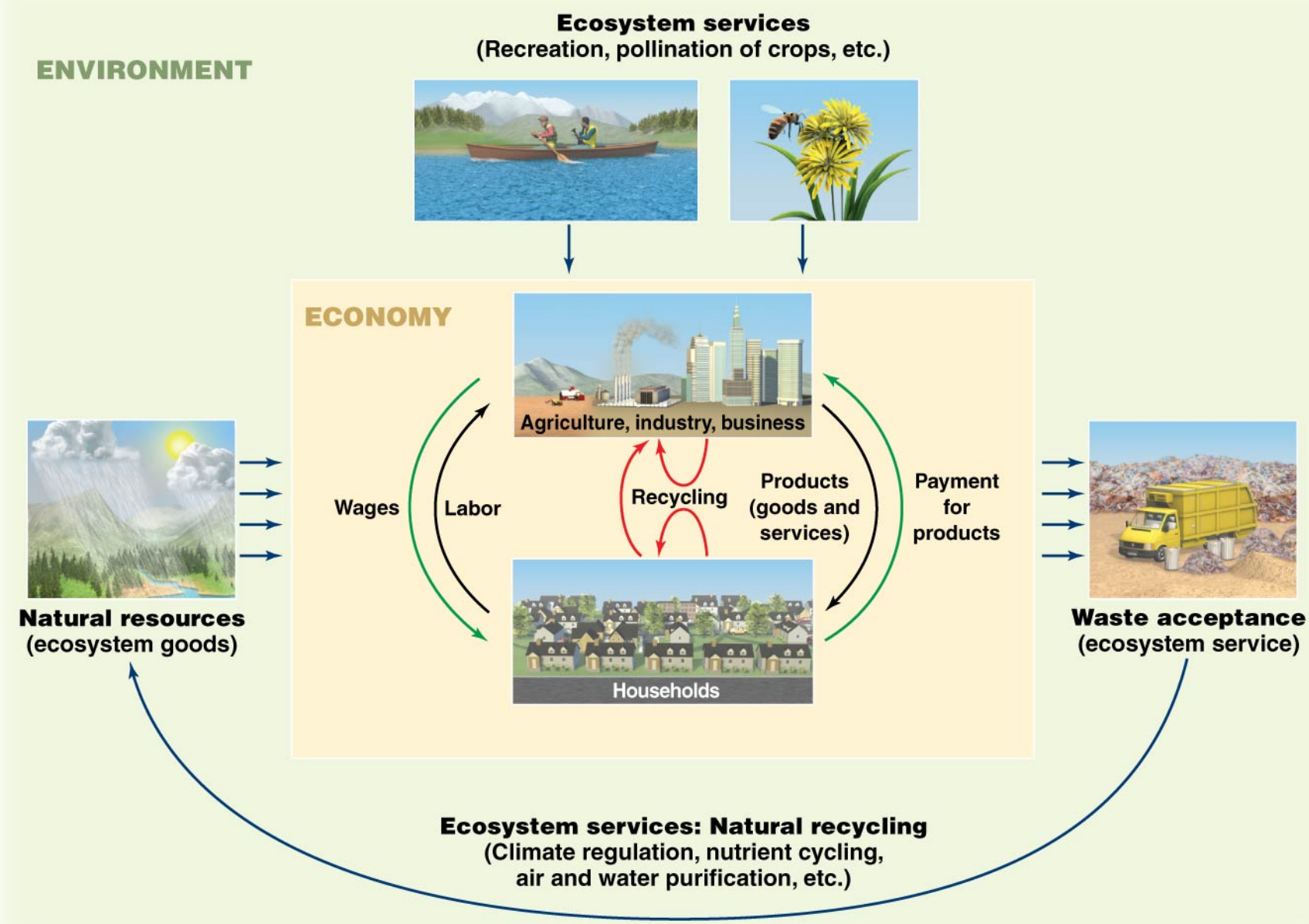

(a) Use value: The worth of something we use directly

(b) Existence value: The worth of knowing that something exists, even if we never experience it ourselves

(c) Option value: The worth of something we might use later

(d) Aesthetic value: The worth of something's beauty or emotional appeal

(e) Scientific value: The worth of something for research

(f) Educational value: The worth of something for teaching and learning

(g) Cultural value: The worth of something that sustains or helps define a culture

