

# Warm-Up

18APR2015

Please write the following statement:

- I have a APES Final on Friday!
- Ms. Leigh is available to help me study everyday but Wednesday

Logistics:

-STUDY, STUDY, STUDY!

-Remaining Assignments...



# Chapter 20

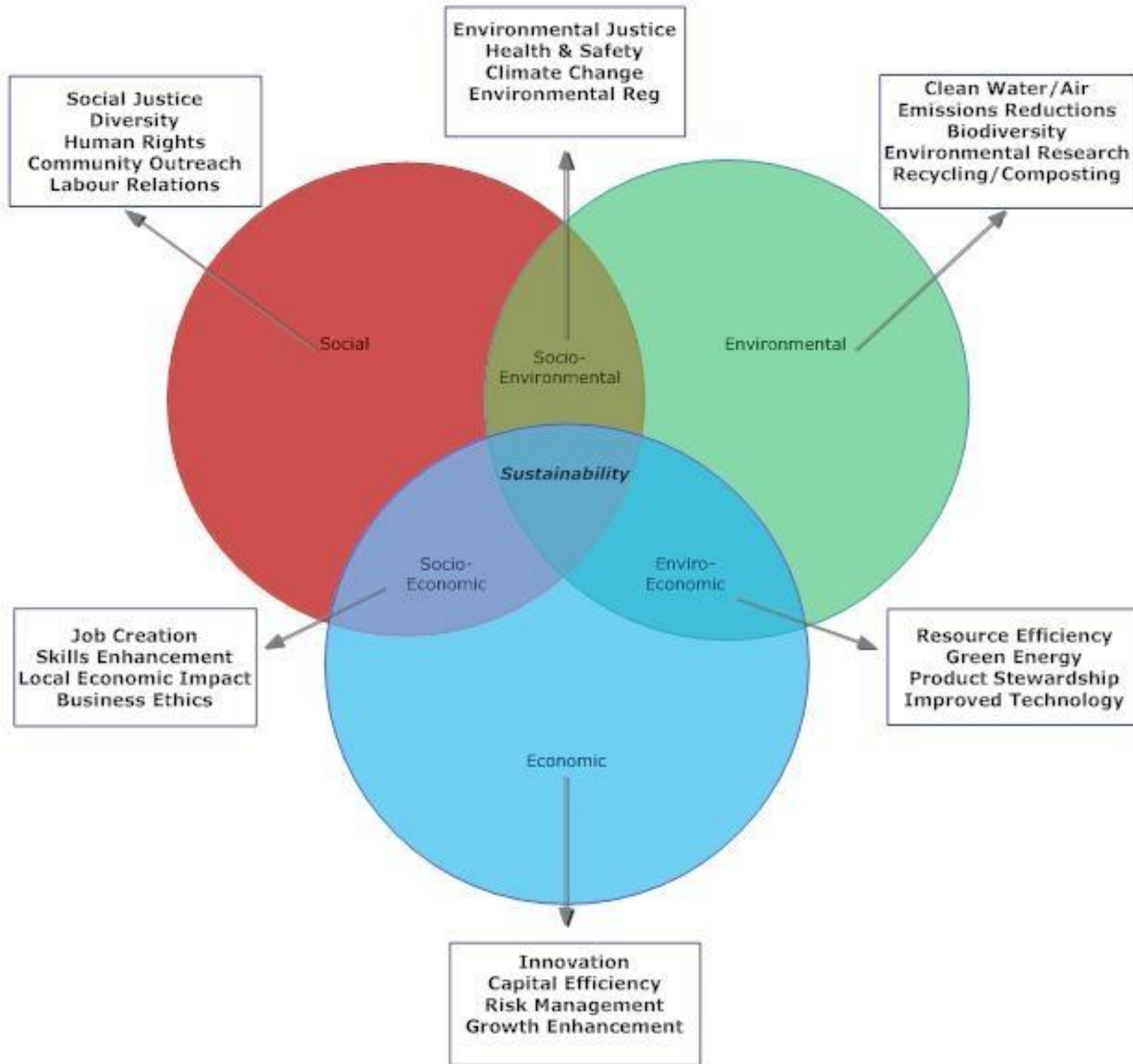
## Sustainability, Economics, and Equity

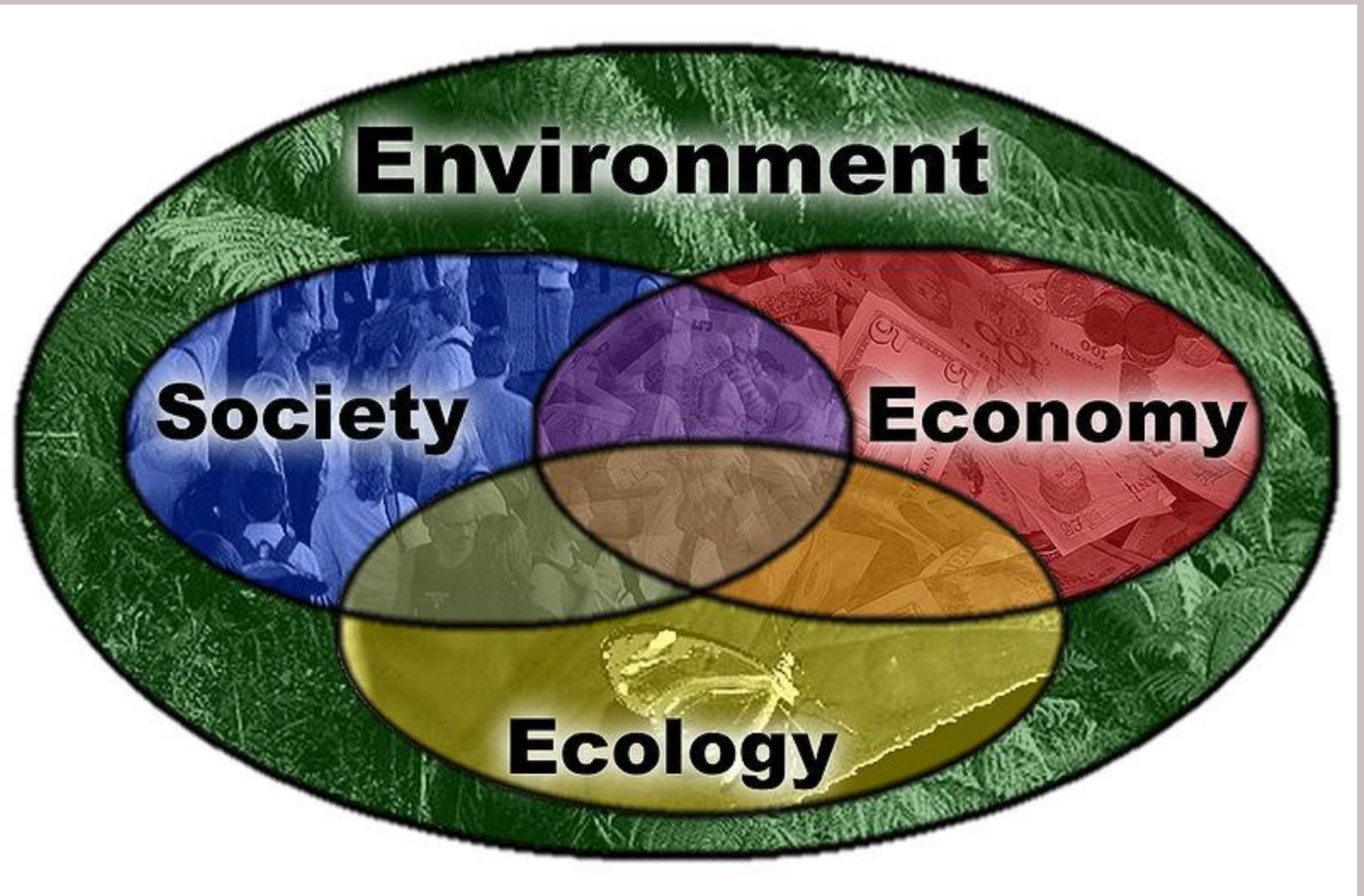
# Sustainability

- Something is sustainable when it meets the needs of the present generation without compromising the ability of future generations to meet their own needs.



# Sustainability Venn Diagram







- Questing for resources increases “well-being”
- Well being: the status of being healthy, happy, and prosperous.

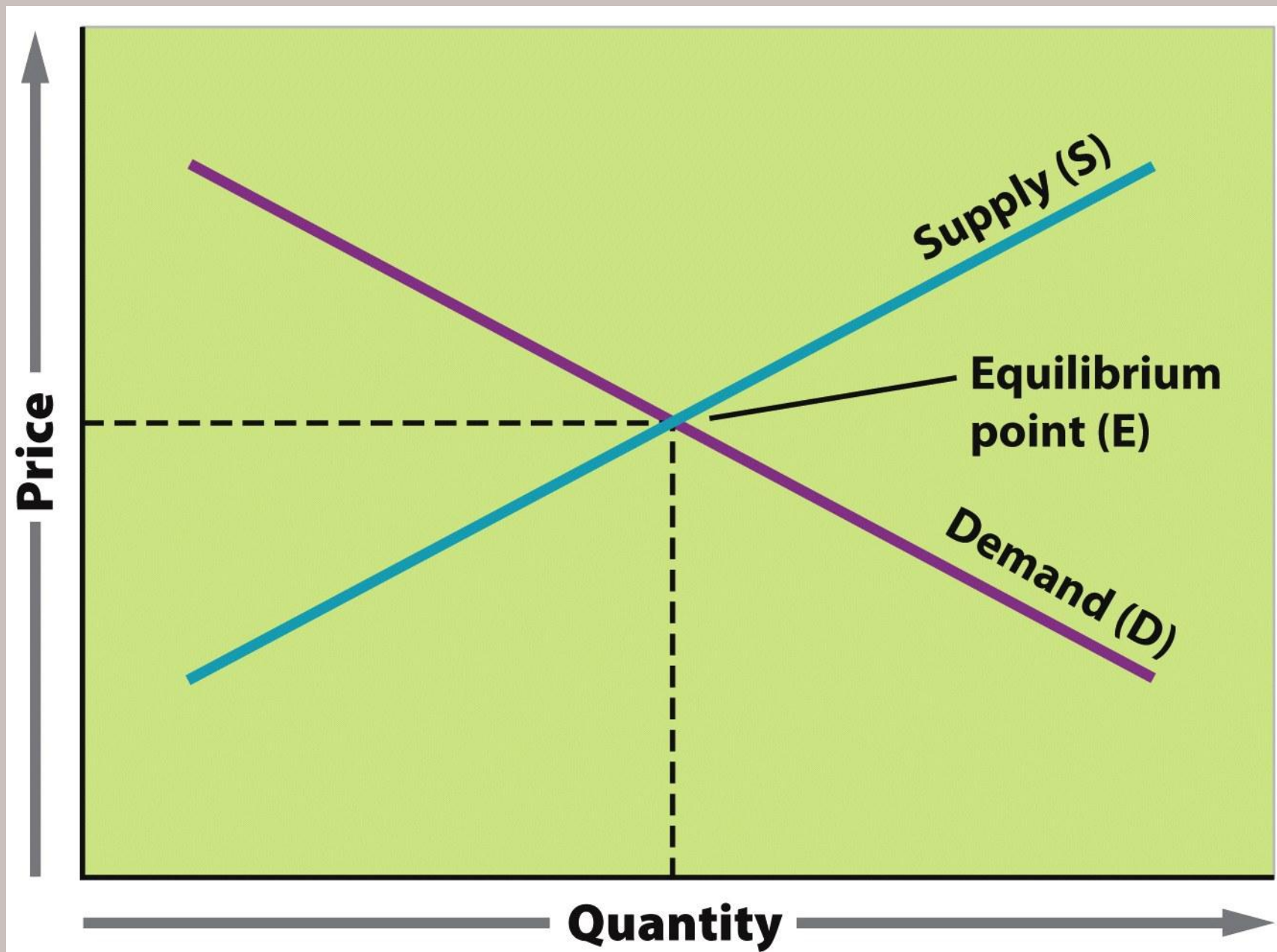
- What is sustainability?
- What are some of the variables associated with well being? Which can be measured directly? Which are harder to measure?

# Scarcity

- ▣ A market occurs whenever people engage in trade.
- ▣ In a market economy, the cost of a good is determined by supply and demand.



