

# The Environment and Development in Asia

## *ECON 377 Economies of East Asia*

### The Environment and Development in Asia

#### Sustainable Development

Development that meets the needs of the people today without compromising the ability of future generations to meet their own needs.



1

### *Environment and Development: The Basic Issues*

- Environmental issues affect, and are affected by, economic development
- Classic market failures lead to too much environmental degradation
- Poverty and lack of education may also lead to non-sustainable use of environmental resources



2

### *Environment and Development: The Basic Issues*

- We define environment capital as the "Total of renewable and non-renewable natural resources of a country. Though substitutes for some natural resources may be found through technology, most of the natural resources are non-substitutable."
- So, running down the capital stock is not consistent with the idea of sustainability
- In developing countries, environmental capital is generally a larger fraction of total capital

3

**TABLE 10.1** Principal Health and Productivity Consequences of Environmental Damage

Environmental Problem	Effect on Health	Effect on Productivity
Water pollution and water scarcity	More than 2 million deaths and billions of illnesses a year attributable to pollution; poor household hygiene and added health risks caused by water scarcity	Declining fisheries; rural household time and municipal costs of providing safe water; aquifer depletion leading to irreversible compaction; constraint on economic activity because of water shortages
Air pollution	Many acute and chronic health impacts: Excessive urban particulate matter levels are responsible for 300,000 to 700,000 premature deaths annually and for half of childhood chronic coughing; 400 million to 700 million people, mainly women and children in poor rural areas, affected by smoky indoor air	Restrictions on vehicle and industrial activity during critical episodes; effect of acid rain on forests and water bodies
Solid and hazardous wastes	Diseases spread by rotting garbage and blocked drains; risks from hazardous wastes typically local but often acute	Pollution of groundwater resources

Todaro and Smith, Economic Development Copyright © 2006 Pearson Addison-Wesley. All rights reserved.

4

# The Environment and Development in Asia

**TABLE 10.1 Principal Health and Productivity Consequences of Environmental Damage**

Environmental Problem	Effect on Health	Effect on Productivity
Soil degradation	Reduced nutrition for poor farmers on depleted soils; greater susceptibility to drought	Field productivity losses of 0.5% to 1.5% of GNI common on tropical soils; off-site siltation of reservoirs, river-transport channels, and other hydrologic investments
Deforestation	Localized flooding, leading to death and disease	Loss of sustainable logging potential and of erosion prevention, watershed stability, and carbon sequestration provided by forests
Loss of biodiversity	Potential loss of new drugs	Reduction of ecosystem adaptability and loss of genetic resources
Atmospheric changes	Possible shifts in vector-borne diseases; risks from climatic natural disasters; diseases attributable to ozone depletion (perhaps 300,000 additional cases of skin cancer a year worldwide; 1.7 million cases of cataracts)	Sea-rise damage to coastal investments; regional changes in agricultural productivity; disruption of marine food chain

Source: World Bank, *World Development Report, 1992: Development and the Environment* (New York: Oxford University Press, 1992), tab. 1. Copyright 1992 by the International Bank for Reconstruction and Development/the World Bank. Reprinted with the permission of Oxford University Press, Inc.

Todaro and Snith, *Economic Development* Copyright © 2006 Pearson Addison-Wesley. All rights reserved.

5

## *Ecological Economics and Environmental Economics*

- **Environmental (and resource) economics**
  - ▣ The environment ("land") is a "factor of production"
  - ▣ There are substitutes for environmental goods and services
  - ▣ Environmental problems can be addressed by adjustments in the economic systems
- **Ecological economics**
  - ▣ People (and economies) are part of the environment
  - ▣ There are no substitutes for many environmental goods and services
  - ▣ Addressing environmental problems requires contribution of disciplines other than economics

<http://www.worldbank.org/depweb>

6

## *The Poor as Both Agents and Victims of Environmental Degradation*

### ● **Victims:**

- ▣ The poor live in environmentally degraded lands which are less expensive because the rich avoid them
- ▣ People living in poverty have less political clout to reduce pollution where they live
- ▣ Living in less productive polluted lands gives the poor less opportunity to work their way out of poverty

### ● **Agents:**

- ▣ The high fertility rate of people living in poverty
- ▣ Short time horizon of the poor (by necessity)
- ▣ Land tenure insecurity;
- ▣ Incentives for rainforest resettlement