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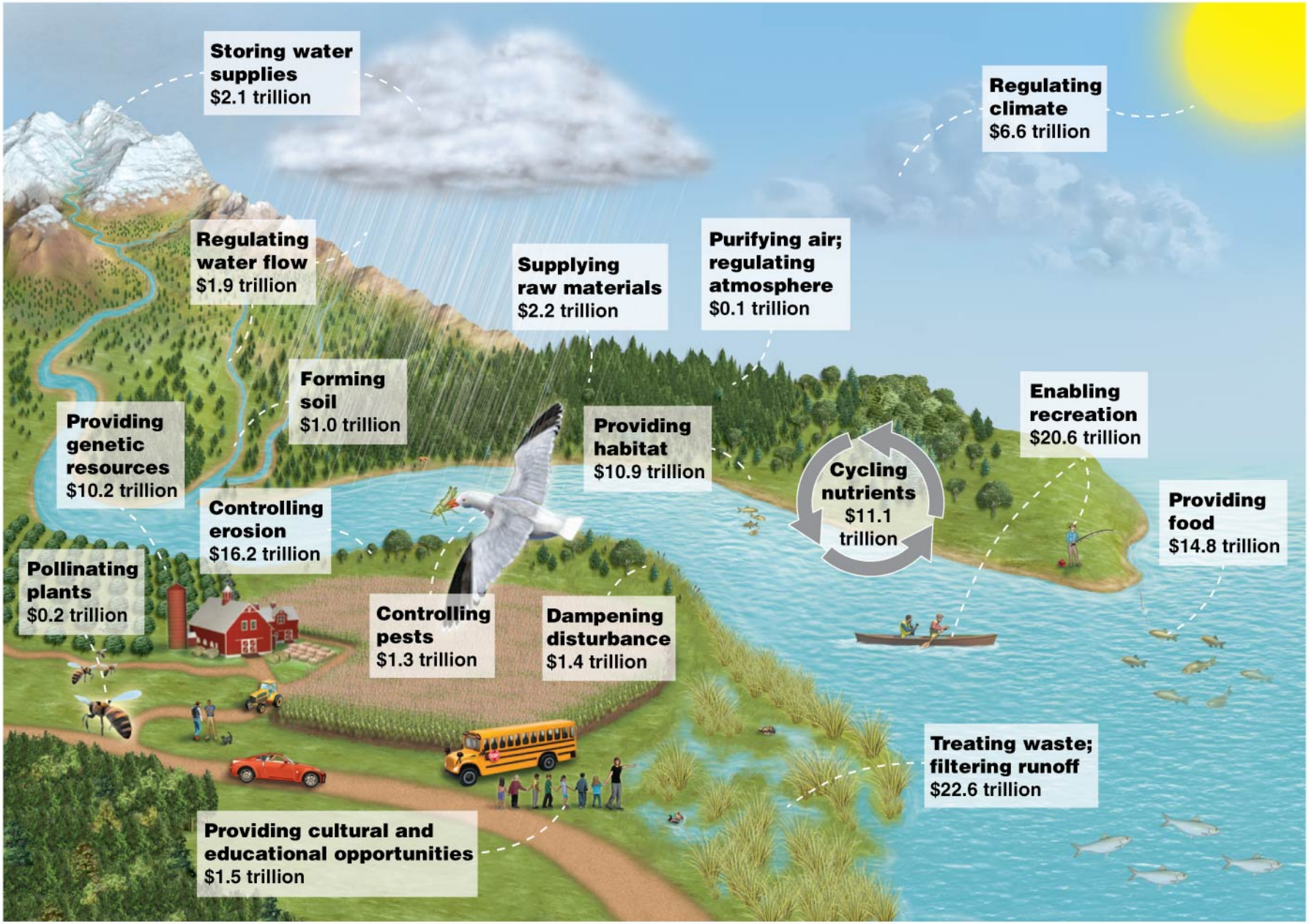