# Scarcity



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# Supply

- ▣ The supply curve (s) shows how many units that suppliers of a given product or service are willing to supply.
- ▣ If you are the only supplier of this product, and many people want it, you are likely to be willing to produce many of the product.
- ▣ However, if there is competition for your product, you may be concerned how many you can sell and will produce less now that you share the market with other suppliers.

# Demand

- ▣ The demand curve (D) shows how much of a good consumers want to buy.
- ▣ Factors that determine demand include income, price of the good, tastes, expectations, and the number of people who want the good.
- ▣ The demand curve slopes downwards because as the price of the good rises, the demand declines.



# The Law of Demand

- When the price of a good rises, the quantity demanded falls and when the price falls, demand rises.

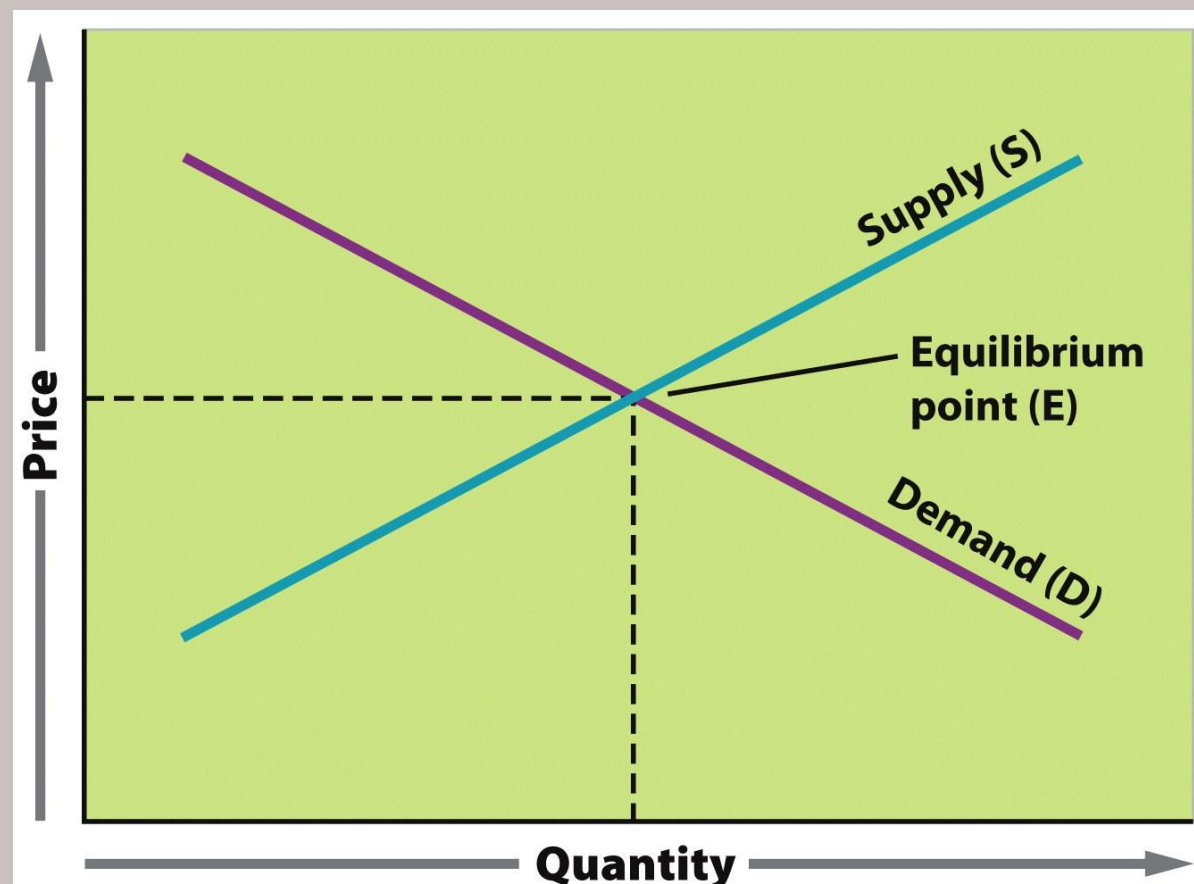


Figure 20.1  
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# The Law of Supply

- When the price of a good rises, the quantity supplied of that good will rise and when the price of a good falls, the quantity of the good supplied will also fall.

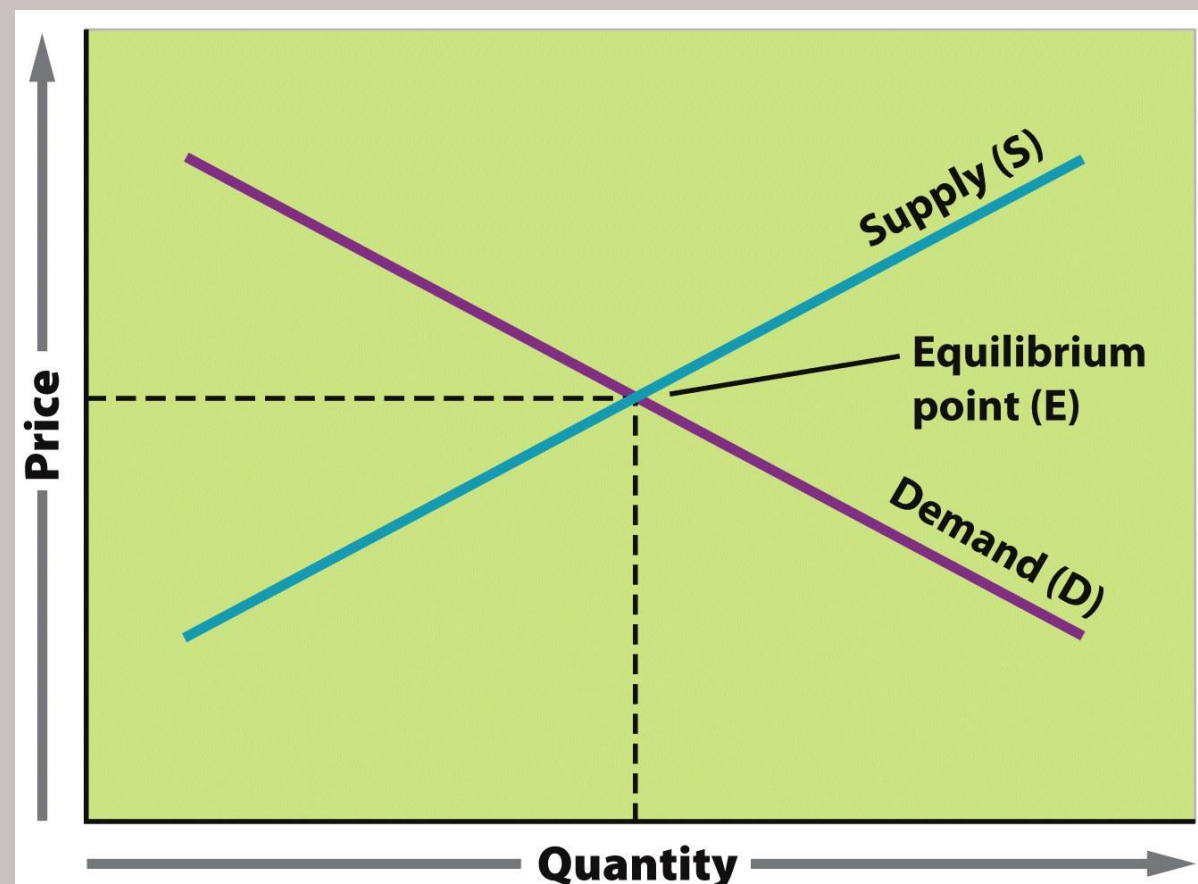
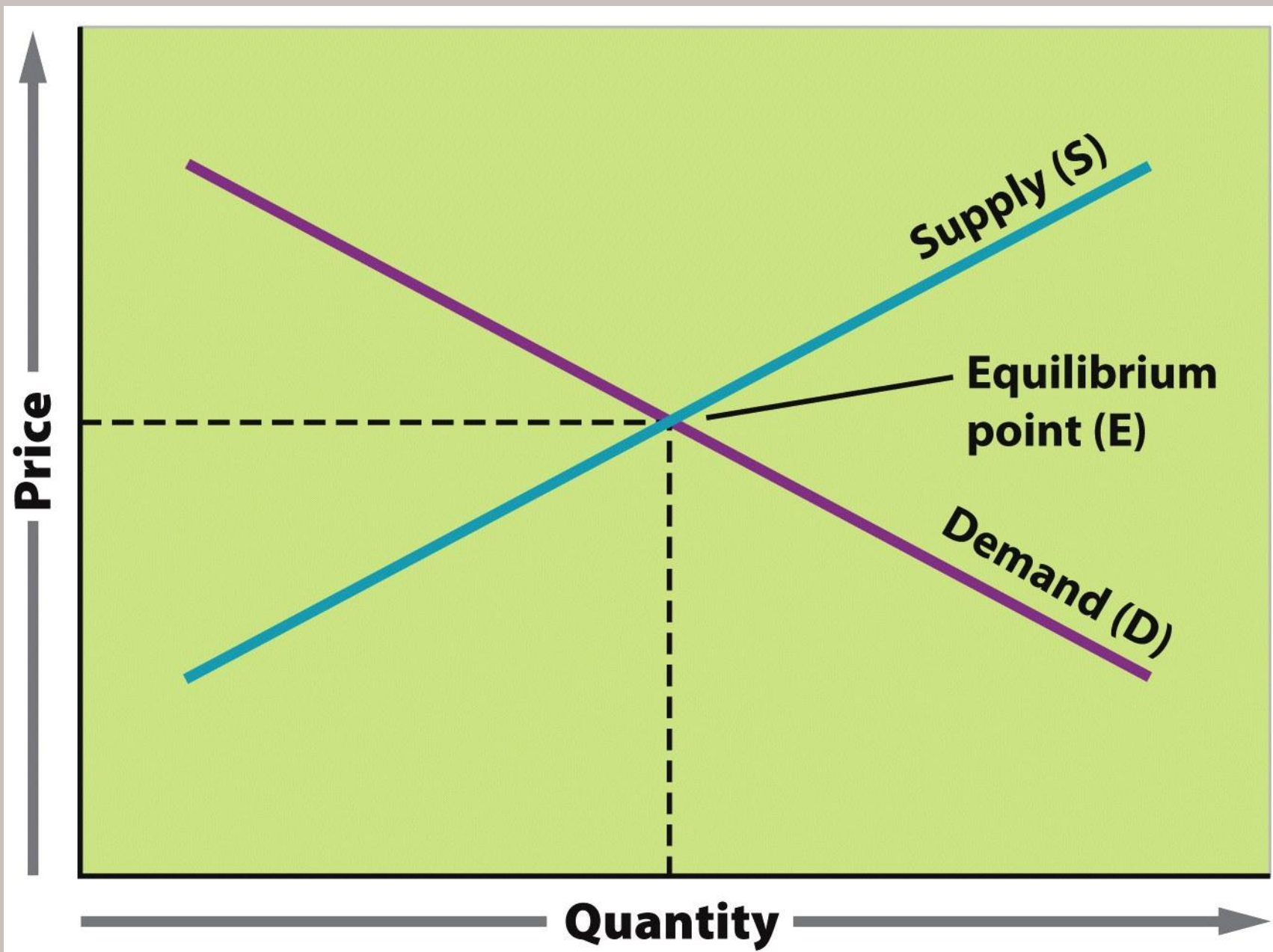


Figure 20.1  
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# Equilibrium

- When the price of a good comes to an equilibrium point and the two curves (S and D) intersect on the graph.
- At this price, suppliers find it worthwhile to supply exactly as many of the product as consumers are willing to buy.

