

Skills Development Workshop

Incorporating environmental consciousness into Planact



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Outline

Part I. Concepts:

- Ecology
- Tragedy of the Commons
- Sustainability
- Environmental Justice
- Climate Change

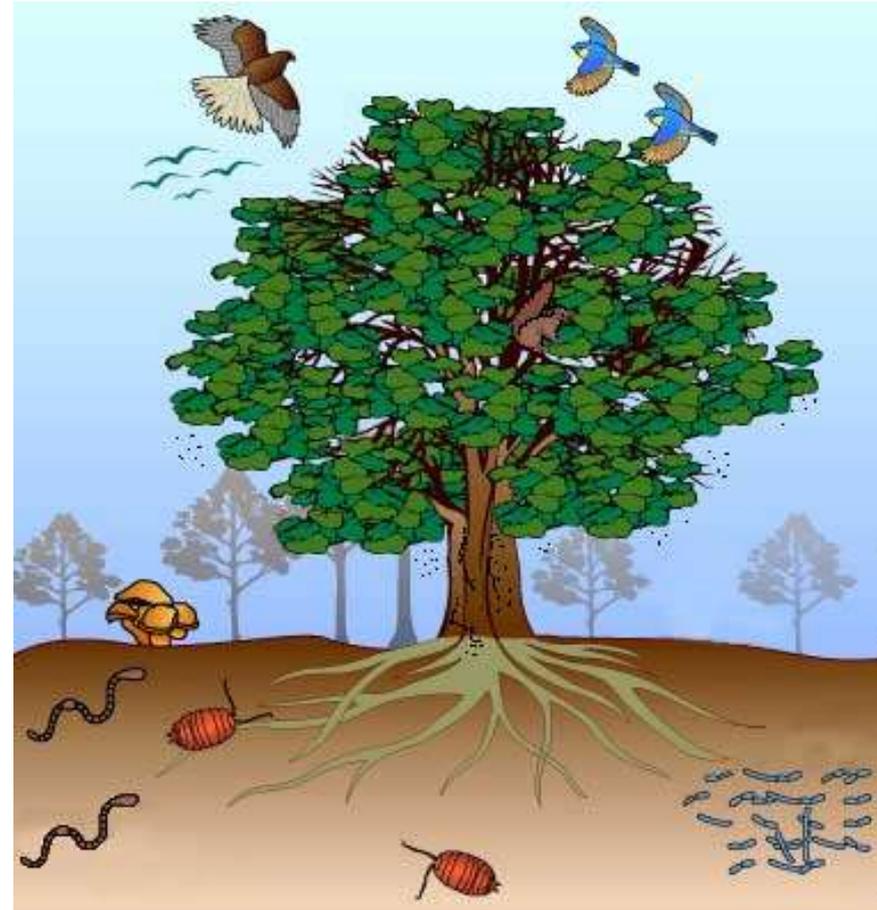
Part II. Solutions:

- Green Building
- Smart Growth & Transit-Oriented Development
- ZeroWaste

Ecology

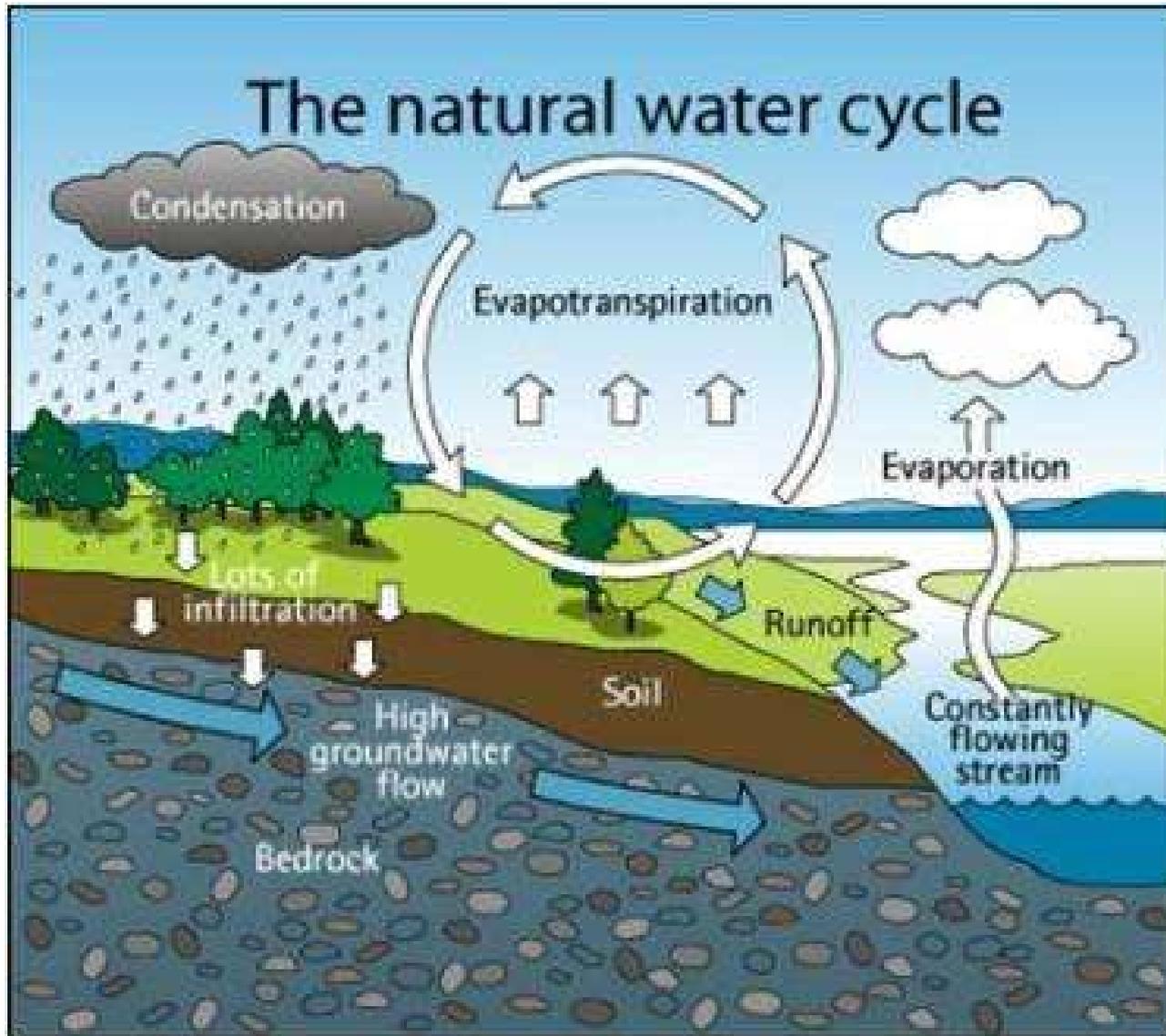
Ecology is the study of organisms' interactions with each other and their environment.

An **ecosystem** is a complex set of relationships between all of the living organisms (plants, animals, and micro-organisms) in an area functioning together with all of the physical factors of the environment (soil, water, air, etc.).



The ecosystem of a single tree

Ecology



1. Rain infiltrates the soil.
2. The soil filters and cleanses the water.
3. The water sinks to the water table and becomes groundwater.
4. The groundwater flows to a body of water.
5. The water eventually evaporates into the atmosphere and will return as rain.

Source: Auckland, NZ

Ecology

Stormwater runoff:

When stormwater is unable to seep into the ground (usually because of paving) and flows faster over the ground surface, causing:

Pollutants...



