

Environmental Policy



Early developments in environmentalism and environmental policy:

Influential Literature

Writings on the **Sierra Nevada** by **John Muir** convey a deep reverence for wilderness areas in the Rocky Mountains (1872-1913).



The Silent Spring by **Rachel Carson** exposes the misuse of **DDT** (1962). This leads to the banning of DDT in the US ten years later.



NGOs

The **Audubon Society** founded to protect birds hunted for their feathers (1886-1905).



The **Sierra Club** founded by **John Muir** to sponsor outings to raise interest in conservation. (1892).



The **World Wildlife Fund** founded to protect endangered species worldwide (1961).



Greenpeace founded to stop nuclear testing in the Pacific (1971).



US Government Policies

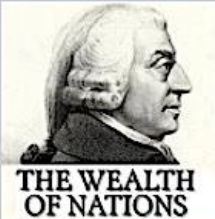

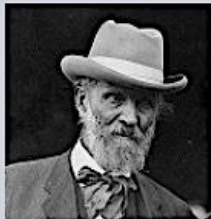
The first **national parks** are established: **Yellowstone** (1872), **Sequoia** (1890), and **Grand Canyon** (1908). This sets a new precedent in the use of **federal land**.



Clean Air Act (1963).
Wilderness Act (1964).
EPA founded (1970).
Clean Water, Marine Mammal Protection, and Ocean Dumping Acts (1972).
Endangered Species Act (1973).



Environmental worldviews:

| Worldview | Proponents | Description | Justification |
|--|---|---|---|
| Frontier Ethic (anthropocentric) |  <p>THE WEALTH OF NATIONS Adam Smith</p> | Most resources are unlimited and economic growth can be sustained indefinitely through the ability to find substitutes for resources that are exhaustible.* | Worldwide standards of living have consistently improved since the 18 th century due to capitalism and ongoing advancements in technology and resource extraction. |
| Utilitarian Conservation Ethic (anthropocentric) |  <p>Teddy Roosevelt</p> | Exhaustible resources should be managed so they can be made available to future generations. | Overexploitation and environmental degradation can undermine the economic value of both the land and the water. |
| Ecocentrism |  <p>John Muir</p> | Nature has an inherent value regardless of human needs. | Conserving species or ecosystems solely on the basis of human utility is short-sighted because humans are not the masters of nature. |

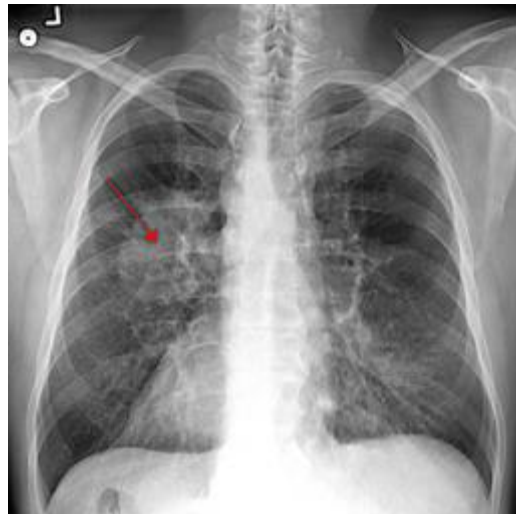
* From Essentials of Environmental Science by Kamala Dorsner as modified by Matthew R. Fisher

<https://openoregon.pressbooks.pub/envirobiology/chapter/1-4-environmental-ethics/>

Industry plays a central role in our standard of living,
...but it also generates unintended consequences.



How do we formulate
cost-effective policies that
minimize the damage to
both the environment and
human health?



“Follow the science” is popular talking point, but science alone is not enough to address the social costs of environmental issues. Sound policy also requires a solid understanding of:



- Economics:

- ✓ What is the cost of the damage?
- ✓ What is the overall cost of the mitigation strategy?

- Ethics/Law:

- ✓ Who is being disproportionately impacted?
- ✓ How do you ensure polluters pay the costs of mitigation?
- ✓ Do ecosystems have “rights”?
- ✓ How do you address the “tragedy of the commons”?
- ✓ How do you prevent “greenwashing”?



