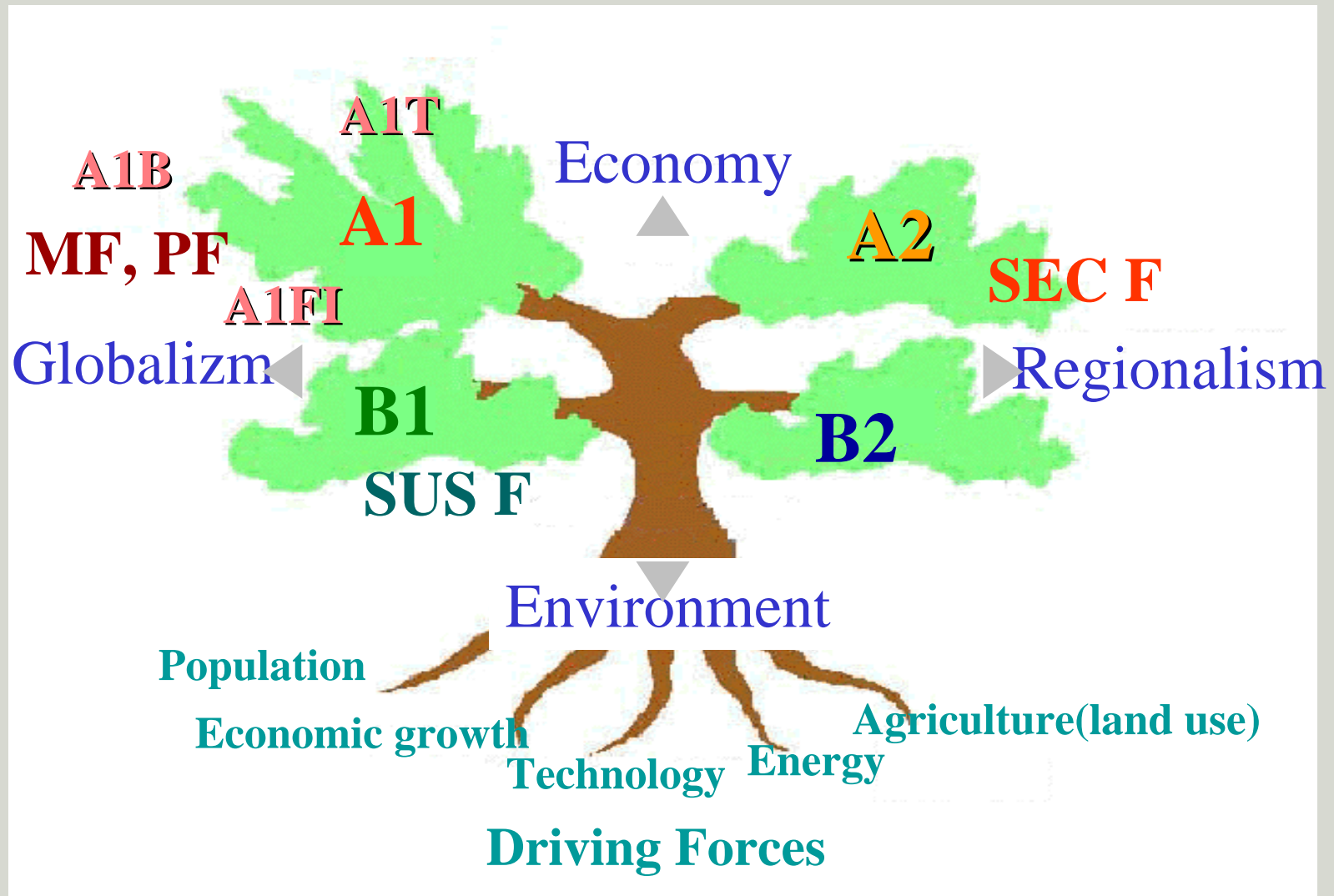
- A world of striking disparities where inequality and conflict prevail.
- Powerful and wealthy groups focus on self protection
- Cohesion leading to authoritarian order throughout much of the world