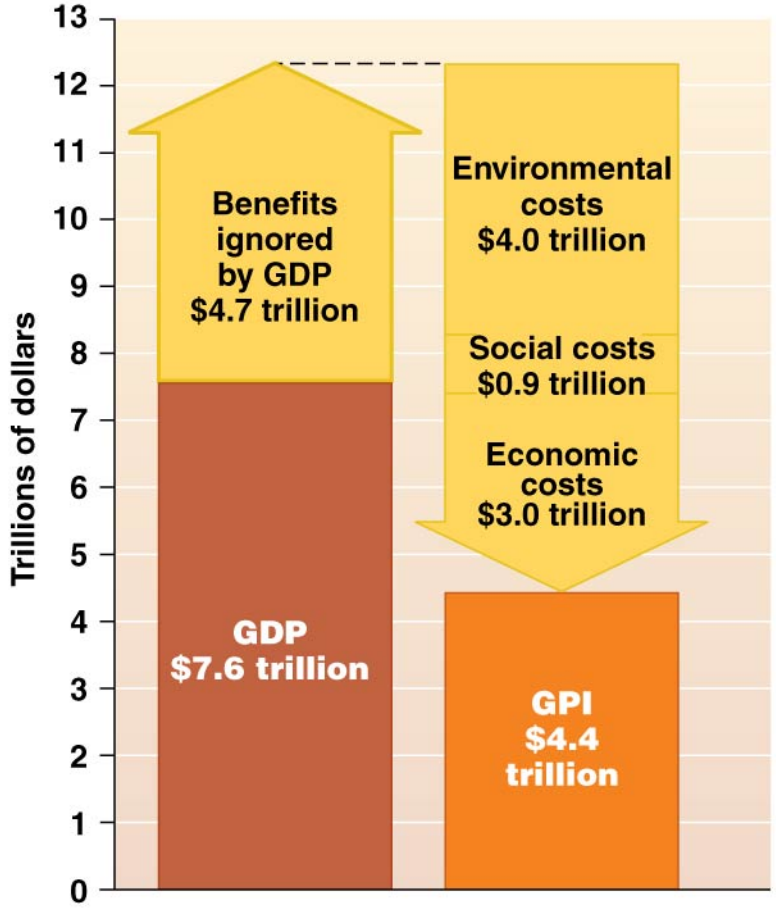
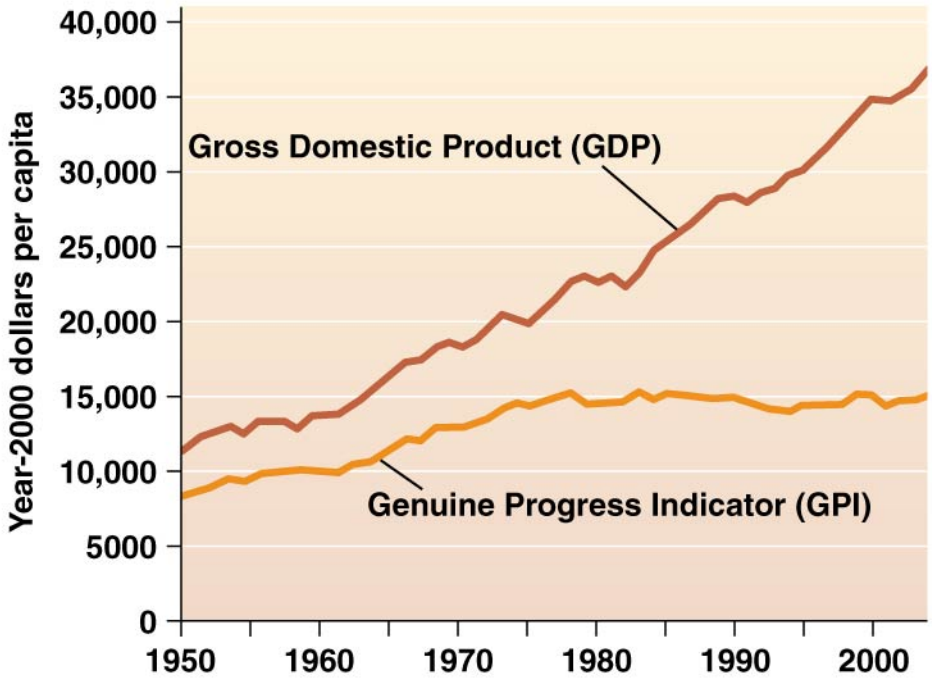
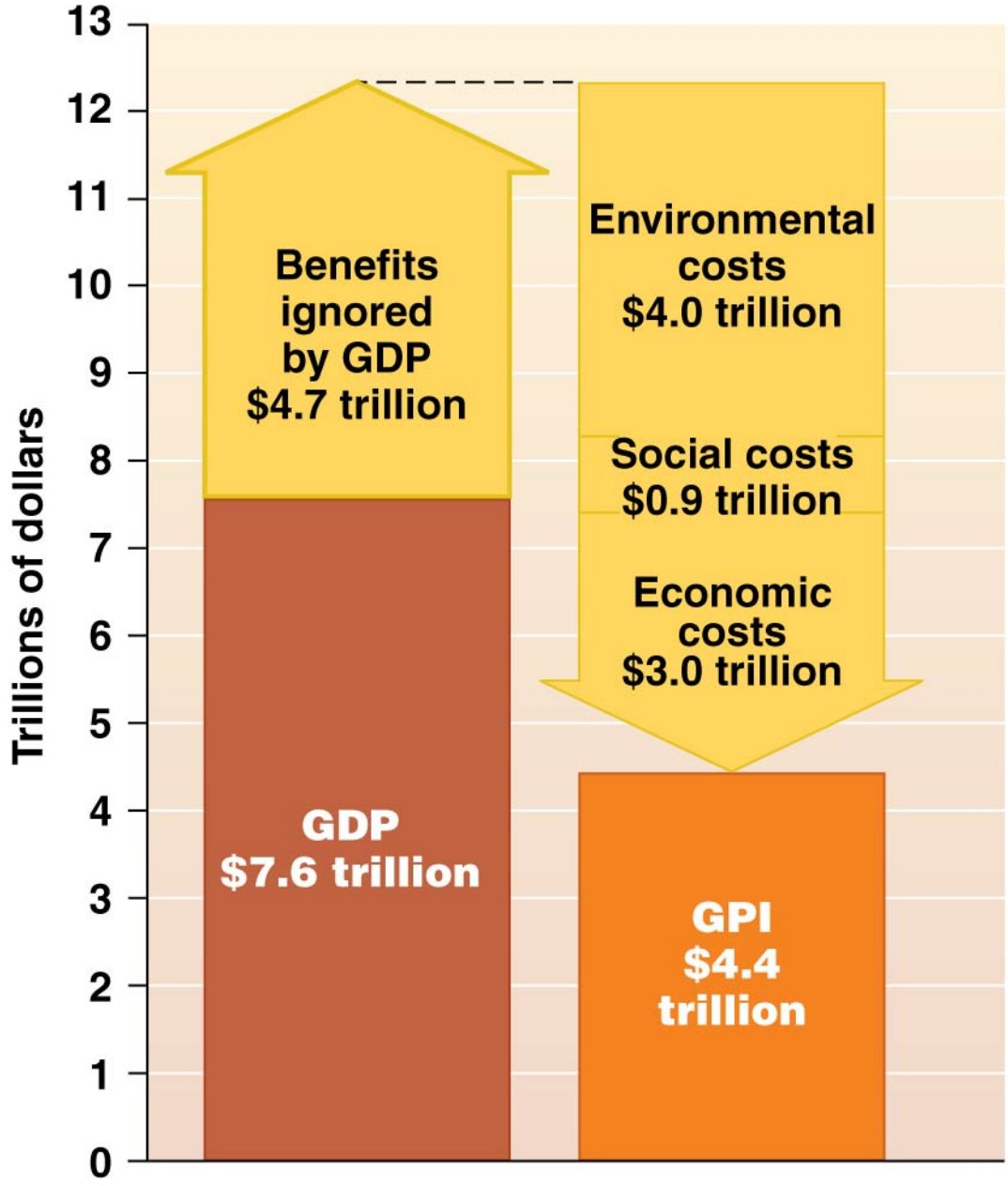