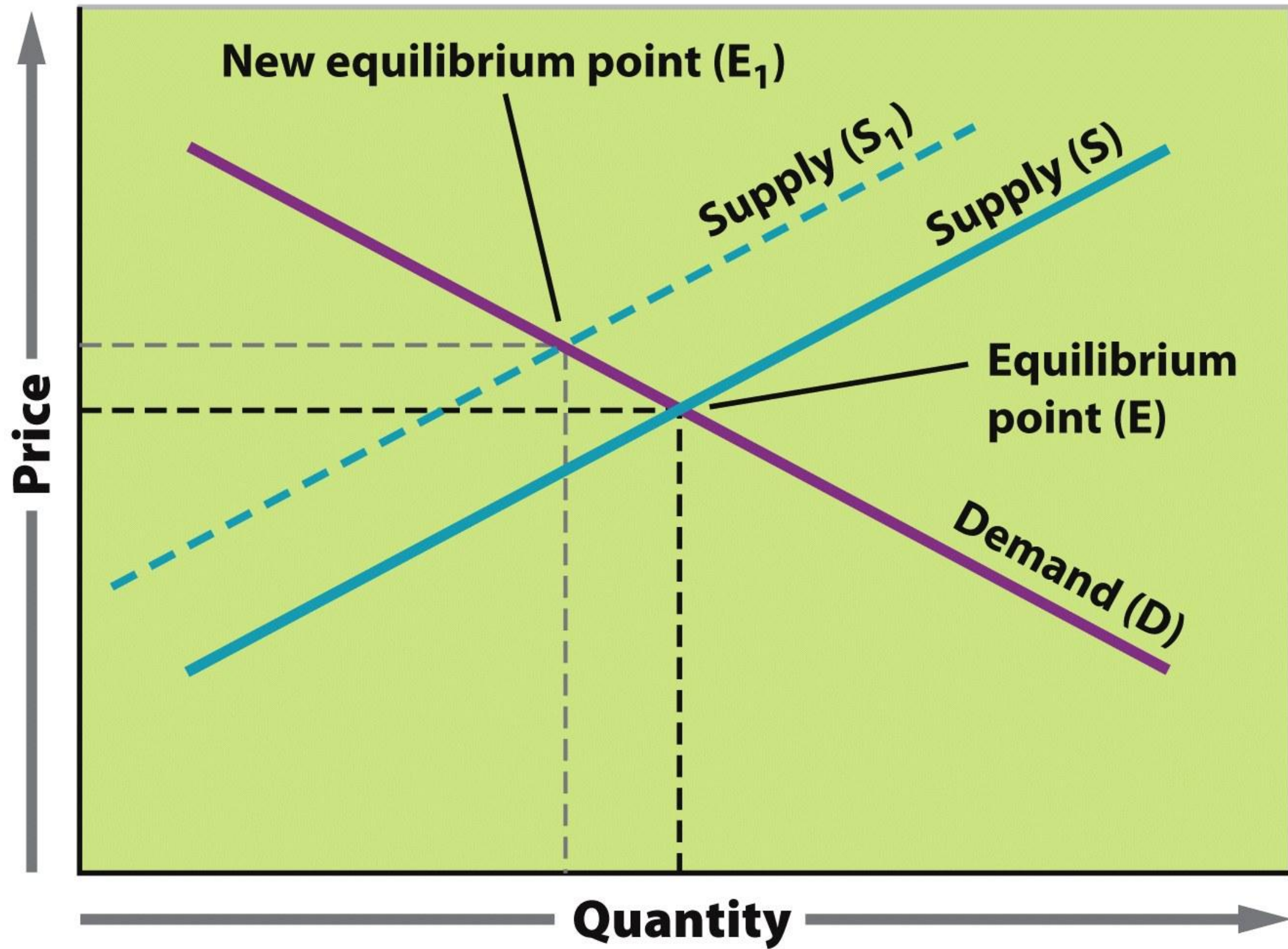




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# Externalities

- ▣ The costs or impact of a good or service on people and the environment not included in the economic price of that good or service.
- ▣ Ex. costs of using common resources such as water, air, land, or the oceans and the costs of air and water pollution or solid waste products.

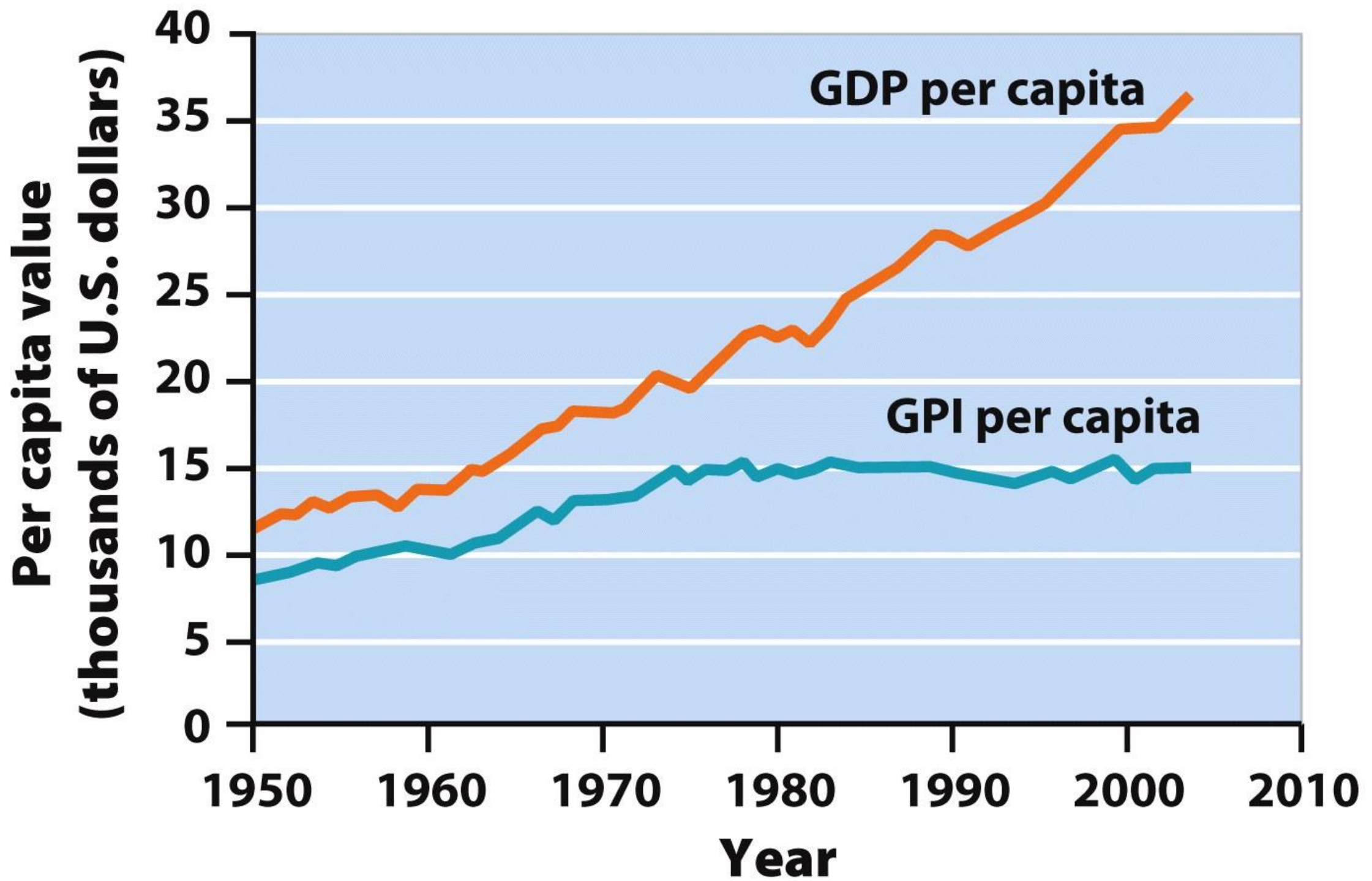


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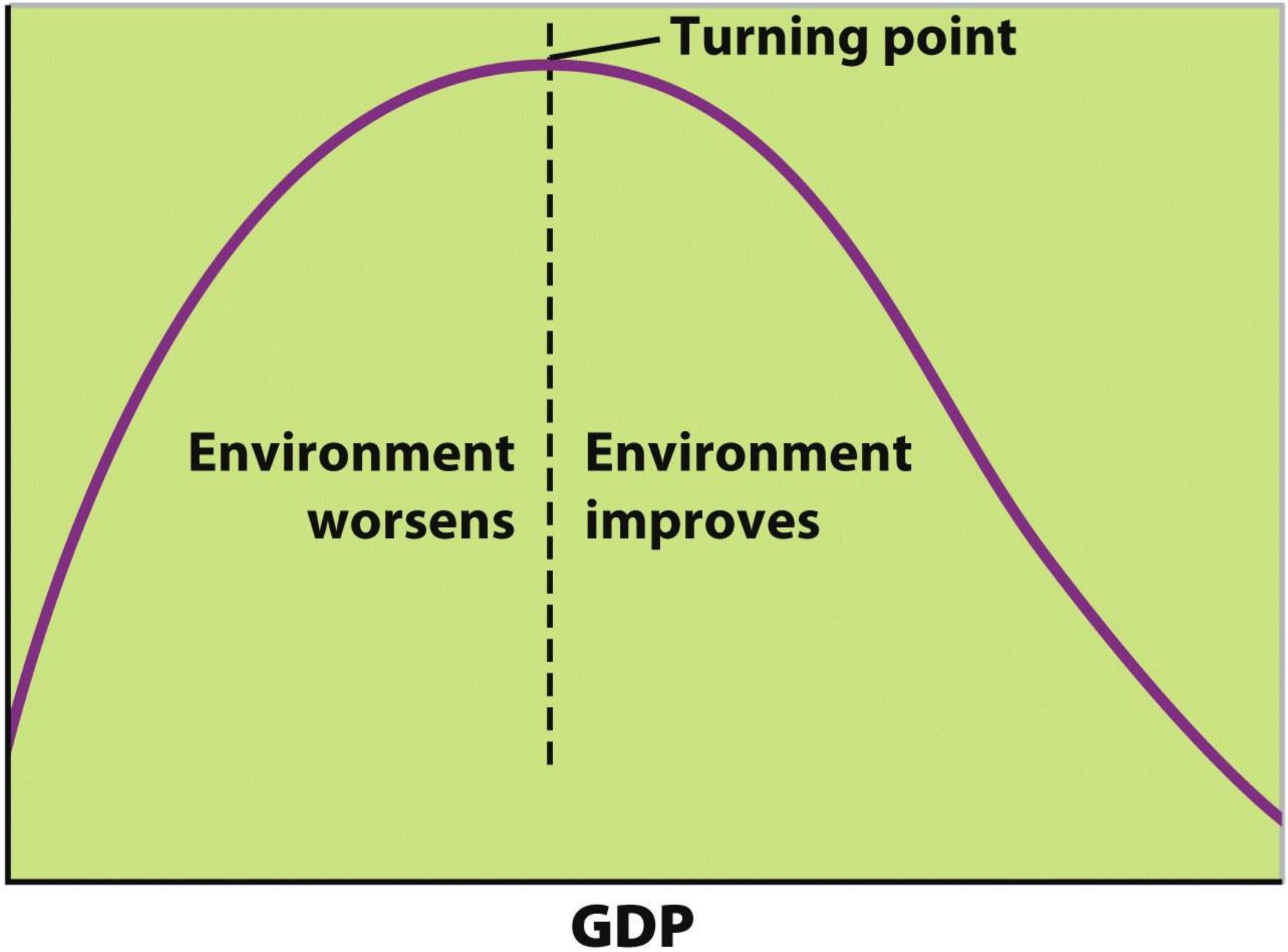
# Wealth and Productivity

- ▣ GDP (gross domestic product)- the value of all products and services produced in a year in a given country. GDP does not reflect externalities such as pollution.
- ▣ GPI (genuine progress indicator)- attempts to address this shortcoming by including measures of personal consumption, income distribution, levels of higher education, resource depletion, pollution, and the health of the population.



**Figure 20.3**  
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**Environmental degradation**



**Figure 20.4**

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- These apply mostly to developed countries
- How does a developed country help other country's increase their well being?

# Microlending

- The practice of loaning small amounts of money to people who intend to start a small business in less developed countries.