7

## *Global Warming and Climate Change: Scope, Migration, and Adaptation*

- The benchmark 2007 IPCC report paints a dire picture for developing economies <http://www.ipcc.ch>
- Recent reports amplify:
  - ▣ Using data not yet available to IPCC report, the 2010 U.S. NOAA study found evidence of global warming due to greenhouse gases on all 11 indicators examined
- Impact of global warming likely hardest on the poorest
- Agriculture harmed in tropical and subtropical areas
- Resultant conflicts over natural resources may grow
- Range of adverse health impacts

8

# The Environment and Development in Asia

## *Some Impacts of Climate Change in Developing Countries Identified by IPCC*

- prolonged droughts, expanded desertification
- increased severity of storms with heavy flooding and erosion
- longer and more severe heat waves
- reduced summer river flow and water shortages
- decreased grain yields

9

## *Some Impacts of Climate Change in Developing Countries Identified by IPCC*

- climate-induced spreading ranges of pests and disease
- lost and contaminated groundwater
- deteriorated freshwater lakes, coastal fisheries, mangroves, coral reefs
- coastal flooding
- loss of essential species such as pollinators and soil organisms,
- forest and crop fires

10

## *Urban Development and the Environment*

- Environmental Problems of Urban Slums
  - ▣ Health threatening pollutants
  - ▣ Unsanitary environmental conditions
  - ▣ Serious impact on poor
- Industrialization and urban air pollution
- Problems of congestion, Clean water, and Sanitation

11

## *Policy Options in Developing and Developed Countries*

- What Developing Countries can do
  - ▣ Proper resource pricing
  - ▣ Community involvement
  - ▣ Clearer property rights and resource ownership
  - ▣ Improved economic alternatives for the poor
  - ▣ Improved economic status of women
  - ▣ Investments that yield returns regardless of the shape of climate change, such as a better road network
  - ▣ Industrial emissions abatement policies
  - ▣ Proactive stance toward adapting to climate change

12

# The Environment and Development in Asia

## Policy Options in Developing and Developed Countries (cont'd)

- How developed countries can help developing countries
  - ❖ Lower developing country costs for environmental preservation
  - ❖ Trade policies: reduce barriers, subsidies
  - ❖ Debt relief and debt for nature swaps
  - ❖ Development assistance

13

## Policy Options in Developing and Developed Countries (cont'd)

- What developed countries can do for the global environment
  - ❖ Emissions controls, including greenhouse gases
  - ❖ Research and Development on green technology and pollution control
  - ❖ Transfer of technology to developing countries
  - ❖ Restrictions on unsustainable production

14

## Comparison of Three Major Environmental Worldviews

### Environmental Worldviews

#### Planetary Management

- We are apart from the rest of nature and can manage nature to meet our increasing needs and wants.
- Because of our ingenuity and technology, we will not run out of resources.
- The potential for economic growth is essentially unlimited.
- Our success depends on how well we manage the earth's life-support systems mostly for our benefit.

#### Stewardship

- We have an ethical responsibility to be caring managers, or stewards, of the earth.
- We will probably not run out of resources, but they should not be wasted.
- We should encourage environmentally beneficial forms of economic growth and discourage environmentally harmful forms.
- Our success depends on how well we manage the earth's life-support systems for our benefit and for the rest of nature.

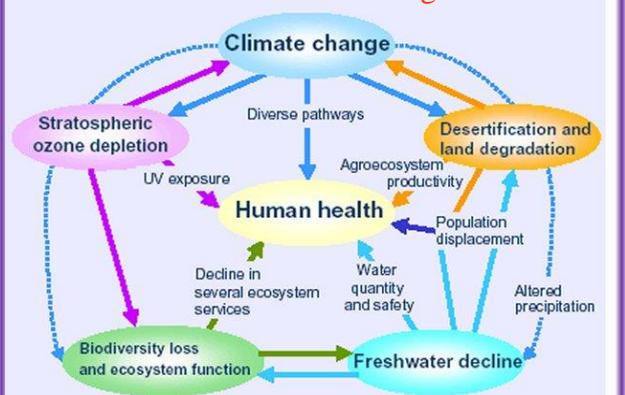
#### Environmental Wisdom

- We are a part of and totally dependent on nature, and nature exists for all species.
- Resources are limited and should not be wasted.
- We should encourage earth-sustaining forms of economic growth and discourage earth-degrading forms.
- Our success depends on learning how nature sustains itself and integrating such lessons from nature into the ways we think and act.

© Cengage Learning

15

## What are Your Thoughts?



16