Sustainability First

- A new development paradigm emerges
- Pluralism, planetary solidarity, new values and institutions in response to the challenge of sustainability

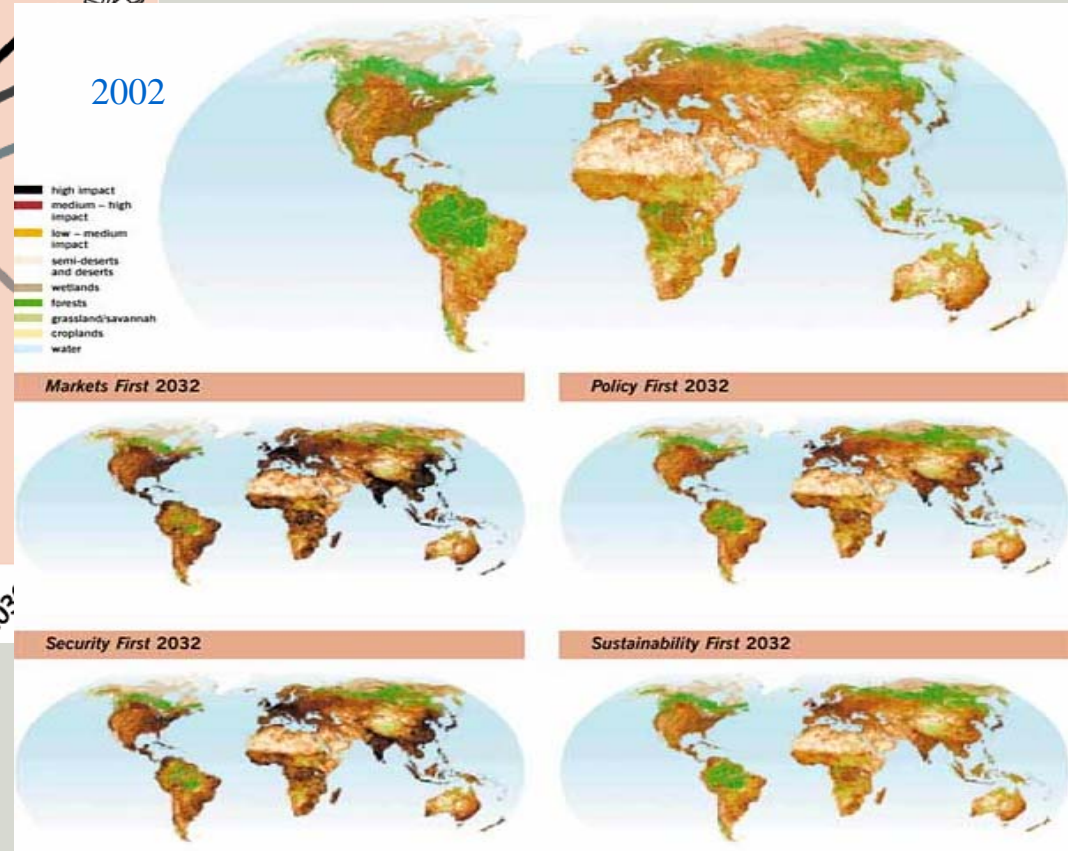
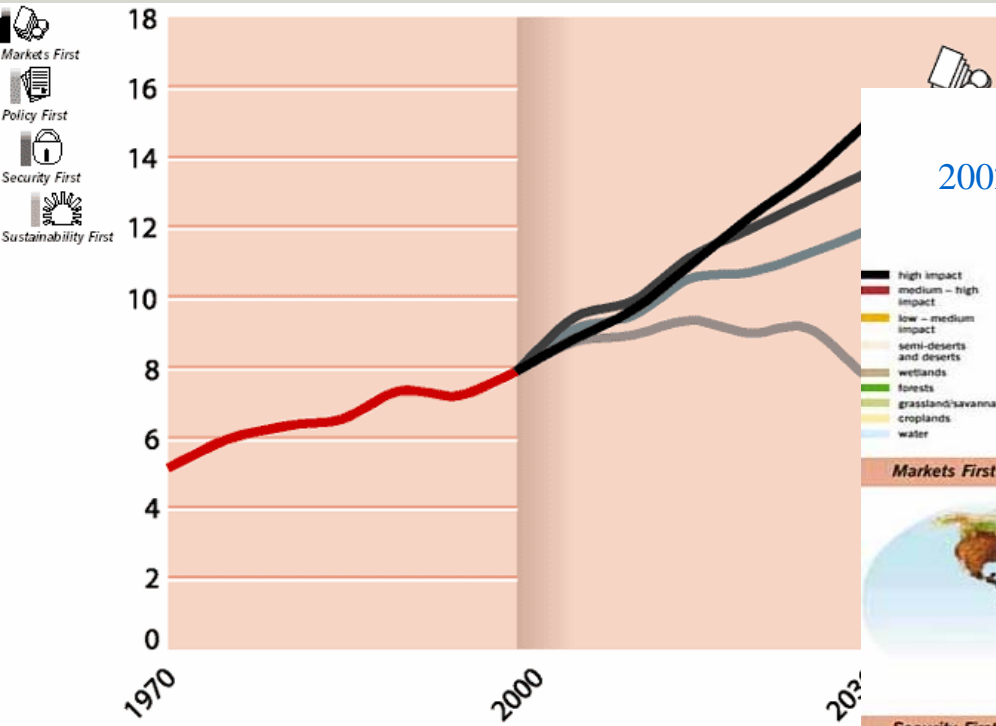