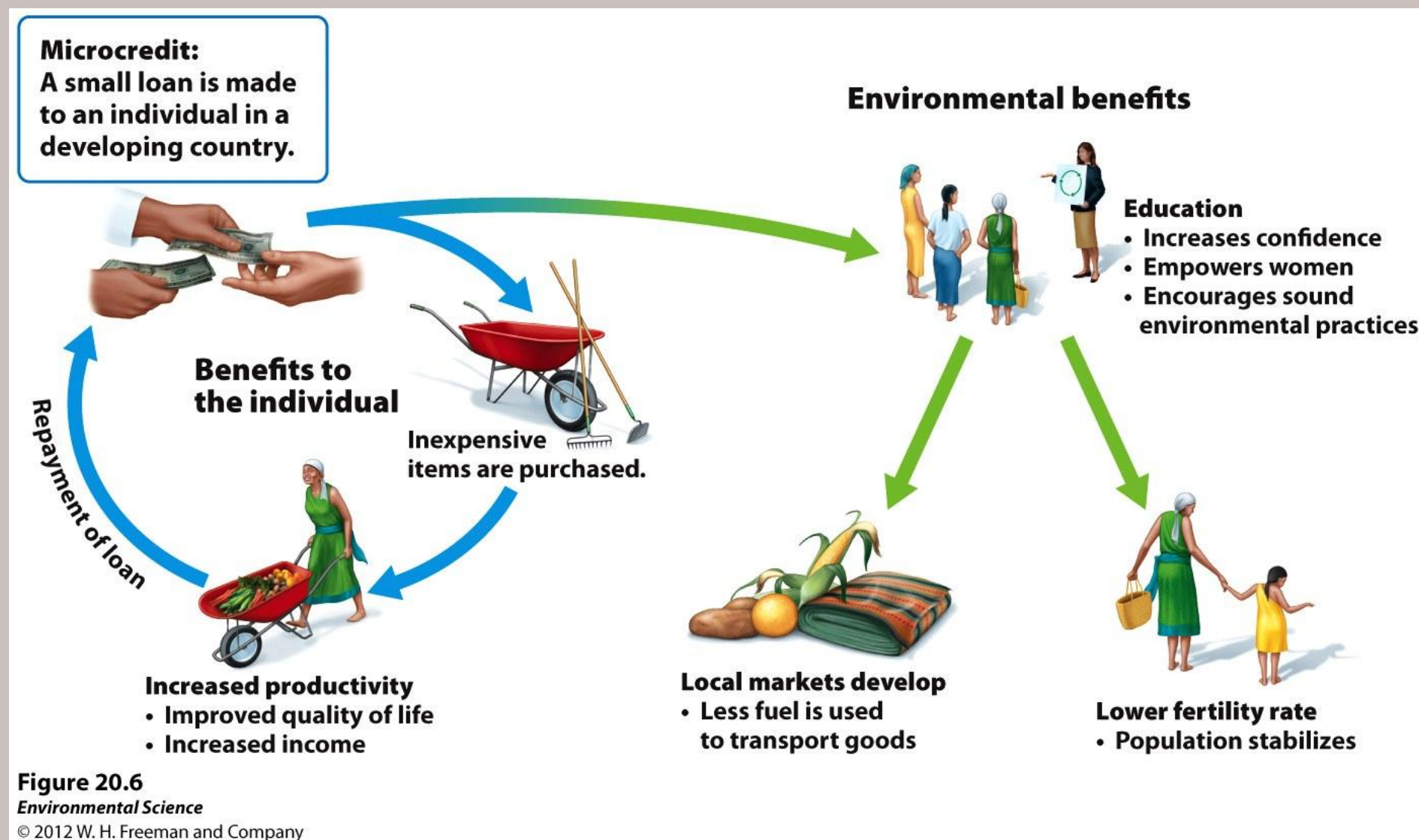


Figure 20.6  
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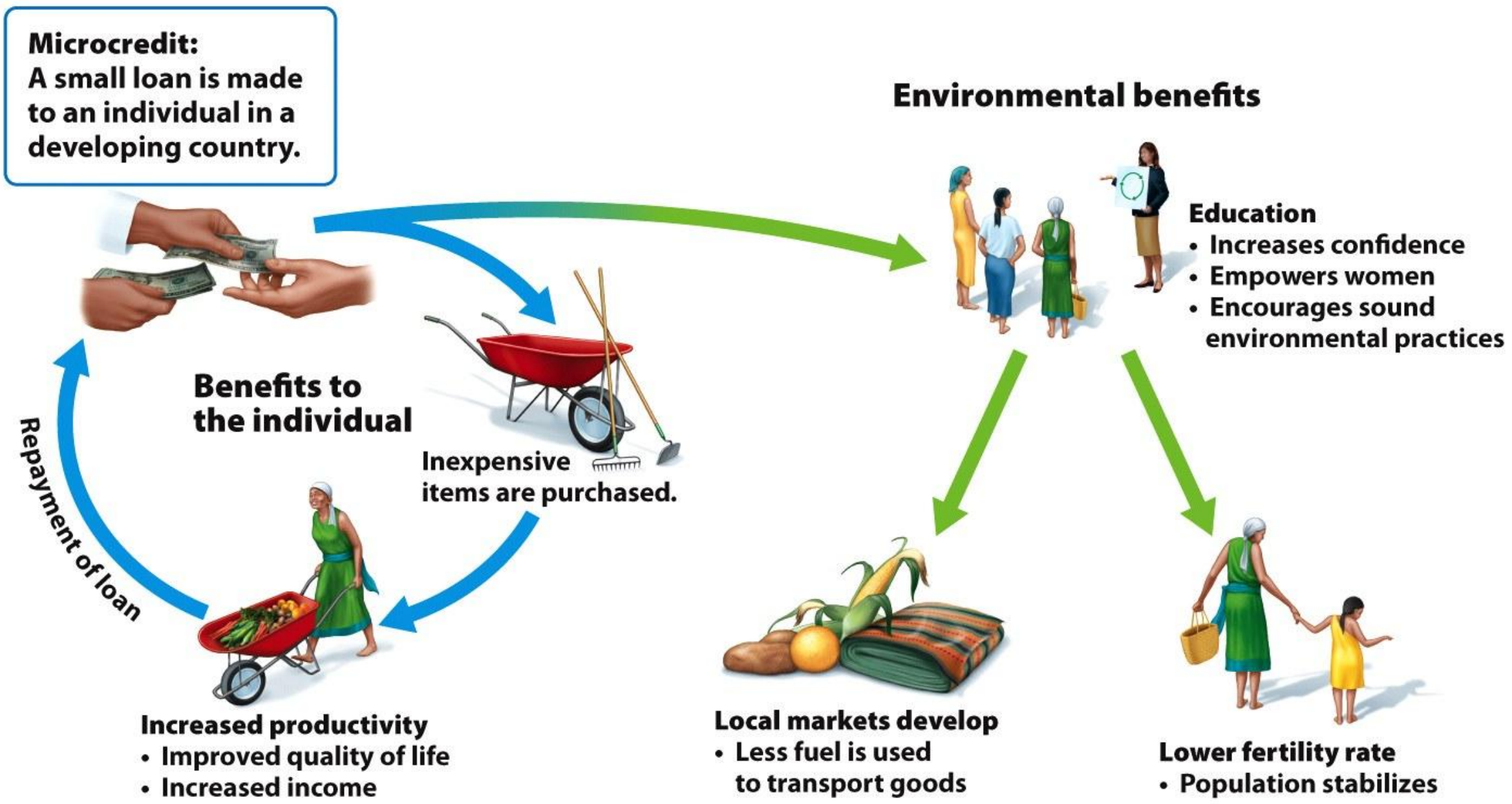
- How do the laws of supply and demand influence the price of a good or service?
- How do GPI and Kuznets curve address the shortcomings of GDP and a measurement of a country's well being?
- What is micro-lending and how does it improve the lives of people and the environment in developing nations?





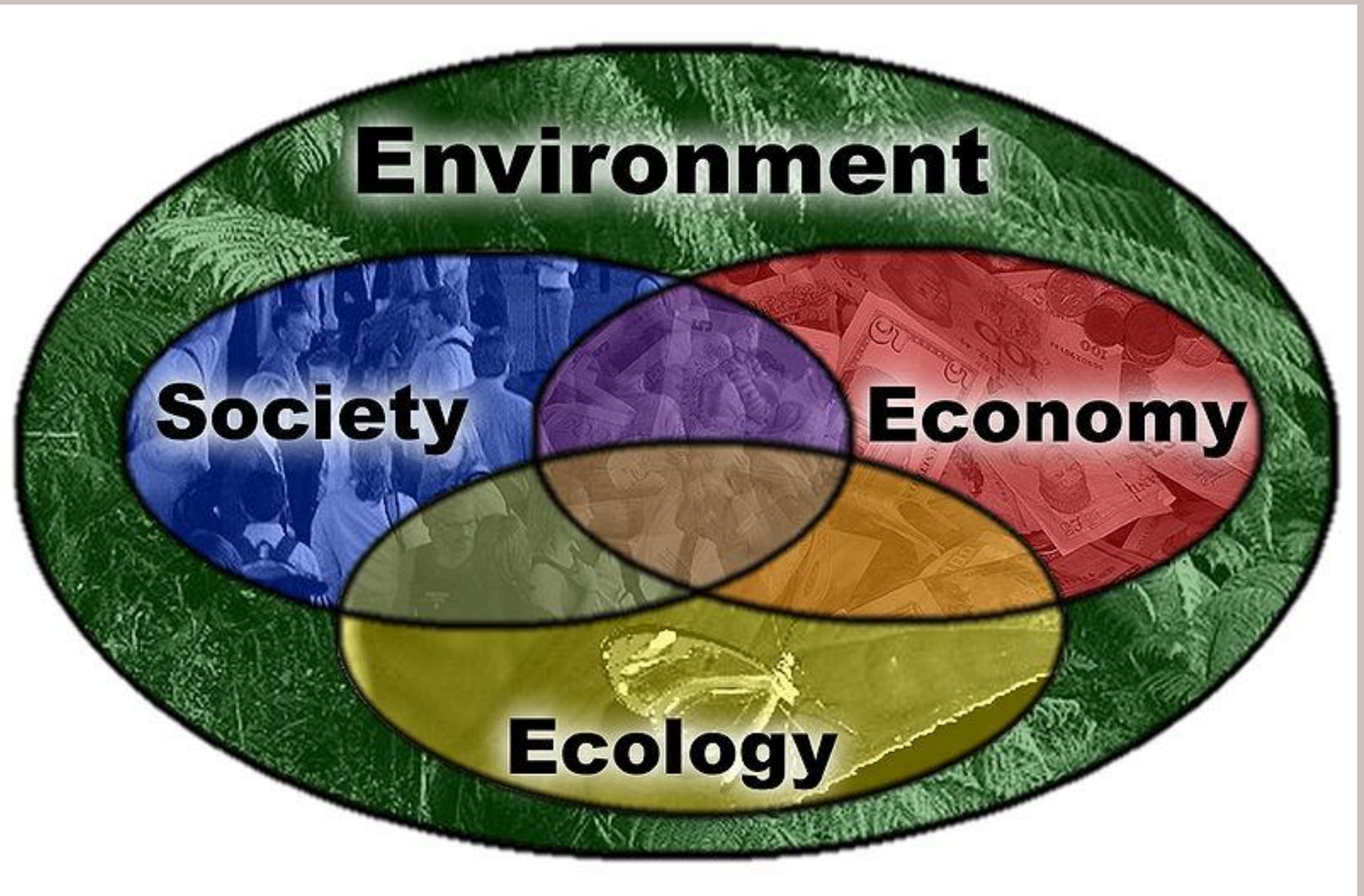
# Warm-Up 19APR2015

- What is micro-lending and how does it improve the lives of people and the environment in developing nations?



**Figure 20.6**  
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**Environment**

**Society**

**Economy**

**Ecology**





# Warm-Up 20APR2016

How do GPI and Kuznets curve address the short-comings of GDP and a measurement of a country's well being?

Logistics:

Cumulative Final is Friday 4/22

APES Exam is May 2<sup>nd</sup>, 8am

Study, Study, Study is your only homework

Well being: the status of being healthy, happy, and prosperous.