...from cars, litter, etc.
enter the water

Sedimentation



Fast stormwater erodes
soil and carries it to the
water

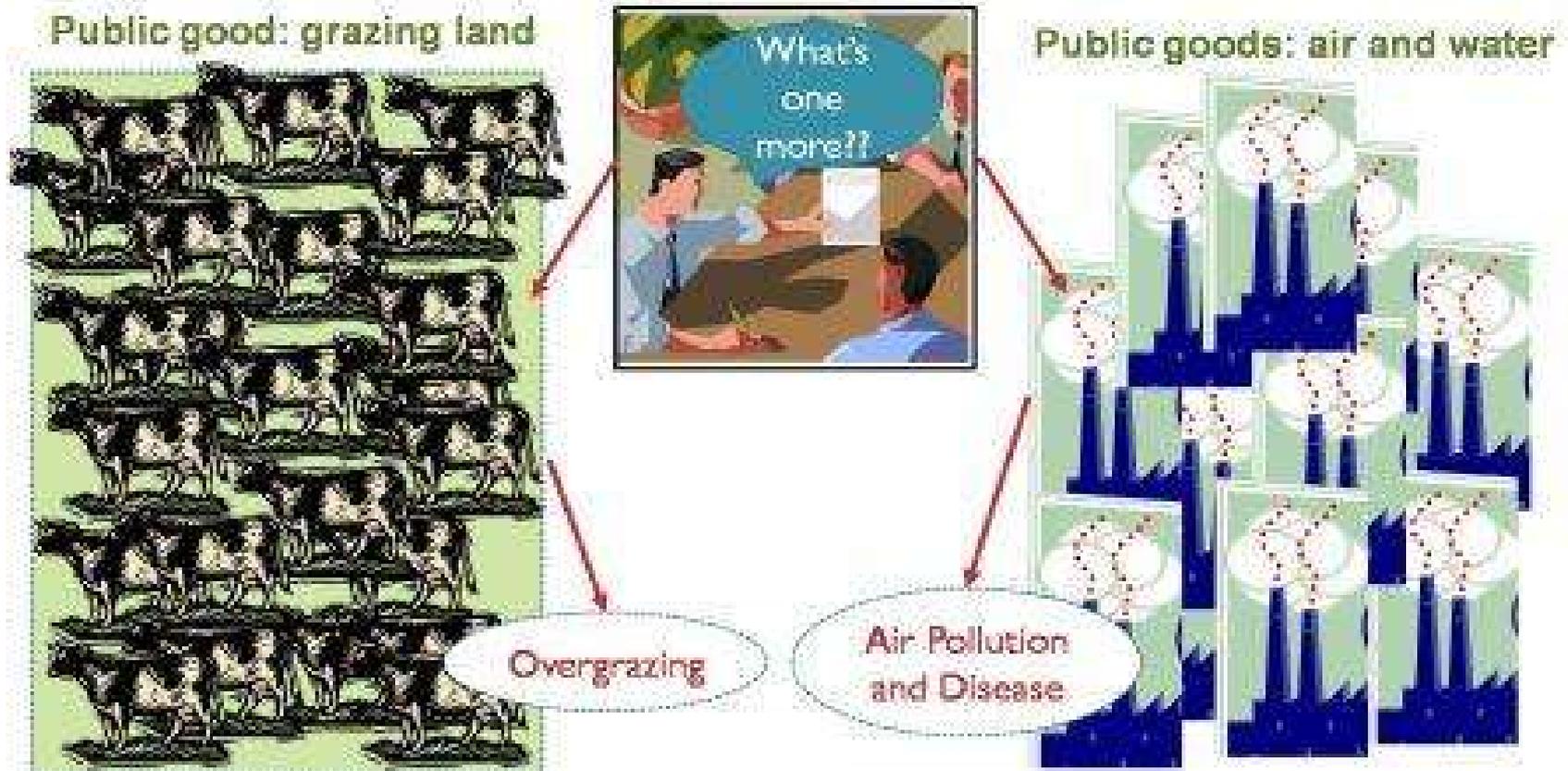
Flooding



The fast water is unable to be
absorbed and floods the
water body

Tragedy of the Commons

When everyone is motivated to maximize their individual interest at the expense of their collective well-being.



Tragedy of the Commons

Renewable Resources

Resources that are infinite or can be replenished naturally.

- Solar
- Hydro-electric
- Geothermal
- Tidal
- Wind



Photo: Verdant Power

Non-renewable Resources

Resources that once used can not be replenished.

- Fossil Fuels
 - Coal
 - Oil/Petrol
 - Natural Gas



Photo: Kaku Professional Engineers

Sustainability

“Sustainable development is development that maintains the needs of the present generation **without compromising the ability of future generations to meet their own needs.**”

-U.N. Brundtland Commission, 1987.

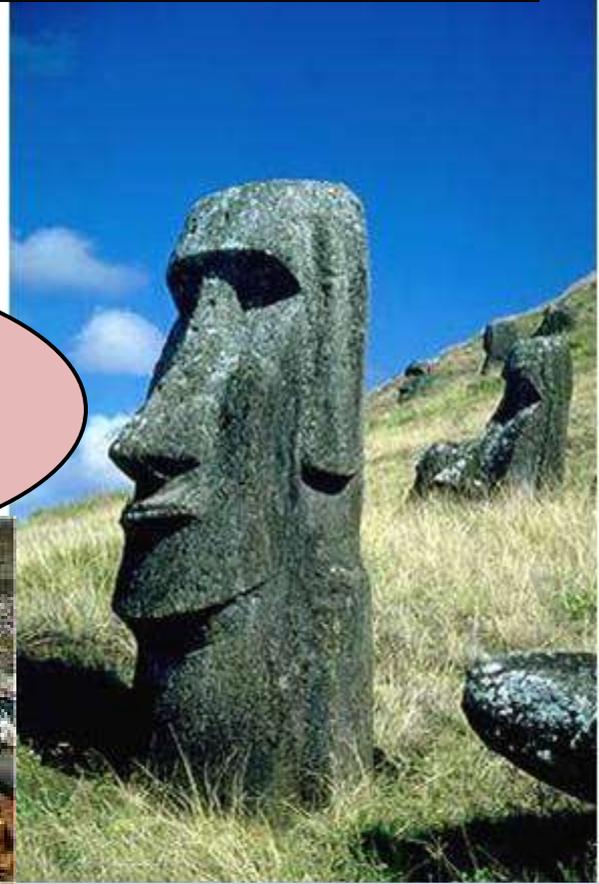
"In our every deliberation, we must consider the impact of our decisions on the next seven generations."