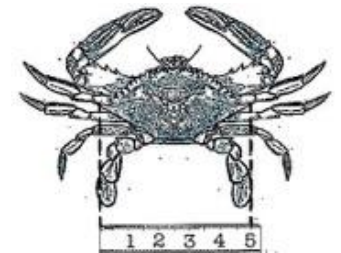
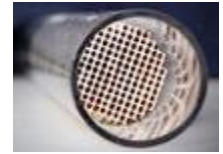
Strategies for implementing environmental policy include:

Mandates that set limits on the pollutants or activities that have an adverse impact in the environment.



Example 1: To minimize tailpipe emissions, all cars in the US are required to have catalytic convertors.

Example 2: To prevent overharvesting, the minimum shell size for crabs captured in Maryland is 5 inches.



Incentives that subsidize the desired behavior and tax the undesired behavior.

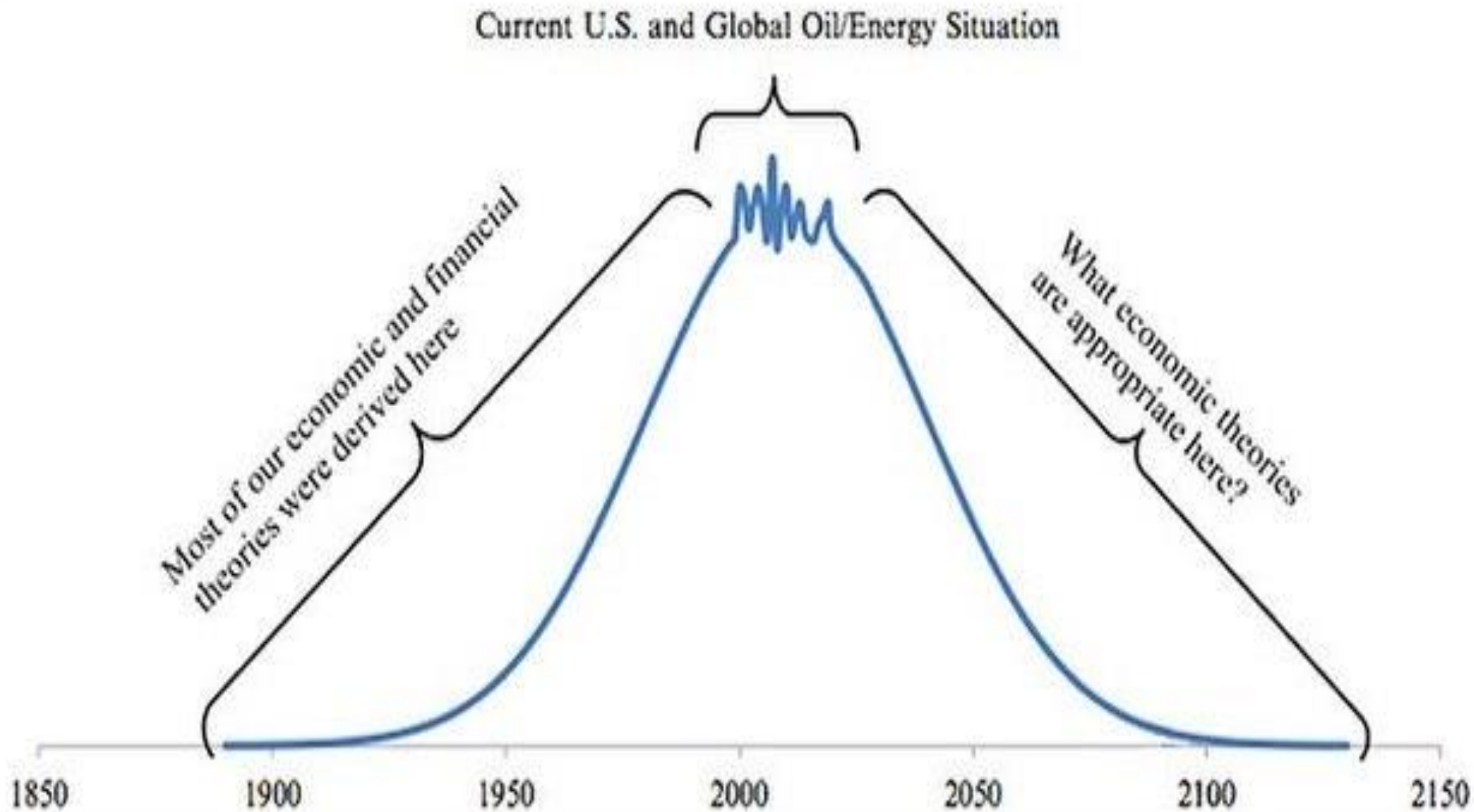


Example 1: To reduce solid wastes, some counties impose a 5¢ tax on bags provided in retail stores.