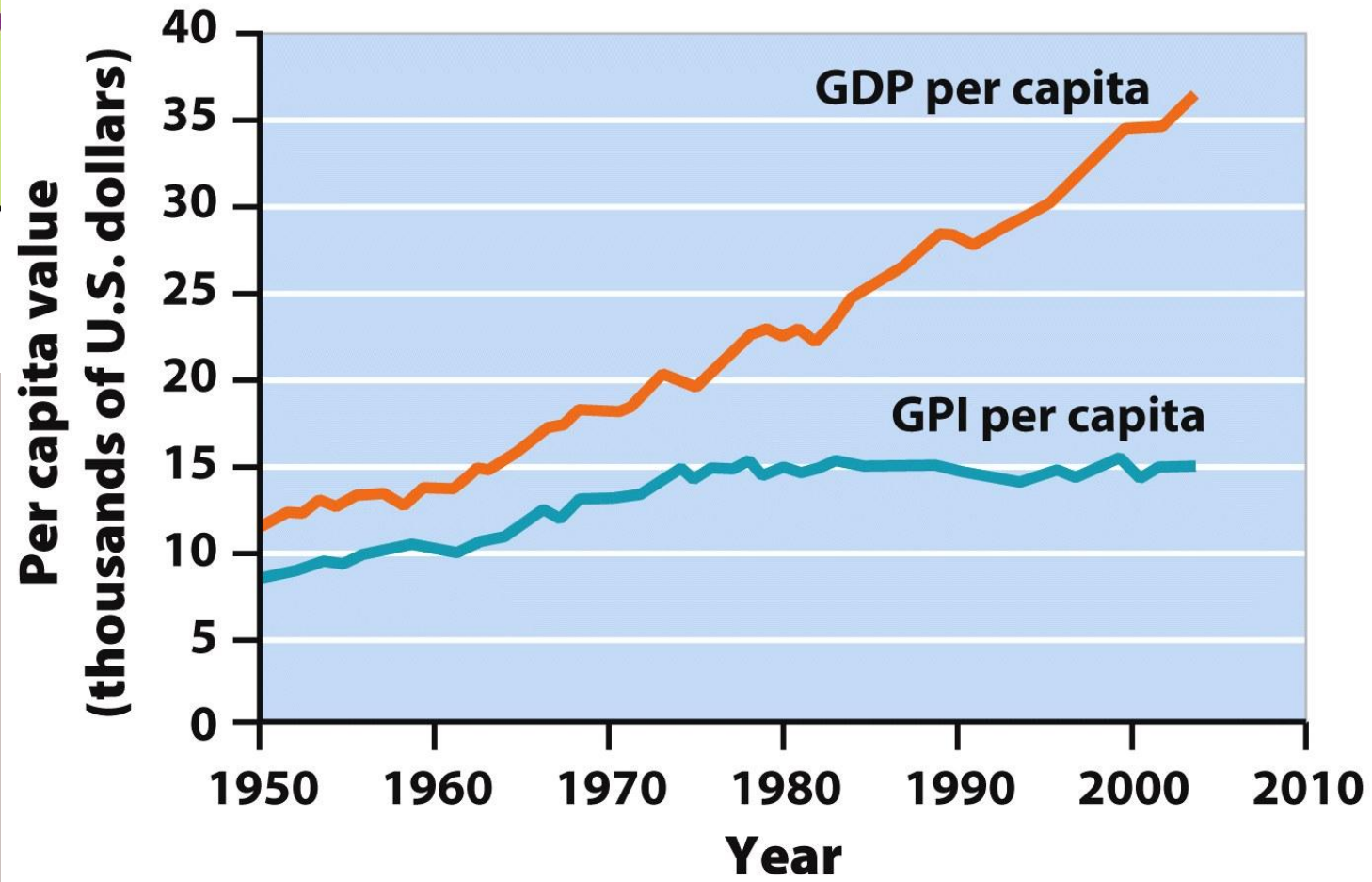
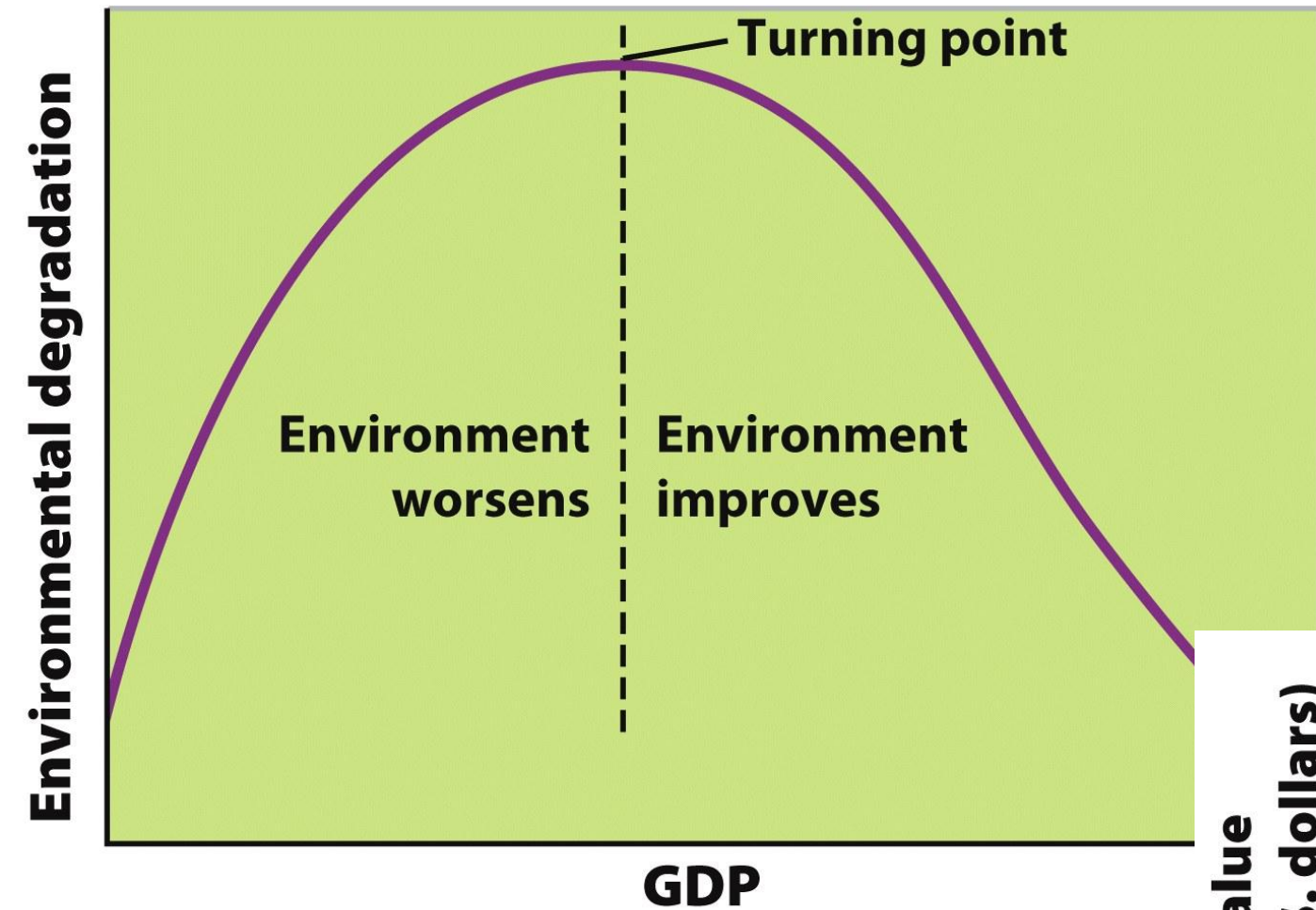
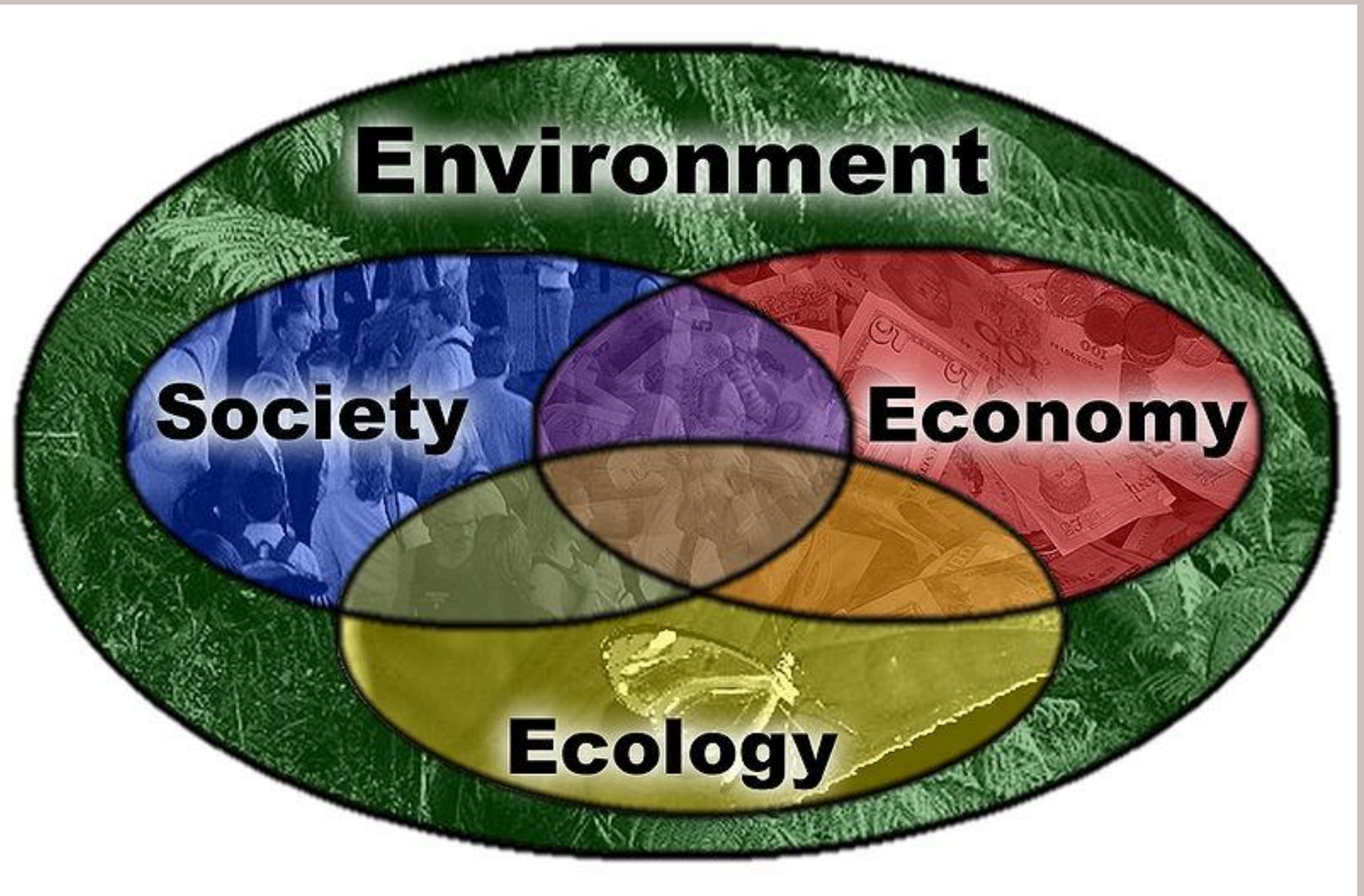


Figure 20.4  
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Figure 20.3  
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**Environment**

**Society**

**Economy**

**Ecology**

- Economic health is grounded in the availability of:
  - natural capital
  - human capital
- Manufactured capital (combining the 2)

