

**ADAPTING TO CLIMATE CHANGE AND RESPONSIBLE
STEWARDSHIP OF ENVIRONMENT FOR SUSTAINABLE
DEVELOPMENT**

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Climate Change

What is climate Change?

Change of mean state of climate (such as temperature and precipitation) persisting for extended period of time

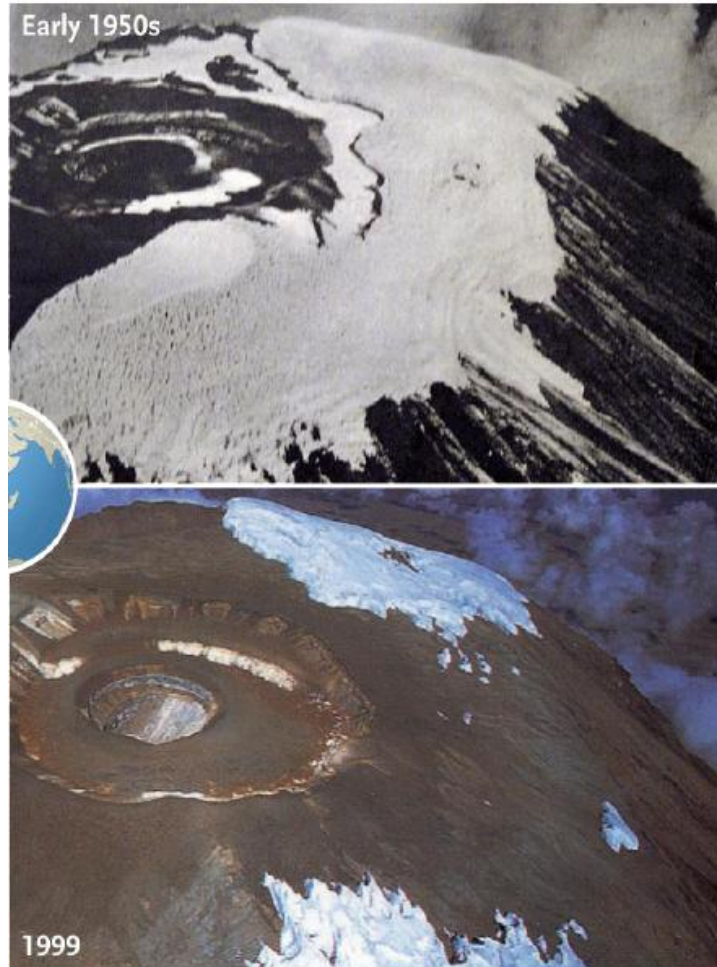
“A change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere (United nations Forum Convention on Climate Change, UNFCC)”

What are the signs of climate change?

- Local temperature rise: Global warming



Mt Kilimanjaro: Ice cover



20 Square KM

2.5 Square KM

Figure 3: Oblique photos showing the loss of ice cover between the early 1950s and 1999. Source: UNEP 2007.