Example 2: To reduce fossil fuel consumption, homeowners with photovoltaic panels are eligible for a tax credit.



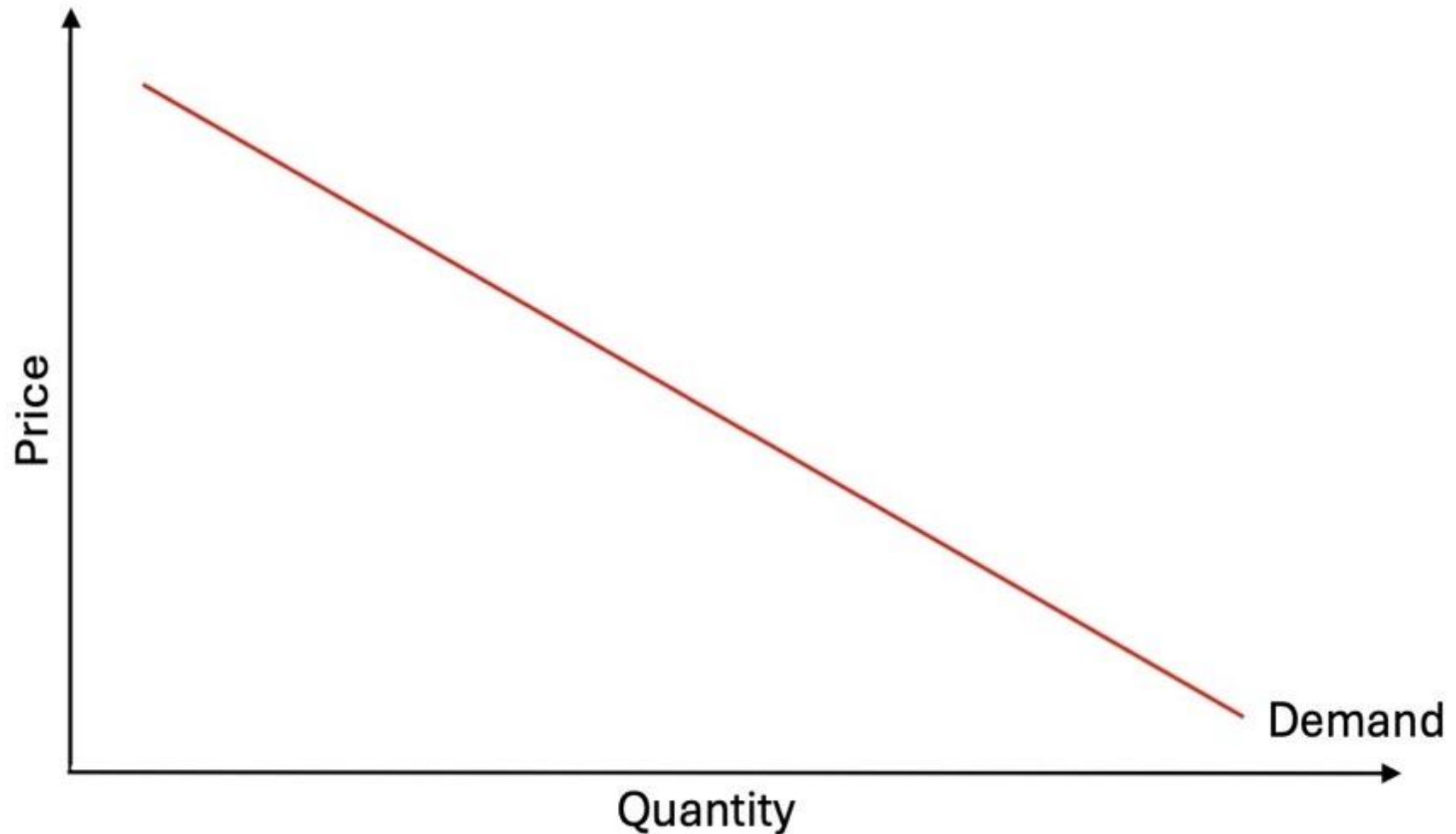
How do we apply laws of economics to environmental issues?