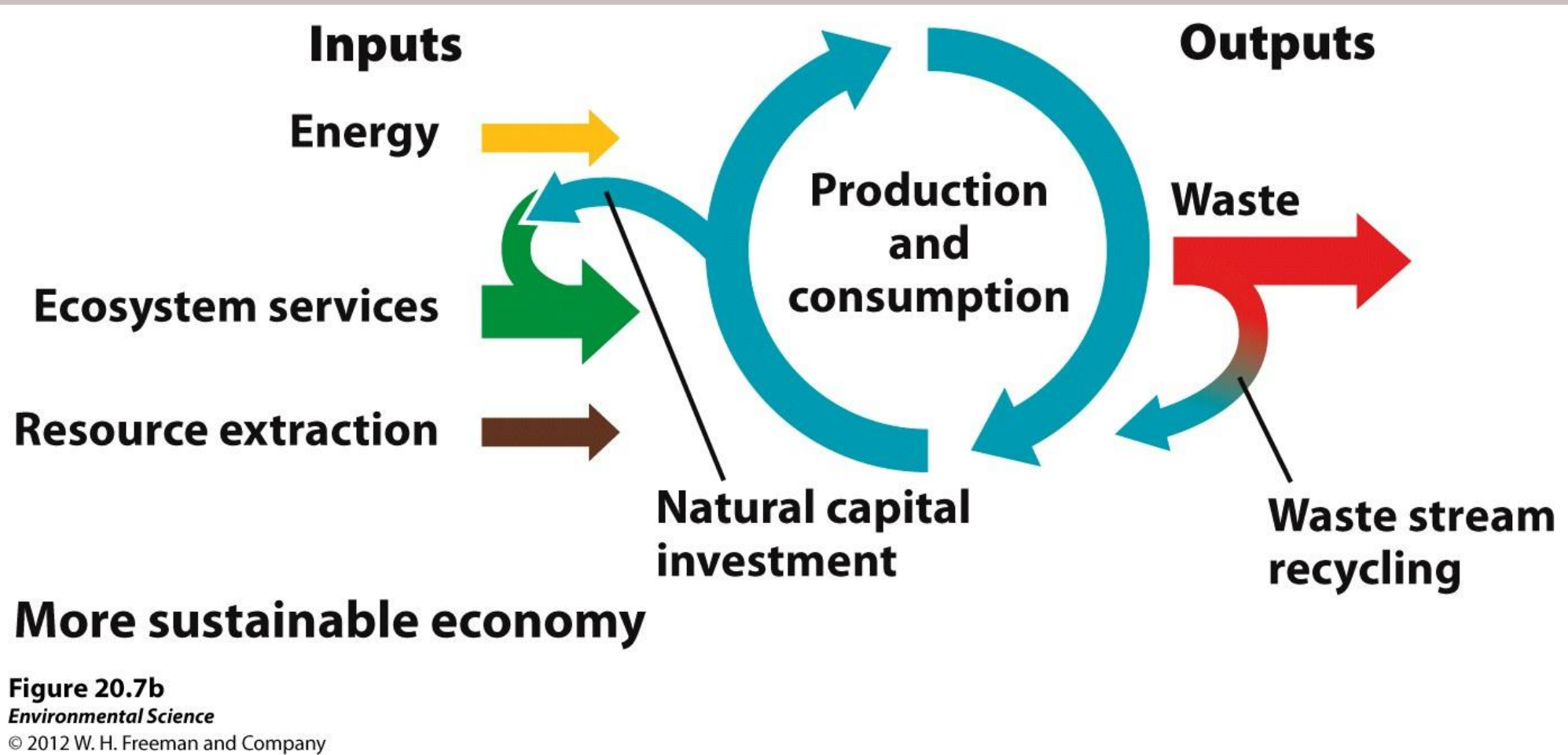
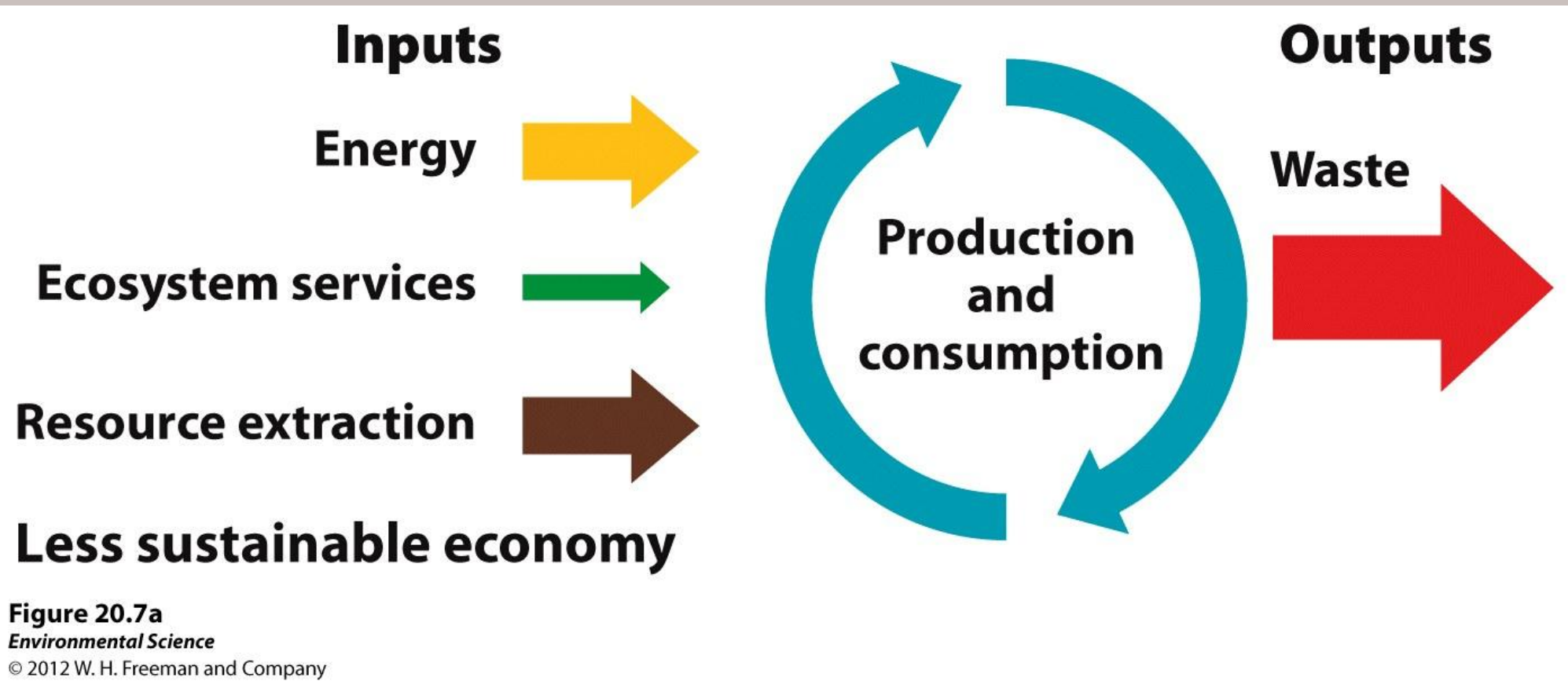


# Market Failure

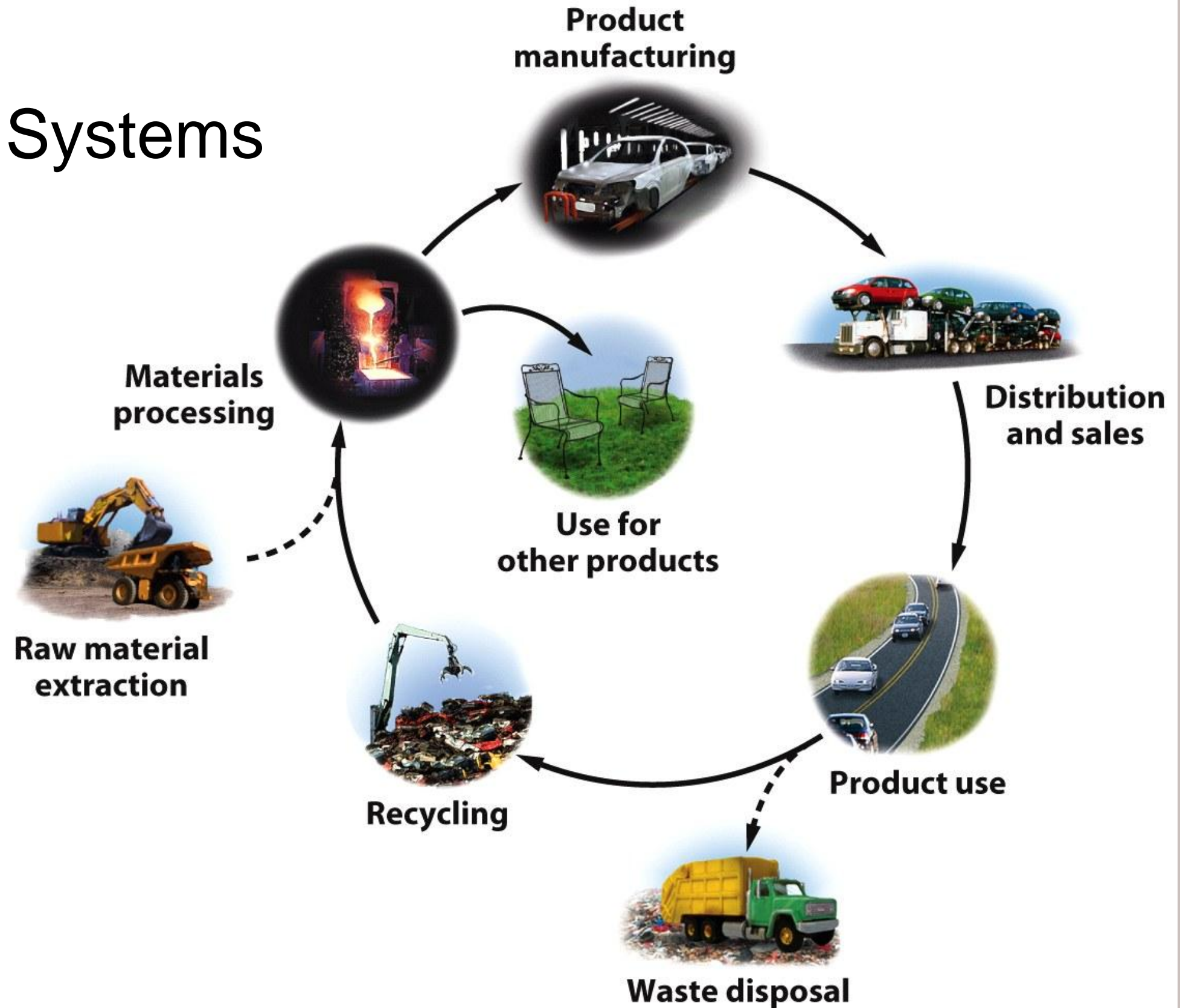
- When the economic system does not account for all the costs involved with the product



- This led to the development of environmental (ecological) economics
- Valuation: puts a dollar cost on intangible resources like clean air/clean water, etc.



# Cradle to Cradle Or Sustainable Systems



**Figure 20.8**  
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- What is capital? Name the 3 types of capital.
- What do environmental and ecological economics add to the study of economics?
- What are the features of sustainable economic system?

- Worldview or Values influence policy and behavior
- Aka: Ideas have power!

# Environmental Worldviews



- Anthropocentric- human-centered, considers that human beings have intrinsic value and nature should provide for our needs.
- Stewardship is a subset