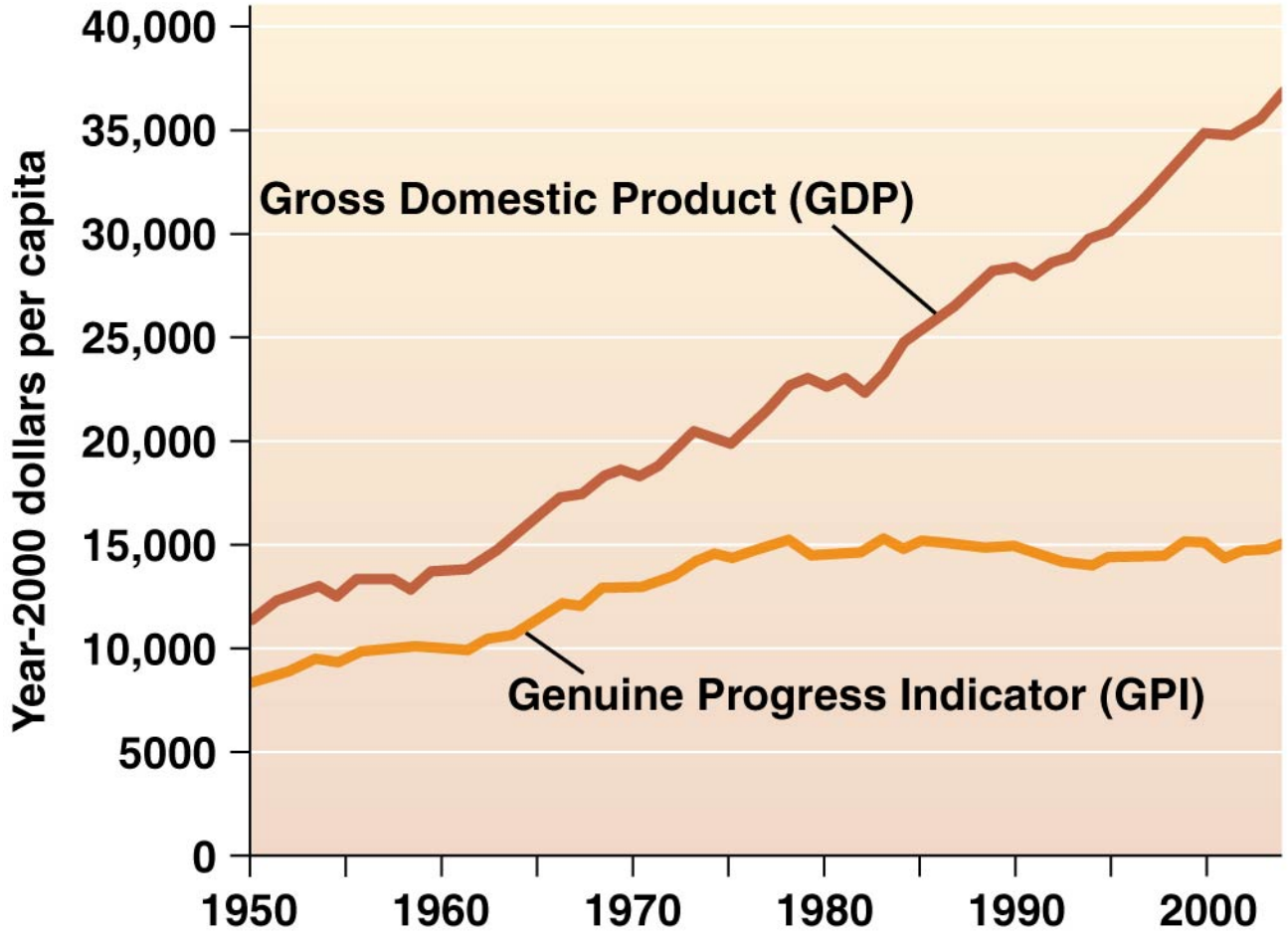
(a) Components of GPI



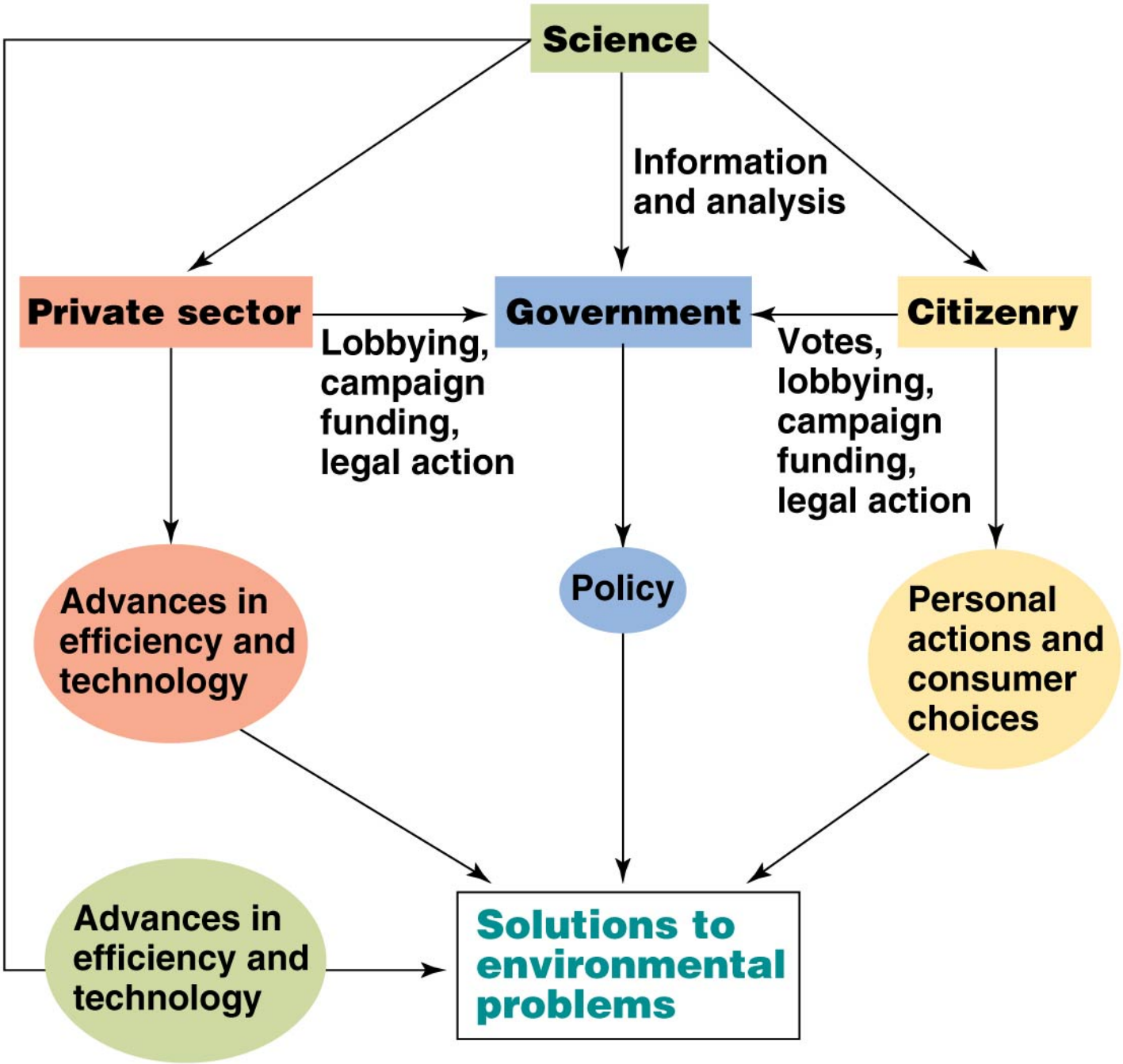
(b) Change in U.S. GDP vs. GPI



(a) Components of GPI



(b) Change in U.S. GDP vs. GPI



(a) Settlers in Nebraska, circa 1860

(b) Loggers felling an old-growth tree, Washington

(a) Settlers in Nebraska, circa 1860

(b) Loggers felling an old-growth tree, Washington

TABLE 5.1 Major U.S. Environmental Protection Laws, 1963–1980

Clean Air Act
1963;
amended 1970 and 1990

Sets standards for air quality, restricts emissions from new sources, enables citizens to sue violators, funds research on pollution control, and established an emissions trading program for sulfur dioxide. As a result, the air we breathe today is far cleaner (pp. 284–287).