Extreme heat and/or drought



Extreme precipitation and/or wind

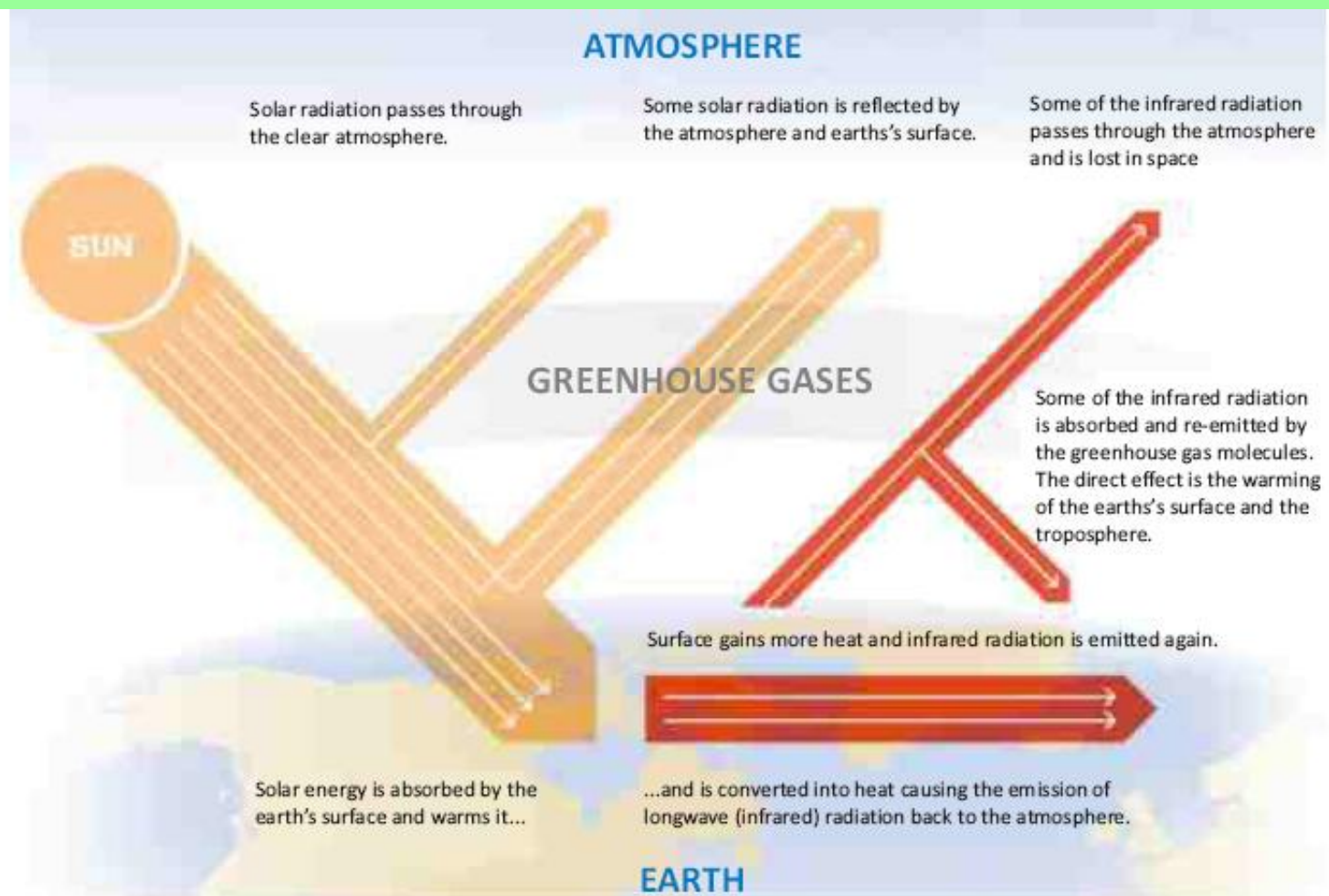


Landslide in Bududa, Uganda. 300 feared dead



- Changing animal and plant behavior

Drivers of Climate change: Greenhouse effect

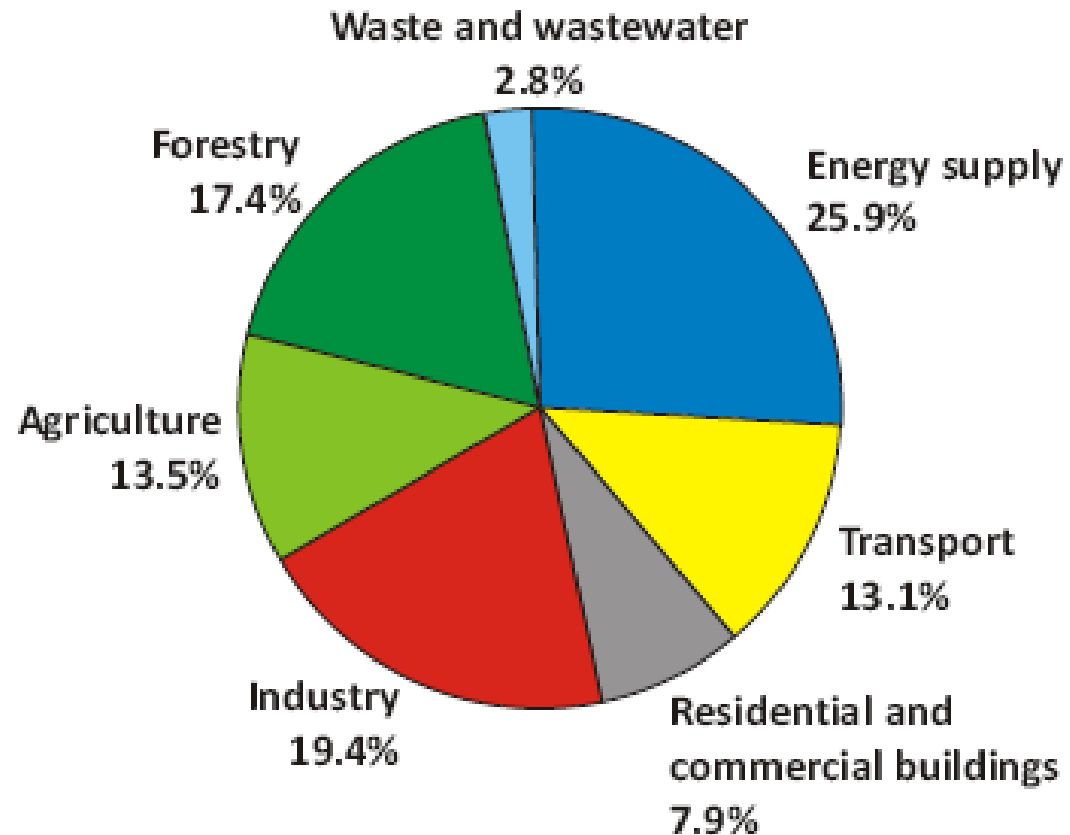


Source : Okanagan University College in Canada, Department of Geography; United States Environmental Protection Agency (EPA), Washington; Climate change 1995, The science of climate change, contribution of working group 1 to the second assessment report of the Intergovernmental Panel on Climate Change, UNEP and WMO, Cambridge University Press, 1996. GRID Arendal.

Greenhouse gases:

- carbon dioxide (CO₂), methane (CH₄), nitrous oxide (NO₂) and haloflourocarbons (HFCs).
- Released from Energy production, Agriculture, Transport, Ecological processes: Changing land use and deforestation
- These gases trap some of the infrared radiation and re- radiate it back to the Earth's surface as heat, causing a warming effect known as the “greenhouse effect”

Sources of Greenhouse Gases



Source : IPCC 4th Assessment Synthesis Report Summary for Policymakers (2007), P.5.

Consequences of Climate Change

- Threatened water supplies: Water scarcity
- Cultural losses: Damage to indigenous cultures
- Food Security: Low crop yields
- Threat to health: Disease vector spread
- Rising sea levels: Threat to coastal communities

Adapting to Climate Change

- Anticipatory adaptation:

Preservation of biodiversity, Planting of trees, and reducing deforestation

- Institutional and regulatory adaptation:

Regulatory reform e.g Farming on forests and near rivers

- Research and Education:

New solutions: renewable energy, replacing fossil fuels with renewable energy, upgrading building insulation and energy systems, sustainable modes of transport (bicycle), increasing automobile efficiency,