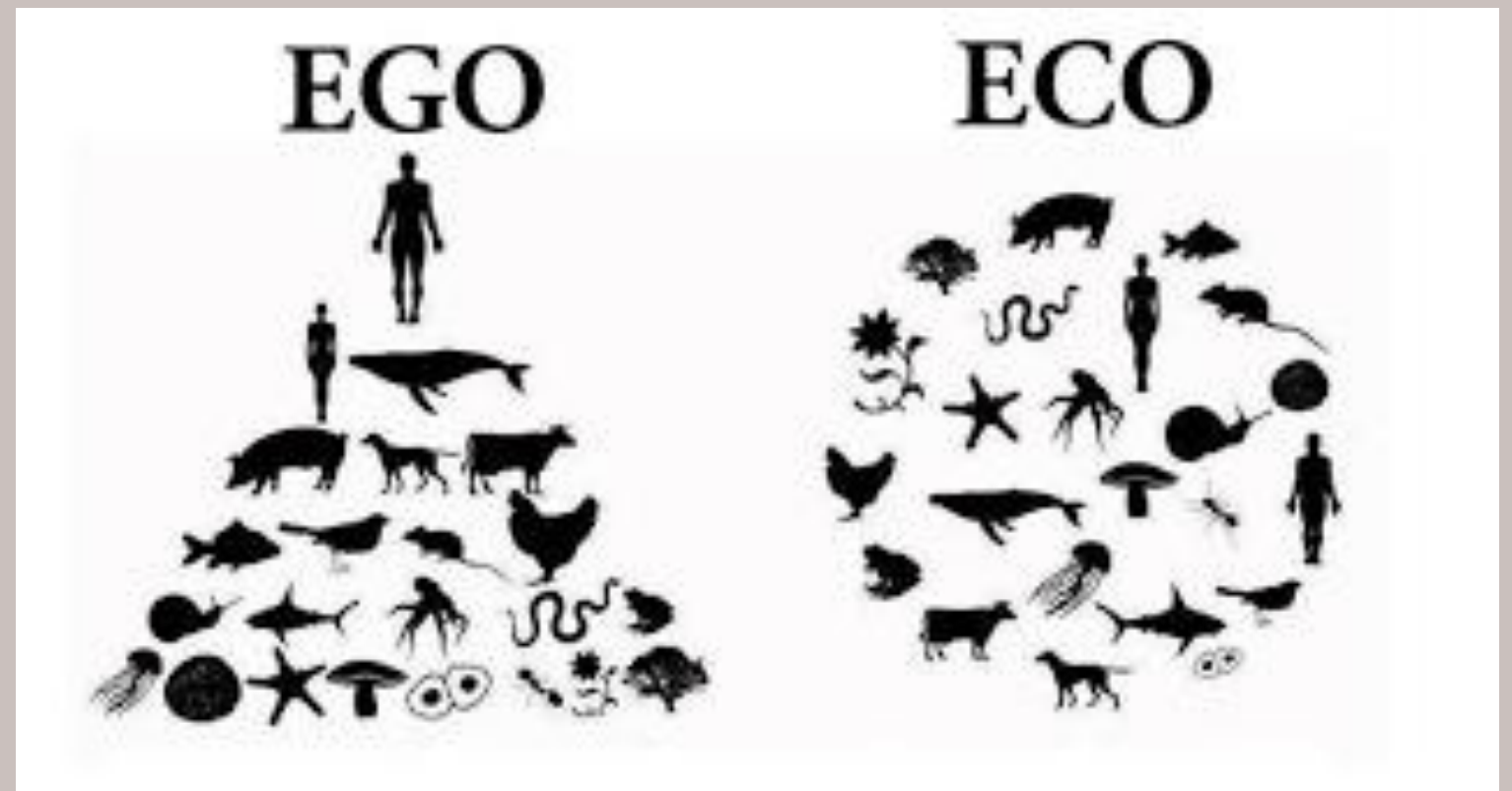
# Environmental Worldviews



- ▣ Biocentric- life-centered, says humans are just one of many species on Earth, all of which have equal value.

# Environmental Worldviews

- ▣ Ecocentric- Earth-centered, places equal value on all living organisms and the ecosystems in which they live, and it demands that we consider nature free of any associations with our own existence.





Ideas have power!

# Precautionary Principle

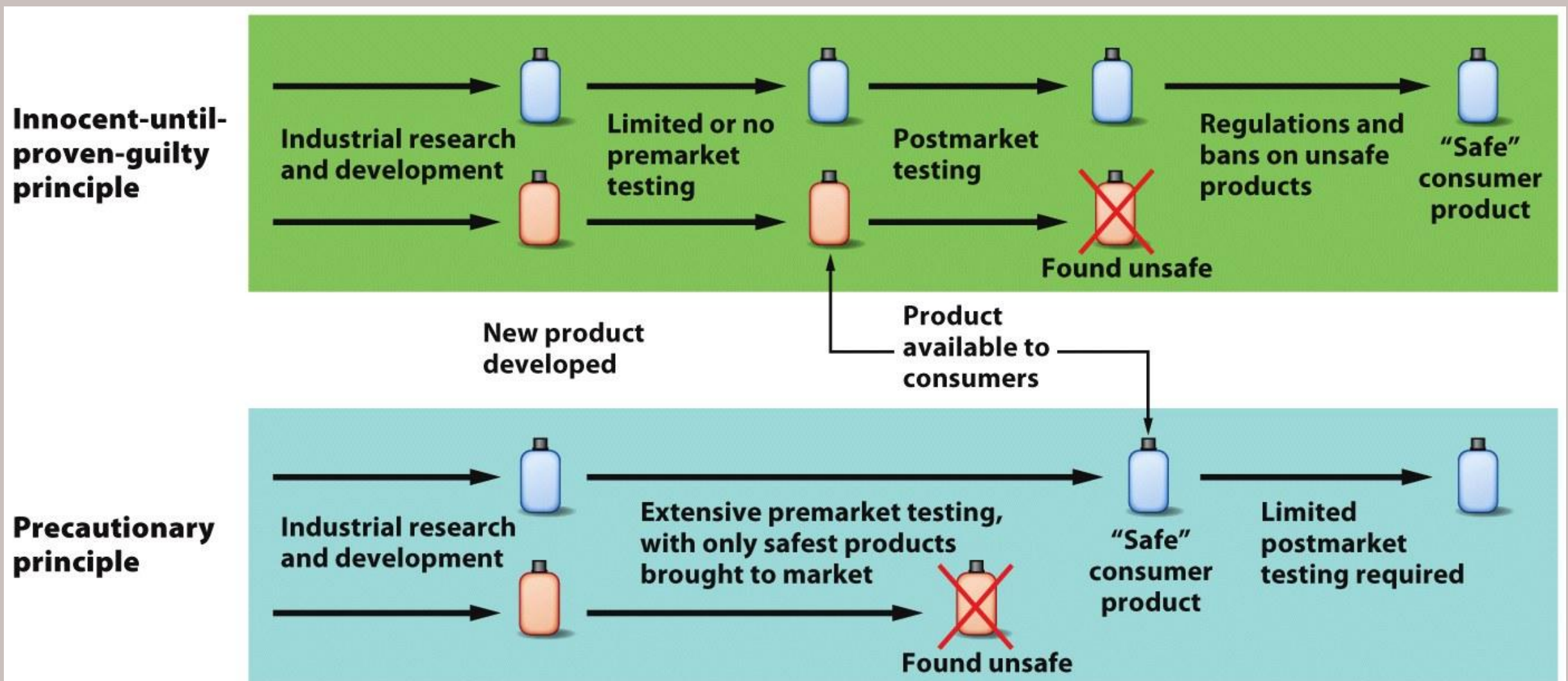


Figure 17.25

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- World view (or Values) will determine behavior of an individual AND the culture as a whole
- Agencies are put in place to protect or not protect the 3 kinds of capital

# World Agencies

- ▣ United Nations (UN) concerned with world peace
- ▣ United Nations Environment Program (UNEP) assess environmental problems, create international treaties like: Convention on Biodiversity
- ▣ The World Bank and IMF, create infrastructure, financial systems, strengthen governments
- ▣ The World Health Organization (WHO) human health, health systems, disease control, research
- ▣ The United Nations Development Program (UNDP) concerned with democratic governments, poverty, environmental and energy issues



# United States Agencies

- ▣ The Environmental Protection Agency (EPA) develops, assesses and enforces environmental regulations to lessen environmental degradation
- ▣ The Occupational Safety and Health Administration (OSHA) prevent injuries and death in the workplace
- ▣ The Department of Energy (DOE) discovery, innovation, and environmental responsibility surrounding energy production

**TABLE 20.1****Major U.S. legislation for promoting sustainability**

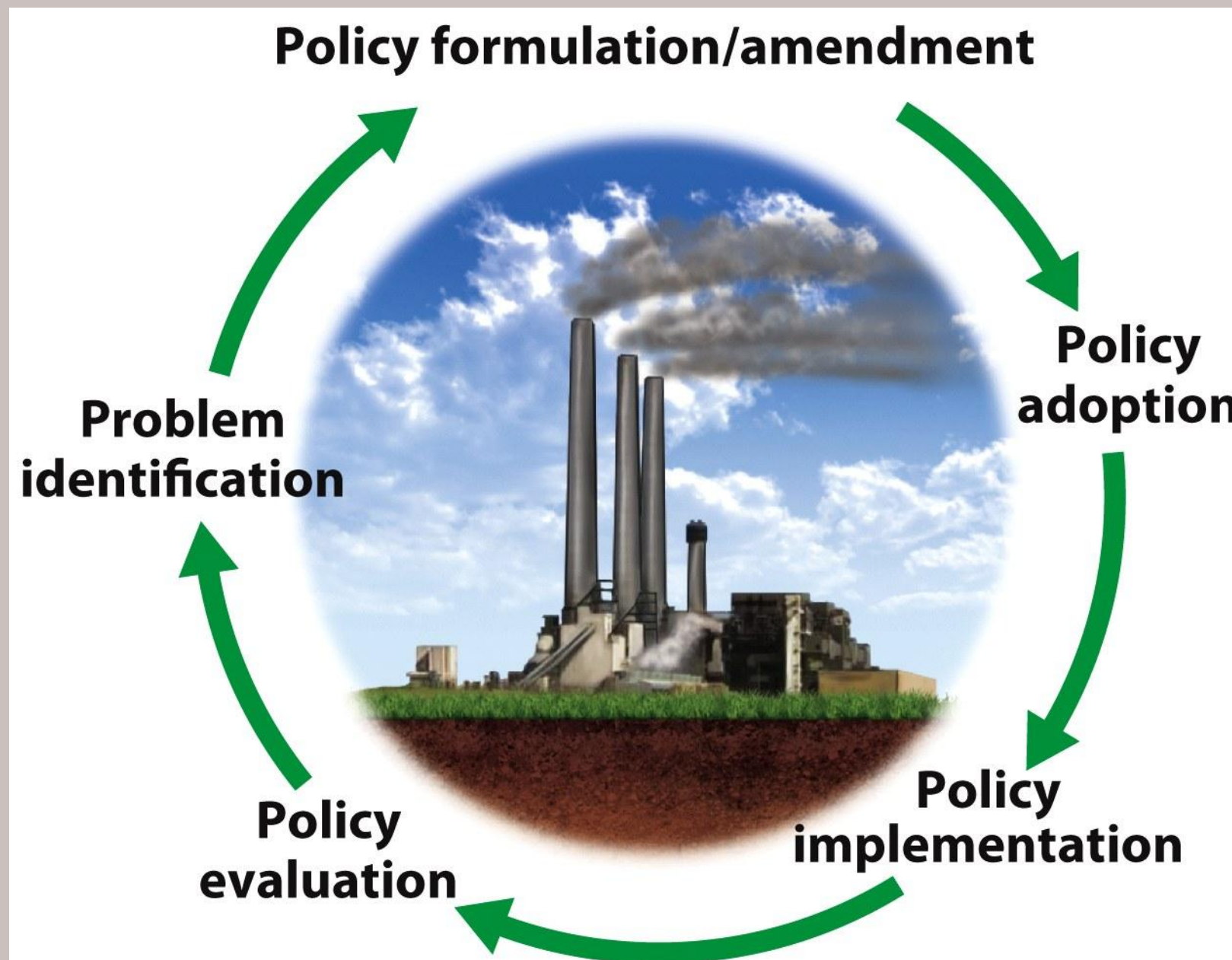
Act	Abbreviation	Year enacted	Purpose	Prime example of a success
National Environmental Policy Act	NEPA	1970	Enhance environment; monitor with a tool: the Environmental Impact Assessment	Protection of coral formation and sea turtles has occurred.
Occupational Safety and Health Act	OSHA	1970	Prevent occupational injuries, illness, death from work-related exposure to physical and chemical harm	Worker training and knowledge of toxins has increased.
Endangered Species Act	ESA	1973	Protect animal and plant species from extinction	Bald eagle, peregrine falcon, and gray wolf populations have recovered.
Clean Air Act	CAA	1970	Promote clean air	Sulfur dioxide reductions from cap-and-trade have occurred.
Clean Water Act	CWA	1972	Promote clean water	Swimmable and fishable rivers across the United States have increased.
Resource Conservation and Recovery Act	RCRA	1976	Govern tracking and disposal of solid and hazardous waste	Numerous brownfields and contaminated lands have been cleaned up.
Comprehensive Environmental Response, Compensation, and Liability Act	CERCLA, also called Superfund	1980	Force and/or implement the cleanup of hazardous waste sites	Dozens of Superfund sites have been cleaned up around the United States.

**Table 20.1***Environmental Science*

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- How might an environmental worldview influence environmental policy or regulation?
- How does the precautionary principle relate to scientific uncertainty?
- What are the major world agencies that are concerned with the environment? Describe their functions.