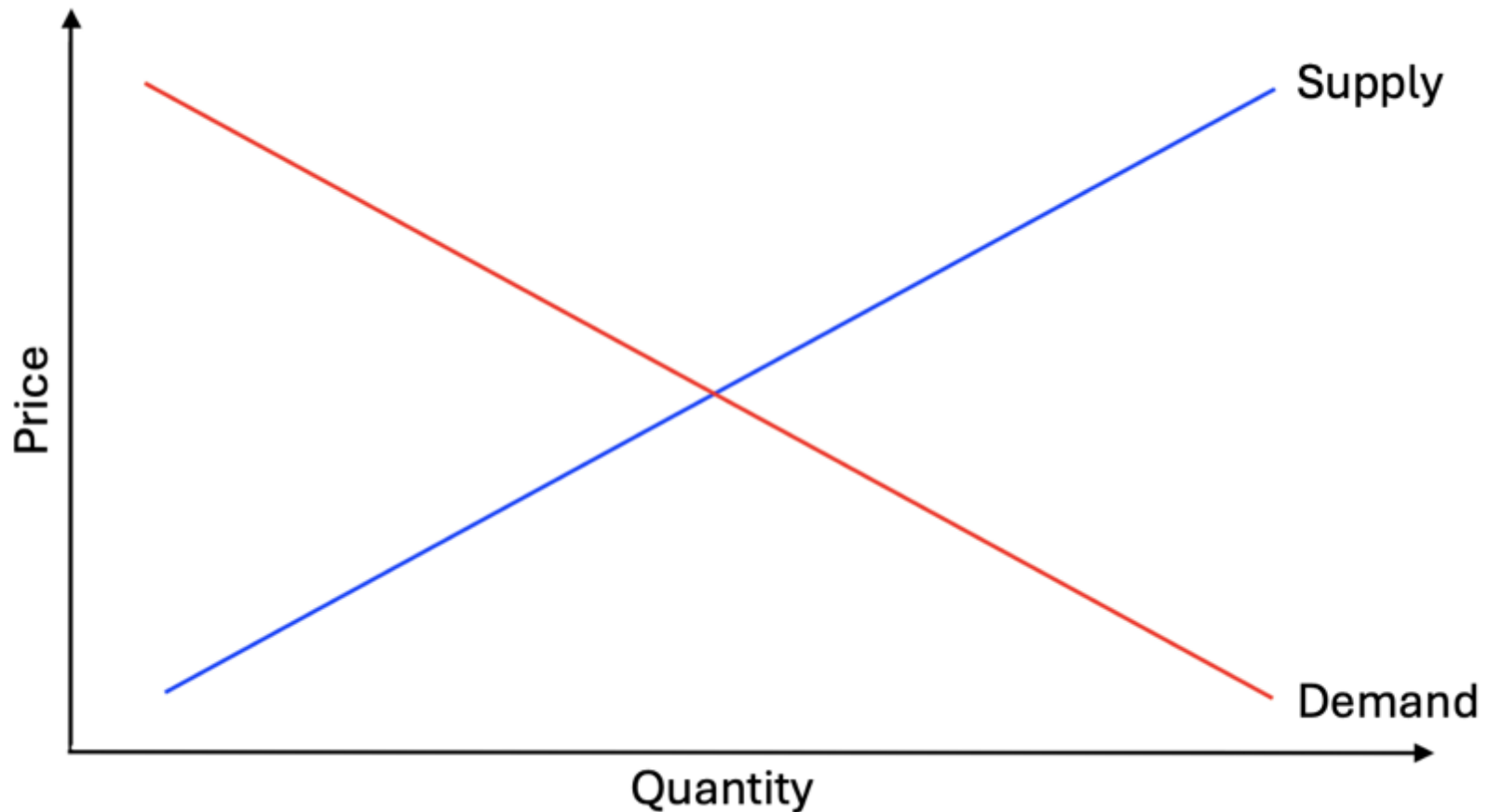
Economics Lesson 1: The more consumers are willing to pay, the more suppliers will do to ensure availability of the product.