Resource Conservation and Recovery Act
1976

Sets standards and permitting procedures for the disposal of solid waste and hazardous waste (p. 392). Requires that the generation, transport, and disposal of hazardous waste be tracked "from cradle to grave."

Endangered Species Act
1973

Seeks to protect species threatened with extinction. Forbids destruction of individuals of listed species or their critical habitat on public and private land, provides funding for recovery efforts, and allows negotiation with private landholders (pp. 177–179).

Clean Water Act
1977

Regulates the discharge of wastes, especially from industry, into rivers and streams (p. 272). Aims to protect wildlife and human health, and has helped to clean up U.S. waterways.

Safe Drinking Water Act
1974

Authorizes the EPA to set quality standards for tap water provided by public water systems, and to work with states to protect drinking water sources from contamination.

Soil and Water Conservation Act
1977

Directs the U.S. Department of Agriculture to survey and assess soil and water conditions across the nation and prepare conservation plans. Responded to worsening soil erosion and water pollution on farms and rangeland as production intensified.

Toxic Substances Control Act
1976

Directs the EPA to monitor thousands of industrial chemicals and gives it power to ban those found to pose too much health risk (p. 221). However, the number of chemicals continues to increase far too quickly for adequate testing.

CERCLA ("Superfund")
1980

Funds the Superfund program to clean up hazardous waste at the nation's most polluted sites (p. 404). Costs were initially charged to polluters but most are now borne by taxpayers. The EPA continues to progress through many sites that remain. Full name is the Comprehensive Environmental Response Compensation and Liability Act.


CLEAN
ENERGY

TABLE 5.2 Major International Environmental Treaties

CONVENTION OR PROTOCOL	YEAR IT CAME INTO FORCE	NATIONS THAT HAVE RATIFIED IT	U.S. STATUS
CITES: Convention on International Trade in Endangered Species of Wild Fauna and Flora (p. 179)	1975	175	Ratified
Ramsar Convention on Wetlands of International Importance	1975	159	Ratified
Montreal Protocol, of the Vienna Convention for the Protection of the Ozone Layer (p. 294)	1989	196	Ratified
Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (p. 403)	1992	172	Signed but has not ratified
Convention on Biological Diversity (p. 179)	1993	168	Signed but has not ratified
Stockholm Convention on Persistent Organic Pollutants (p. 222)	2004	152	Signed but has not ratified
Kyoto Protocol, of the UN Framework Convention on Climate Change (p. 325)	2005	184	Signed but has not ratified

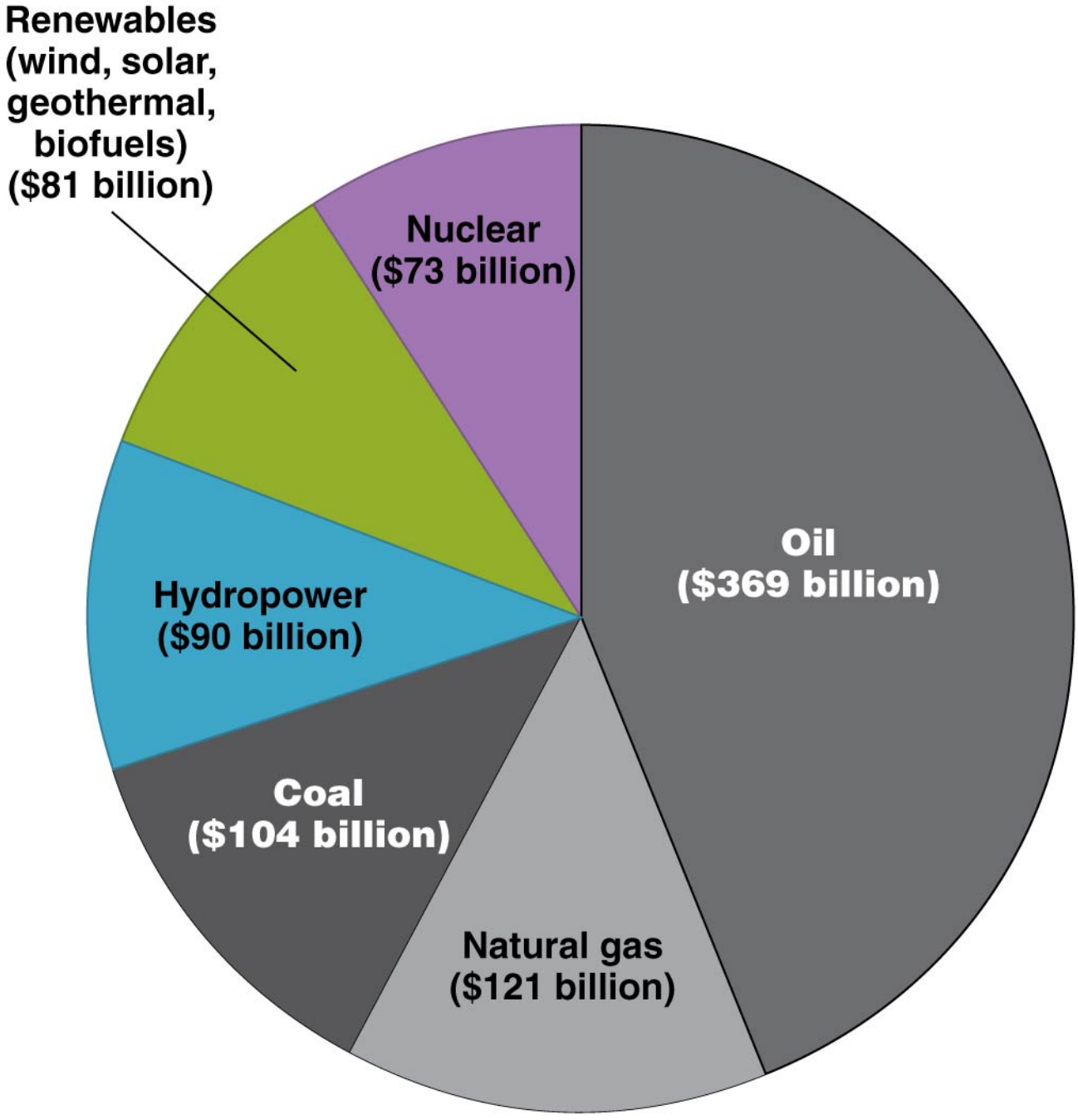
Problem
Pollution from factory harms people's health