-Great Law of the Iroquois

Will the entire planet become an Easter Island?



Photo: Mongo Bay



Environmental Justice

“Environmental Justice is the **fair treatment** and **meaningful involvement** of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.”

E.J. will be achieved when everyone enjoys **the same degree of protection** from environmental and health hazards and **equal access to the decision-making process** to have a healthy environment in which to live, learn, and work.”

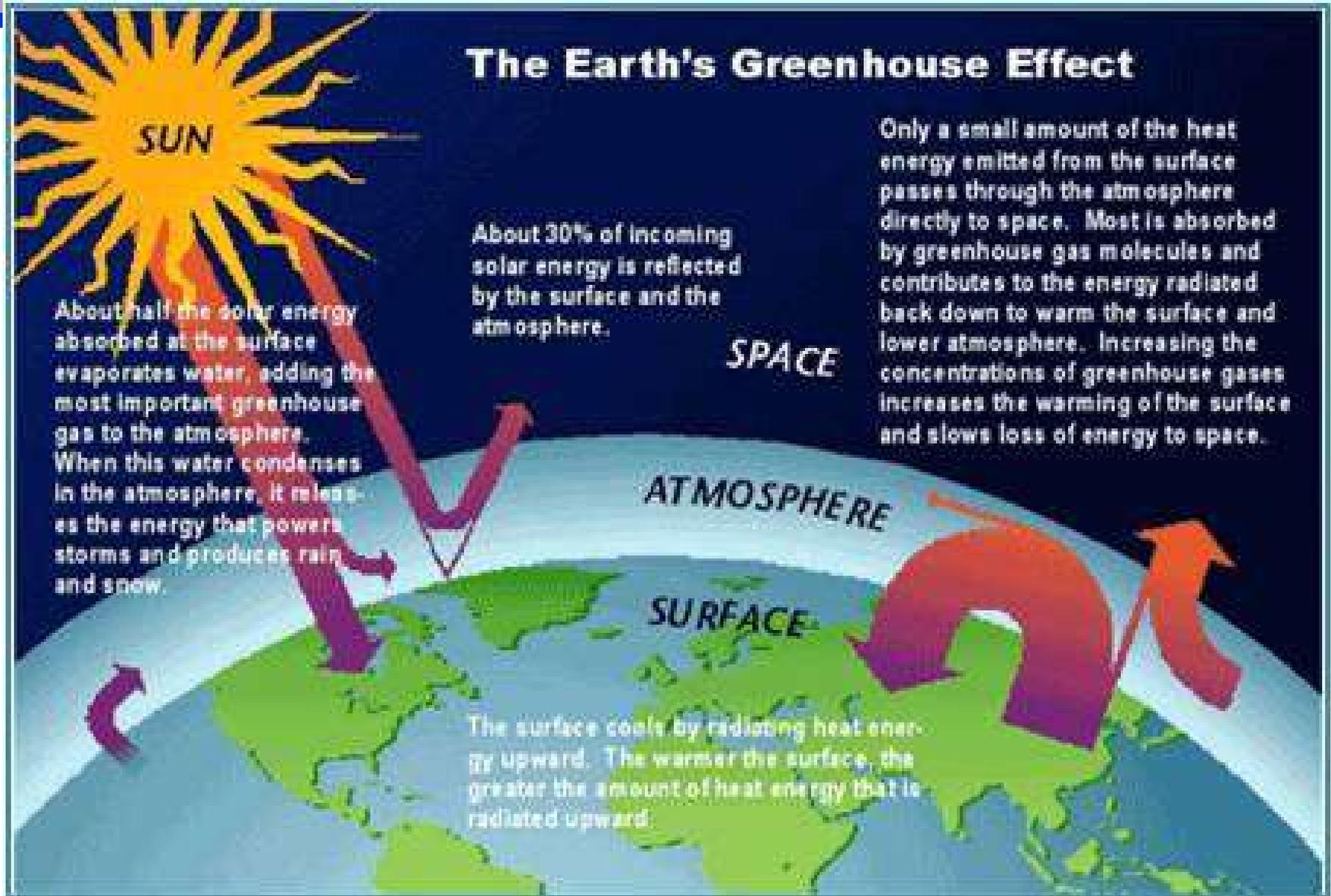
—U.S. Environmental Protection Agency



Photo: www.racewire.org

Climate Change

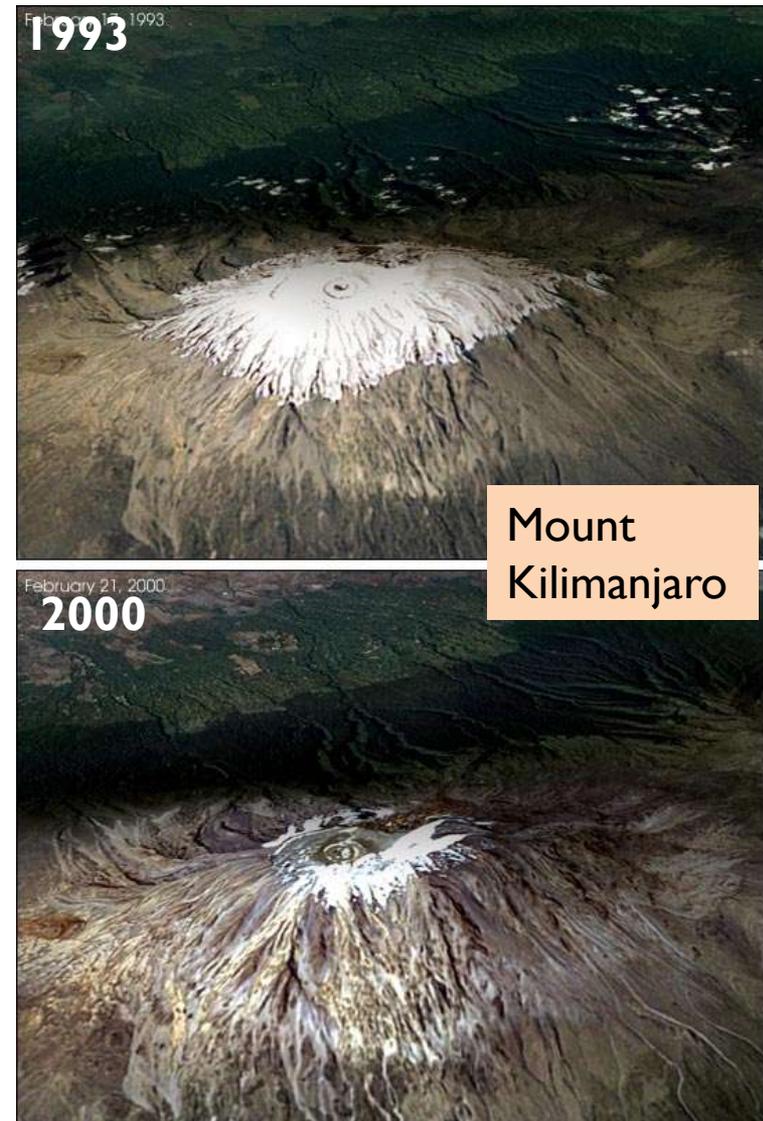
The Earth's Greenhouse Effect



Source: Purbeck, UK

Climate Change is real

- Earth's temperature is expected to rise between 1-6 °C by 2050
- Will disproportionately affect the poor due to an increase in droughts, flooding, damaging storms, higher utility costs, and expanding malaria zones.
- In South Africa, it is projected that the eastern part of the country will become wetter while the western becomes drier.
- In the east, the rainfall will come later in the season potentially impacting the growing season. The rainfall will occur in fewer precipitation events leading to an increase in flooding and other impacts (erosion, sedimentation).
- Overall South Africa's rainfall is predicted to decrease by 5-10%.
- Maize production is projected to fall by 10-20% over the next 50 years.



For more info: www.sealthedeal2009.org and <http://soer.deat.gov.za/>