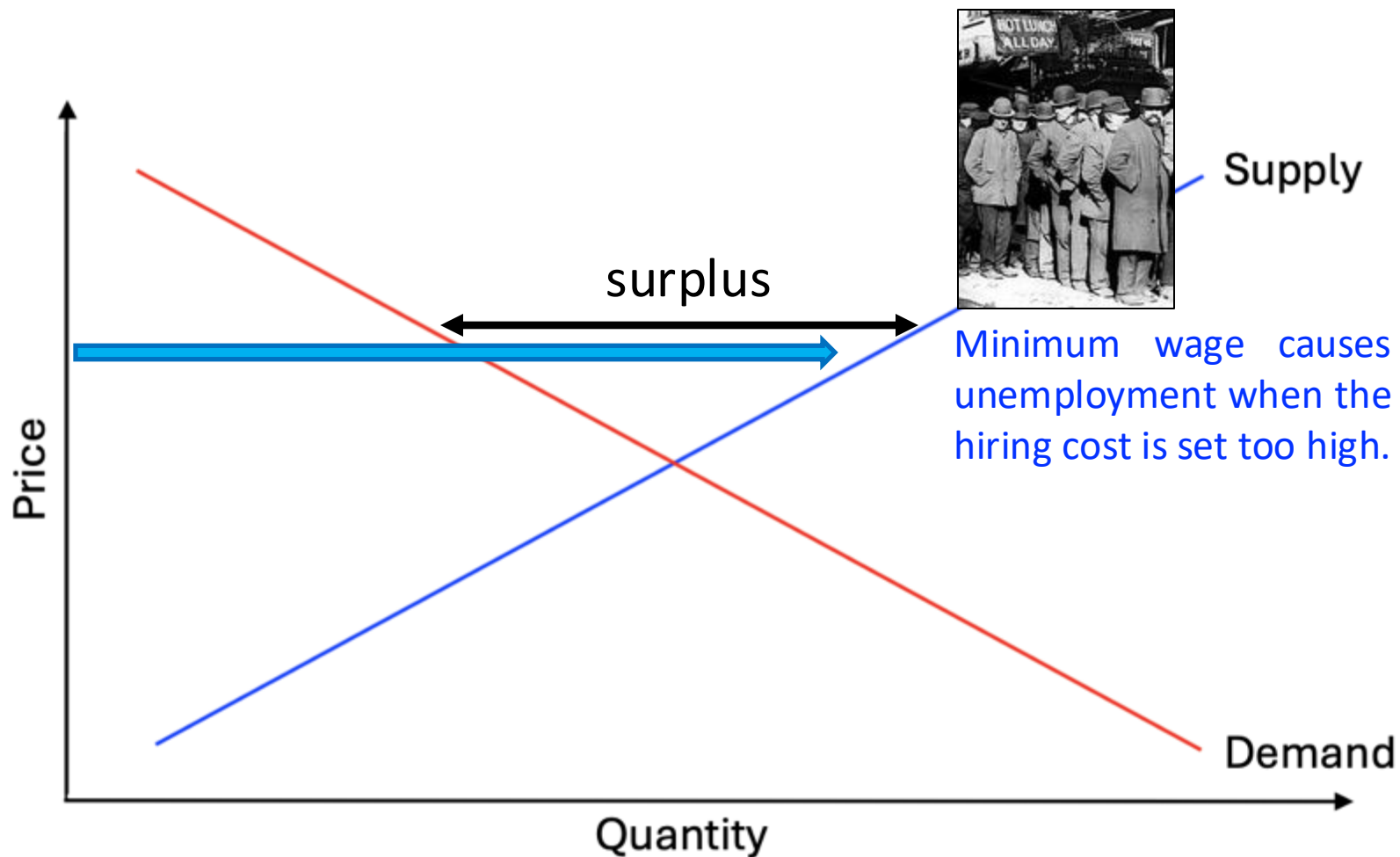
Economics Lesson 2: As suppliers increase the price, less consumers are willing to purchase the product.