Solutions
Three policy approaches

1. People can sue factory in court.

2. Government can regulate emissions.

3. Economic policy tools can create incentives: A factory that pollutes less (right) will outcompete one that pollutes more (left) through permit trading, avoiding green taxes, or selling ecolabeled products.




FAIR TRADE
CERTIFIED™
Bucks County Coffee Co.
RAW CANE SUGAR
Good Migrations
COFFEE
English Breakfast Tea
Organic
COFFEE
FAIR TRADE
TransFair offers Fair
Certified

TABLE 5.3 U.N. Millennium Development Goals for 2015
• Eradicate extreme poverty and hunger
• Achieve universal primary education
• Promote gender equality and empower women
• Reduce child mortality
• Improve maternal health
• Improve maternal health
• Combat HIV/AIDS, malaria, and other diseases
• Ensure environmental sustainability
• Develop a global partnership for development

Source: United Nations. *End poverty 2015: Millennium Development Goals.* © United Nations. Reproduced with permission.

the Gini coefficient

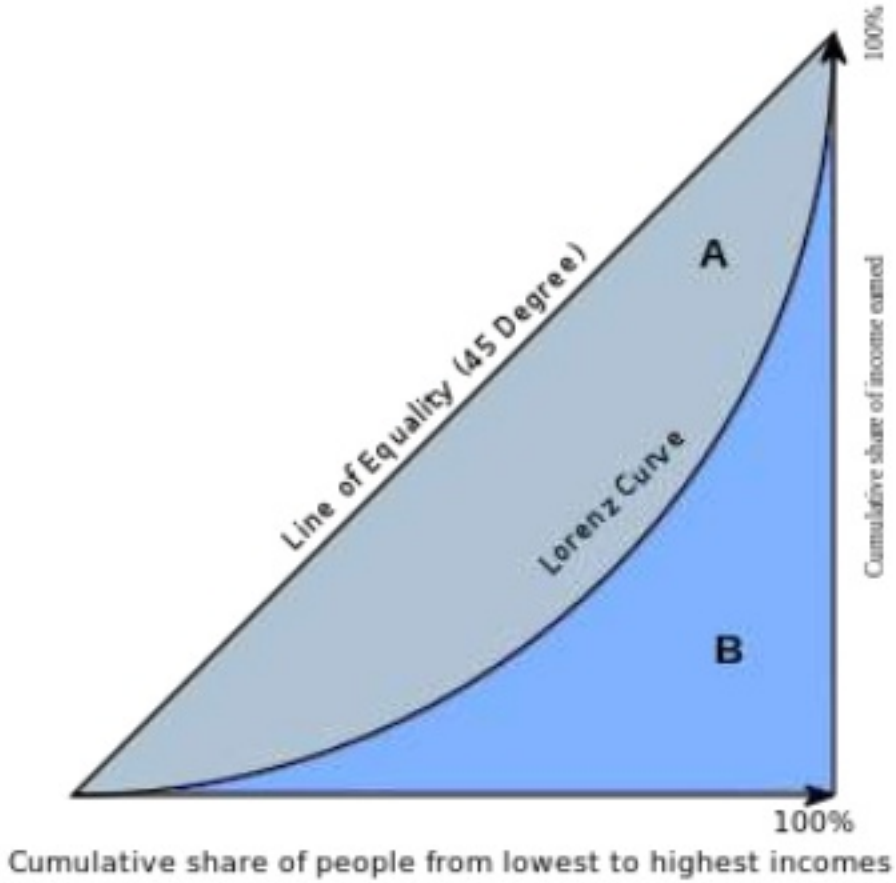
definition:
a measure of income inequality