Mapping Assessment Scenarios





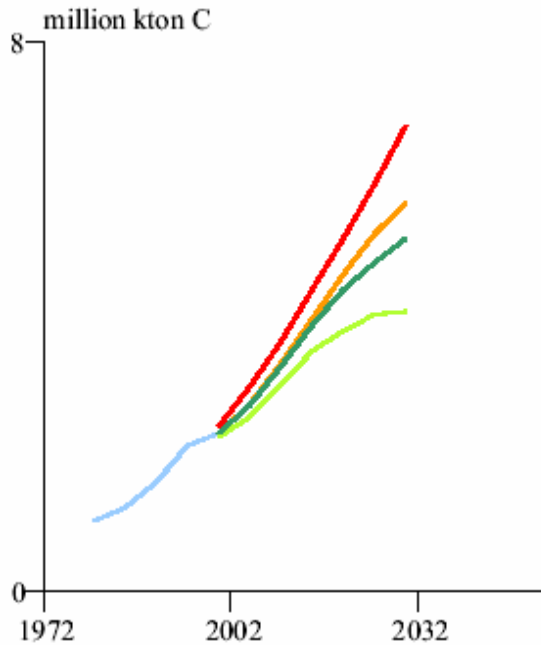
Some GEO 3 Outlook Results



Ecosystems impacted by infrastructure expansion
Source: Globio

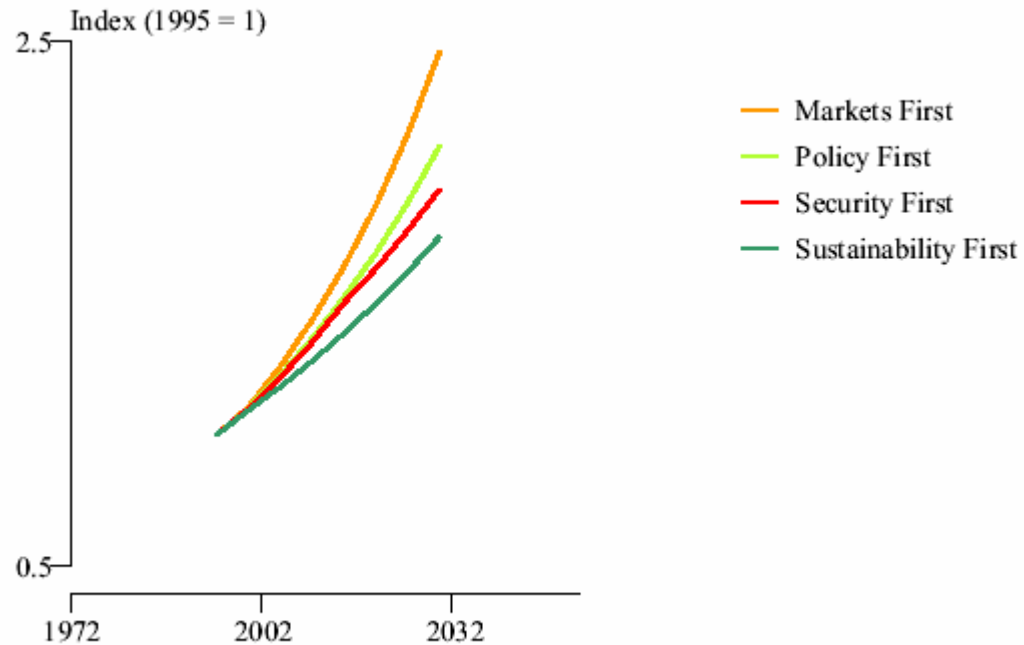


Some GEO 3 Outlook Results



Energy related CO2 emissions for Asia Pacific
Source: NIES

— Historical data
— Markets First
— Policy First
— Security First
— Sustainability First



MSW generation in the Asia Pacific
Source: NIES



Discussion

GEO 3

- The narratives drove the process
- Quantitative analysis to support and illustrate the narratives
 - Departure from IPCC SRES scenarios where quantitative modeling was the primary focus
 - Considers environmental issues in addition to CC
- Quantitative efforts focused on reproducing information from available scenarios akin to GEO 3 scenarios
- One of the first efforts to undertake regional participation in the scenario exercise.



Proposed Plan for the Outlook Component of GEO-4

Starting point

- The GEO-3 scenarios will act as the first draft scenarios for GEO-4.
- The focus of the work will be on the global and regional levels with some differentiation, as appropriate, on a sub-regional level.

Temporal Specification

- Time horizon for narratives and quantification will be 2050
- Reporting of indicators in 2015 (short-term)
- Certain environmental indicators to 2100 (long-term)



Proposed Plan for the Outlook Component of GEO-4

Proposed Purpose and Key Questions

- Where does each scenario stand in relation to specific goals?
- What are intermediate and long-term implications of current (and already taken) actions?
- What are the contrasting ‘costs’ (in a broad sense) for achieving particular sustainability goals under the scenarios?
- How, and how well, can different actors/regions respond to a future shock/disturbance/new insight/concern under the different scenarios?



Proposed Plan for the Outlook Component of GEO-4

Content Elements

- Specific priority, cross-cutting, and emerging issues
- Trends in key drivers, e.g. population, consumption, production, and technology
- Trends in key environmental indicators, e.g. pollutant levels, land cover, and biodiversity
- Progress toward specific goals and targets, e.g. MDGs
- Global story with regional elements, separate regional stories for each of the scenarios, (sub-)regions free to elaborate on issues that are important to them



GEO-4 Report Timeline

- June 2004: Initiated
- March 2005-06: Content development and first draft
- April-June 2006: Peer review and regional consultations
- July- Oct 2006: Second draft and peer review
- Nov- Dec 2006: Final draft
- Jan-Aug 2007: Editing, layout and printing
- September 2007: Launch and distribution

Asia Pacific Integrated Modeling Team



Thank You