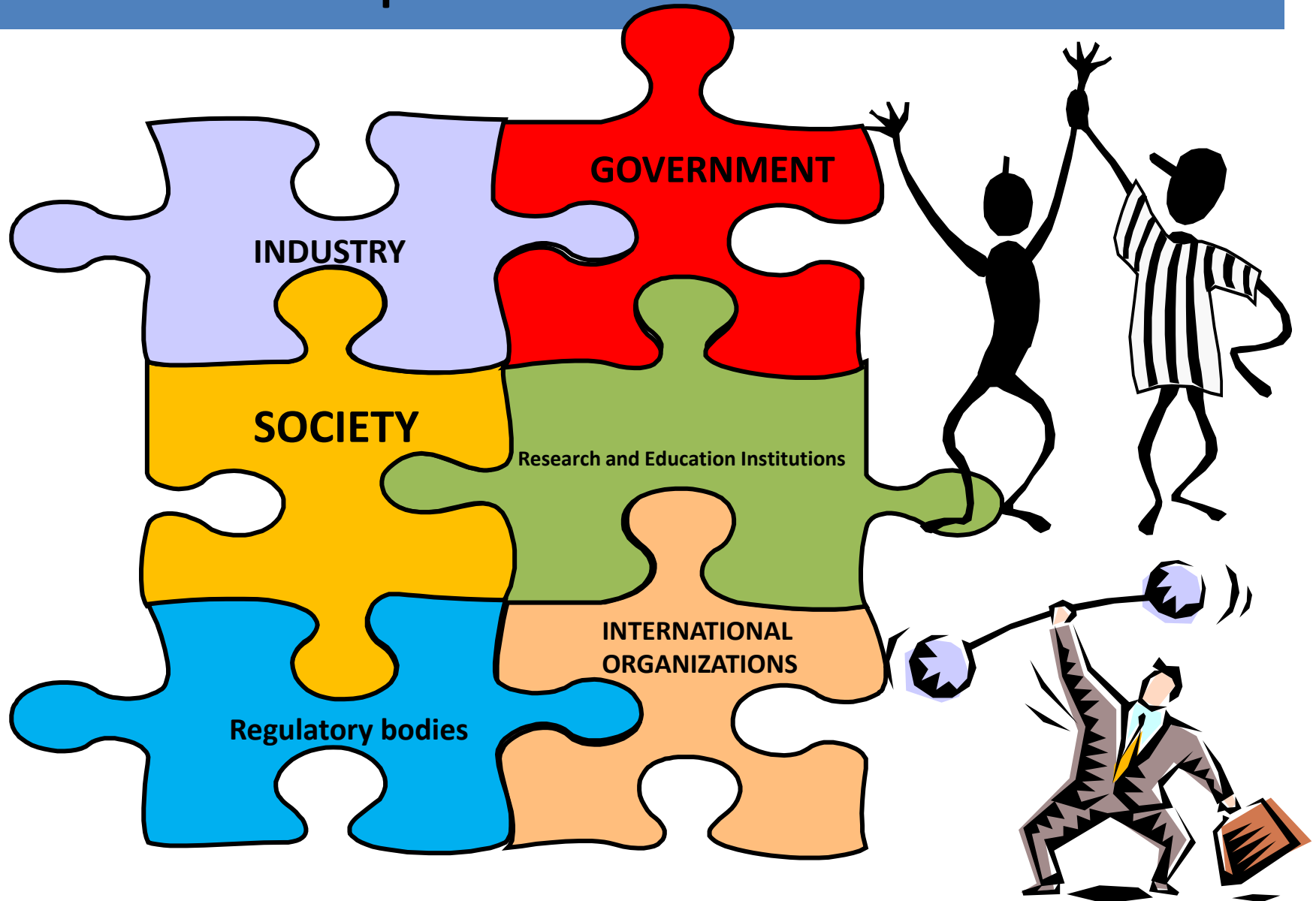
stimulate behavioral changes: increasing access to and use of public transit

- Capacity building: strengthen capacity to respond to development pressures, improve environmental quality

Who should adapt?

- Consumers
- Producers
- Traders
- Regulatory bodies
- Research and Education Institutions
- Government Ministries
- International organizations
- You and Me

Requires collaboration



We're constantly being bombarded by problems that we face and sometimes we can get completely overwhelmed.

[But] we should always feel like a hummingbird.

I may feel insignificant, but I don't want to be like the other animals watching the planet go down the drain. I'll be a hummingbird, I'll do the best I can."



Be an environmental steward

- What is an environmental steward?
- Environmental stewards strive to sustain natural resources and our environment for future generations.
- Use natural resources responsibly - Conserve resources such as water, minerals and wood by using them efficiently and recycling when appropriate.
- Reduce waste generation - Use less toxic materials to limit the amount of hazardous wastes produced, and improve the efficiency of your operations to reduce the amount of waste generated.

I'll do the best I can



WANGARI MAATHAI