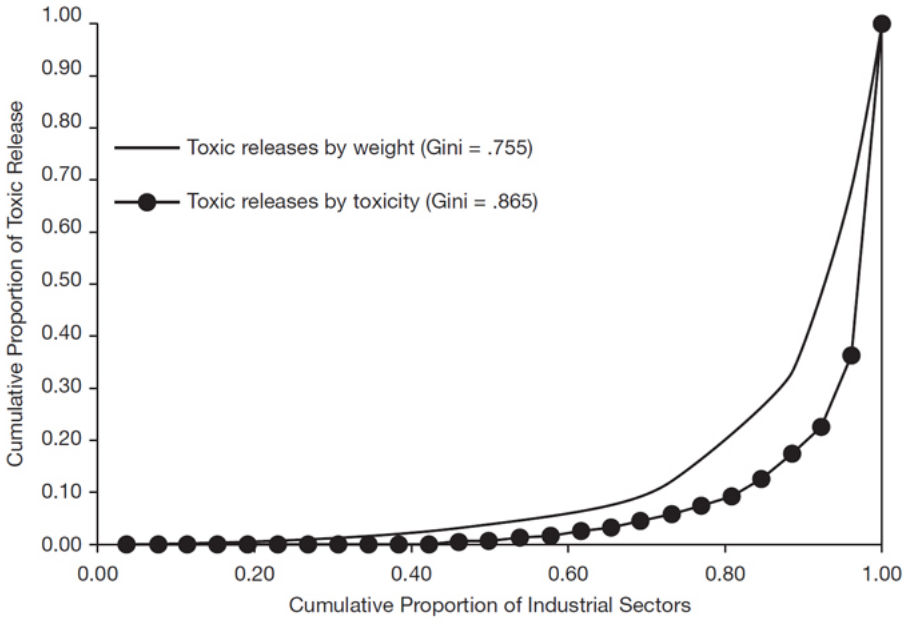
compares area A with area B

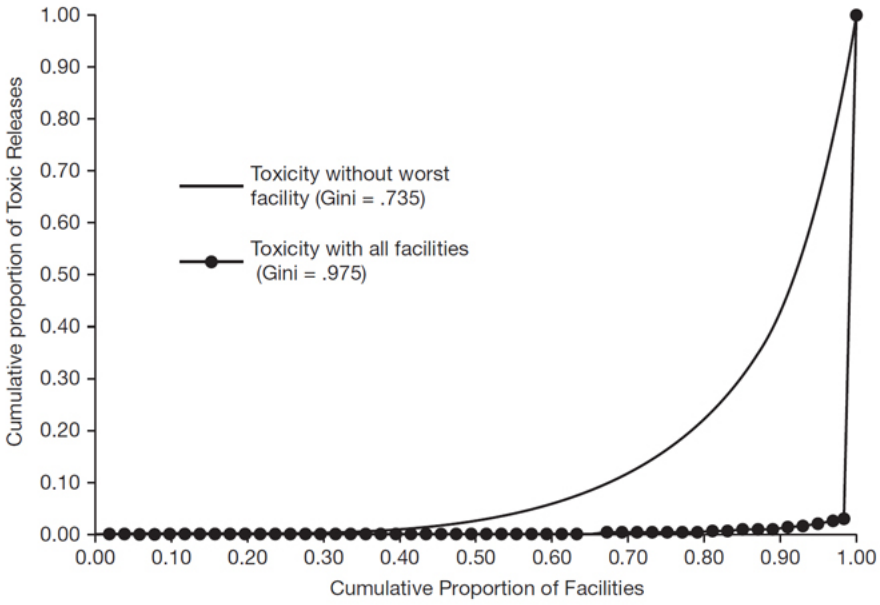
perfect equality = 0
perfect inequality = 1

i.e. the higher the Gini coefficient,
the greater the inequality

… so a low Gini coefficient is good




1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
Cumulative Proportion of Toxic Release
Toxic releases by weight (Gini = .755)
Toxic releases by toxicity (Gini = .865)
0.00
0.20
0.40
0.60
0.80
1.00
Cumulative Proportion of Industrial Sectors


1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
Cumulative proportion of Toxic Releases
Toxicity without worst facility (Gini = .735)
Toxicity with all facilities (Gini = .975)
0.00
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
0.90
1.00
Cumulative Proportion of Facilities