# Path to US policy



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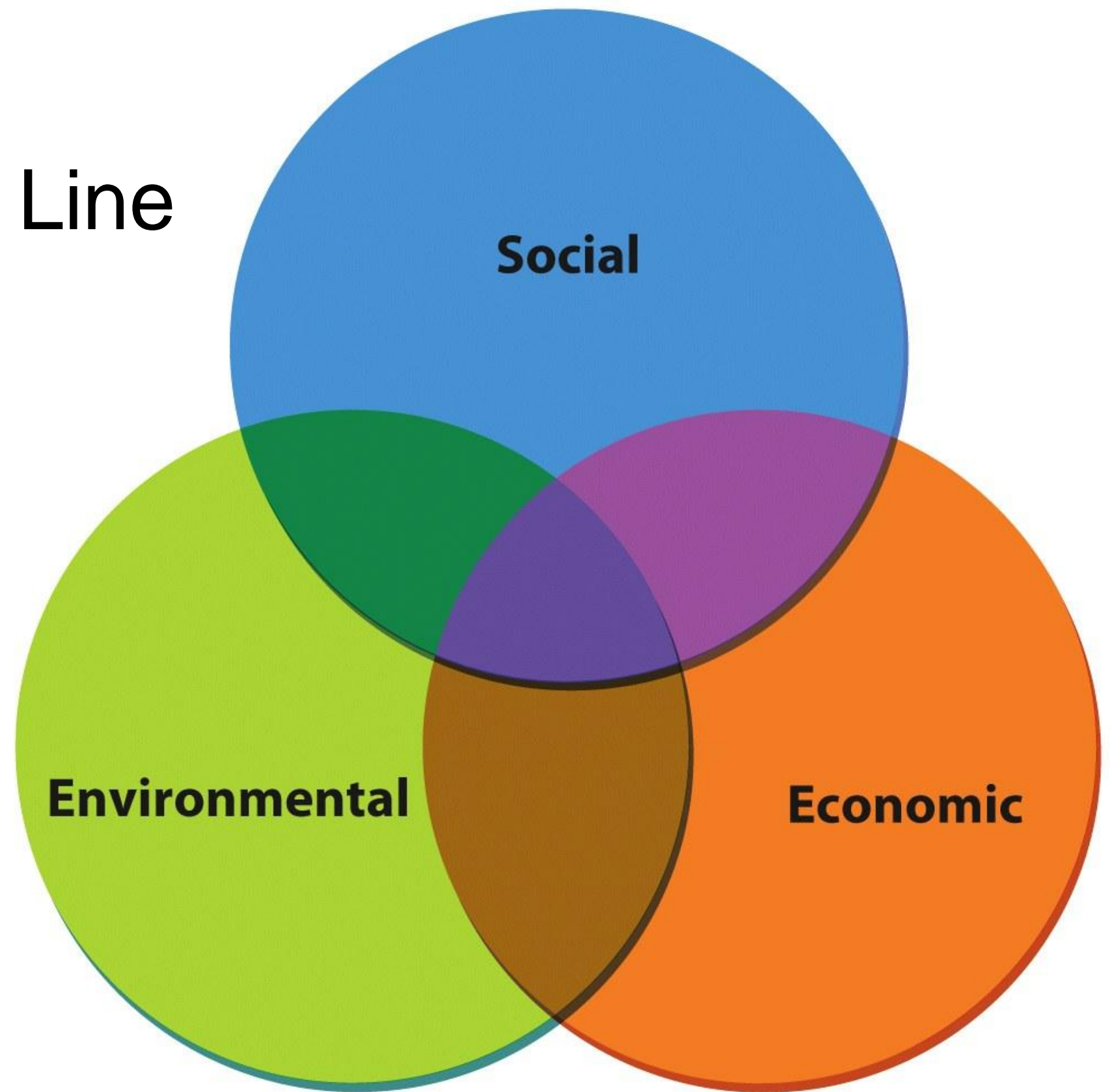


- Command and control: regulations for emissions and controls with fines or other punishments
- Incentive based approach: constructs financial incentives to lessen emissions
- Green tax: meant to tax externalities or other environmental impacts
- Cap and Trade is an example

# Sustainability

- Something is sustainable when it meets the needs of the present generation without compromising the ability of future generations to meet their own needs.

# Triple Bottom Line



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# Two roadblocks to sustainability

- Reducing Poverty
- Stewarding the environment



# Millennium Development Goals to reduce poverty

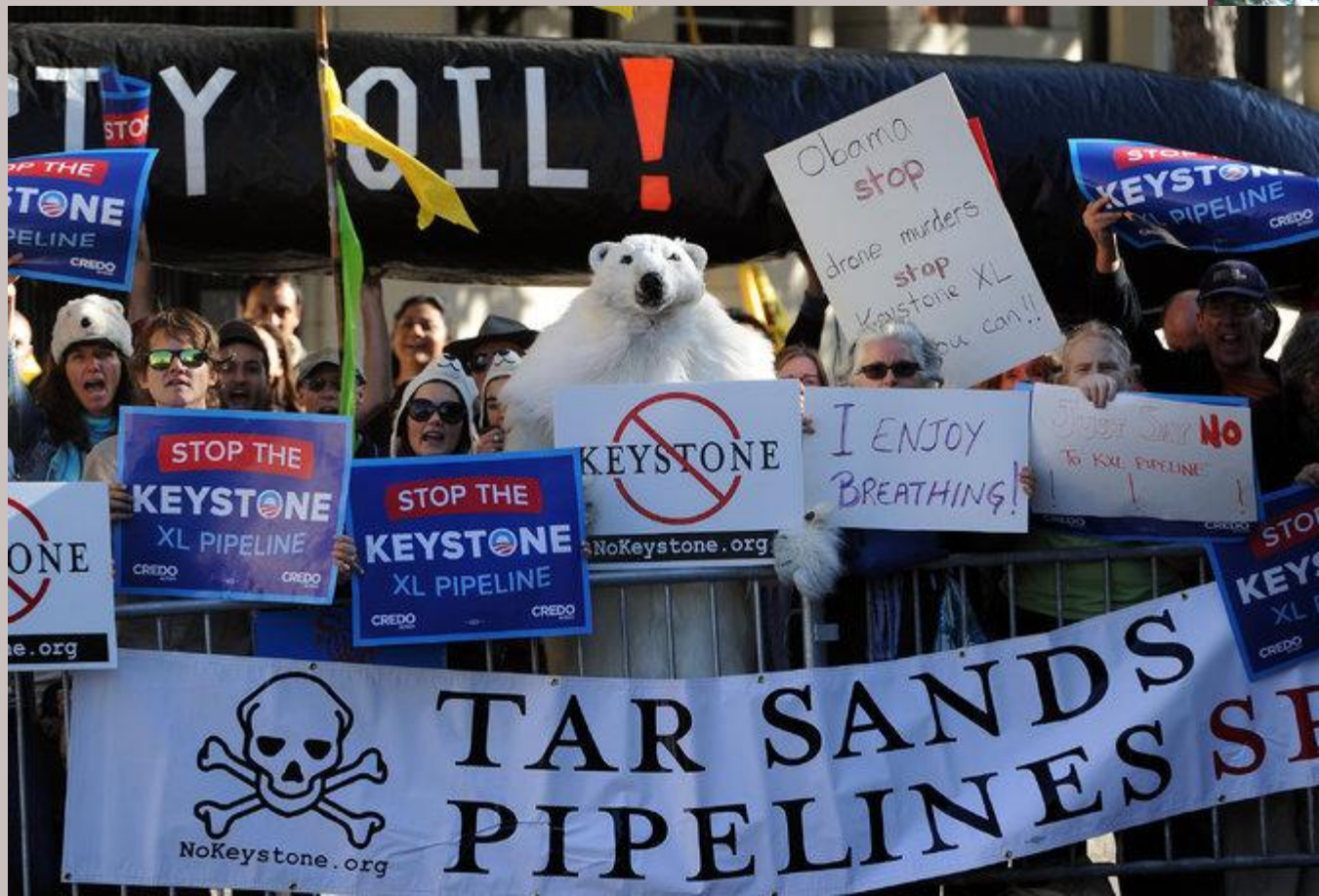
- ▣ Eradicate extreme poverty and hunger
- ▣ Achieve universal primary education
- ▣ Promote gender equality and empower women
- ▣ Reduce child mortality
- ▣ Improve maternal health
- ▣ Combat HIV/AIDS, malaria, and other diseases
- ▣ Ensure environmental sustainability
- ▣ Develop a global partnership for development

# Environmental Justice

- ▣ The inequitable distribution of pollution and of environmental degradation with their adverse effects on humans and ecosystems.
- ▣ People that are of lower incomes and minorities that have a disproportionate exposure to environmental hazards.



Individual and community actions make a difference and demonstrate to governments that the public desires policy changes







## Wangari Maathai Green Belt in Kenya

A values-driven society of people who consciously work for continued improvement of their livelihoods and a greener, cleaner world.

**Figure 20.14**

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# Vandana Shiva

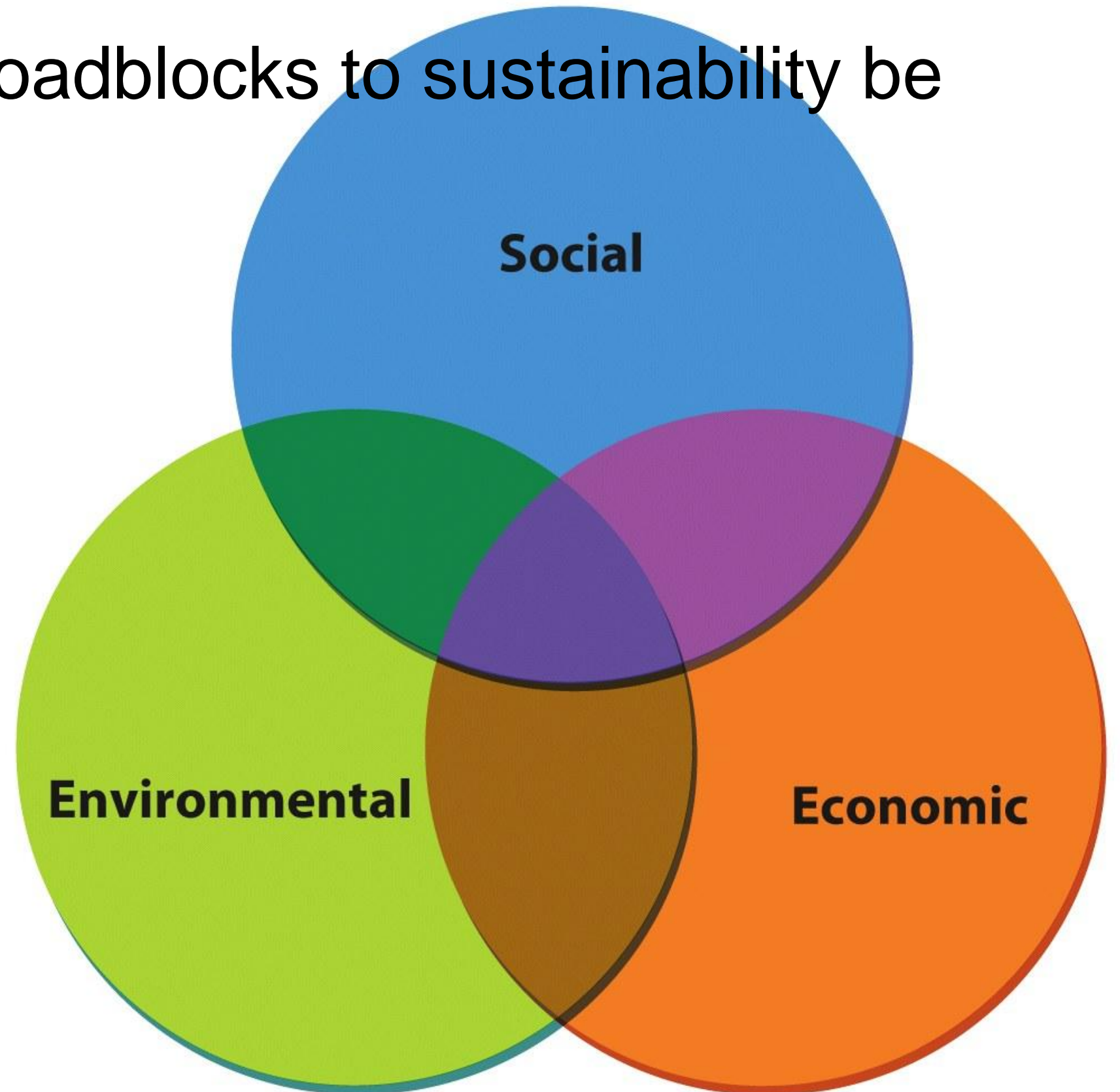
## Seed Freedom/ Farmers Rights







How can the roadblocks to sustainability be overcome?



**Figure 20.13**  
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