Economics Lesson 3: How do these trends work together?

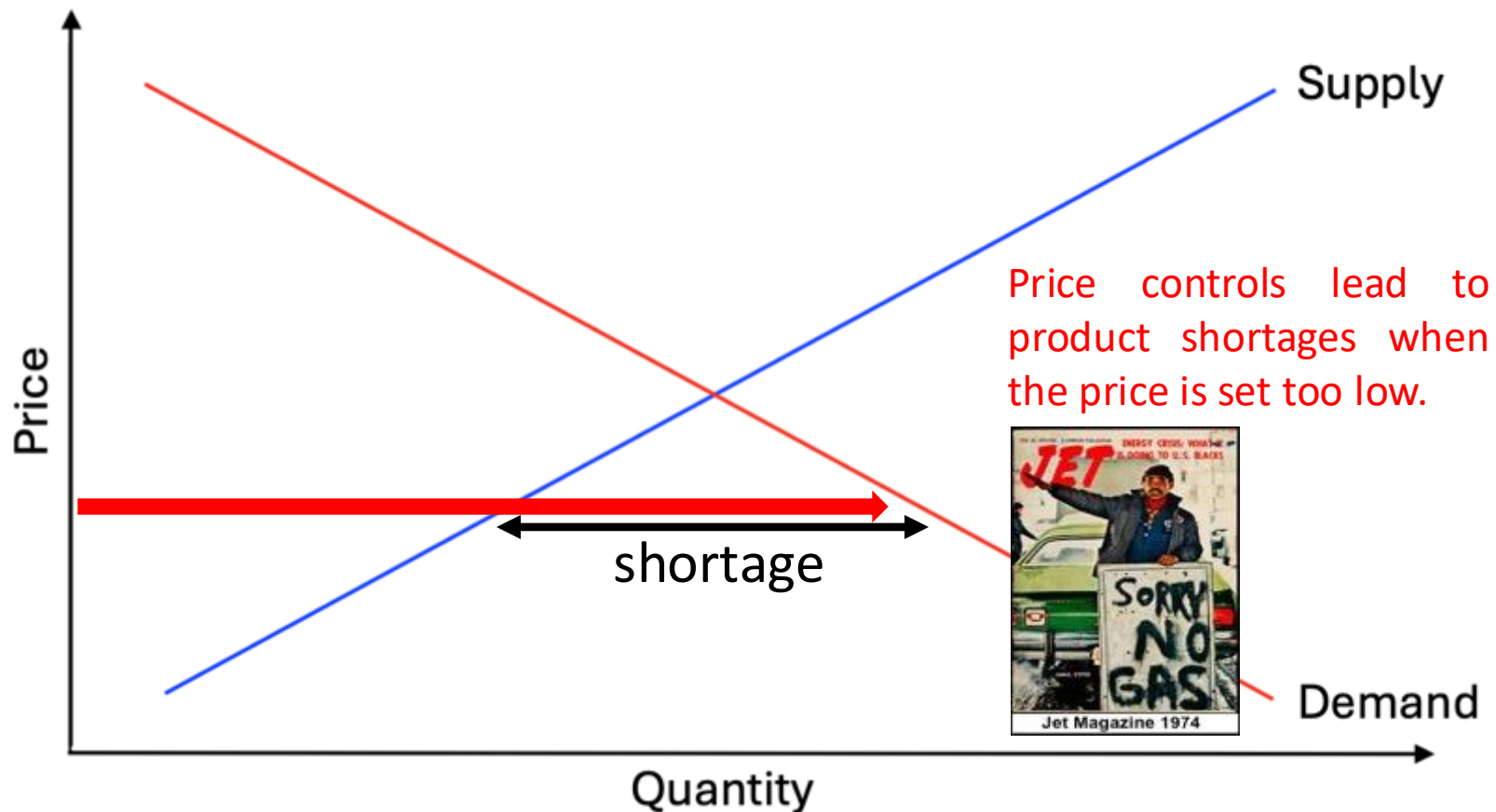


Economics Lesson 3:



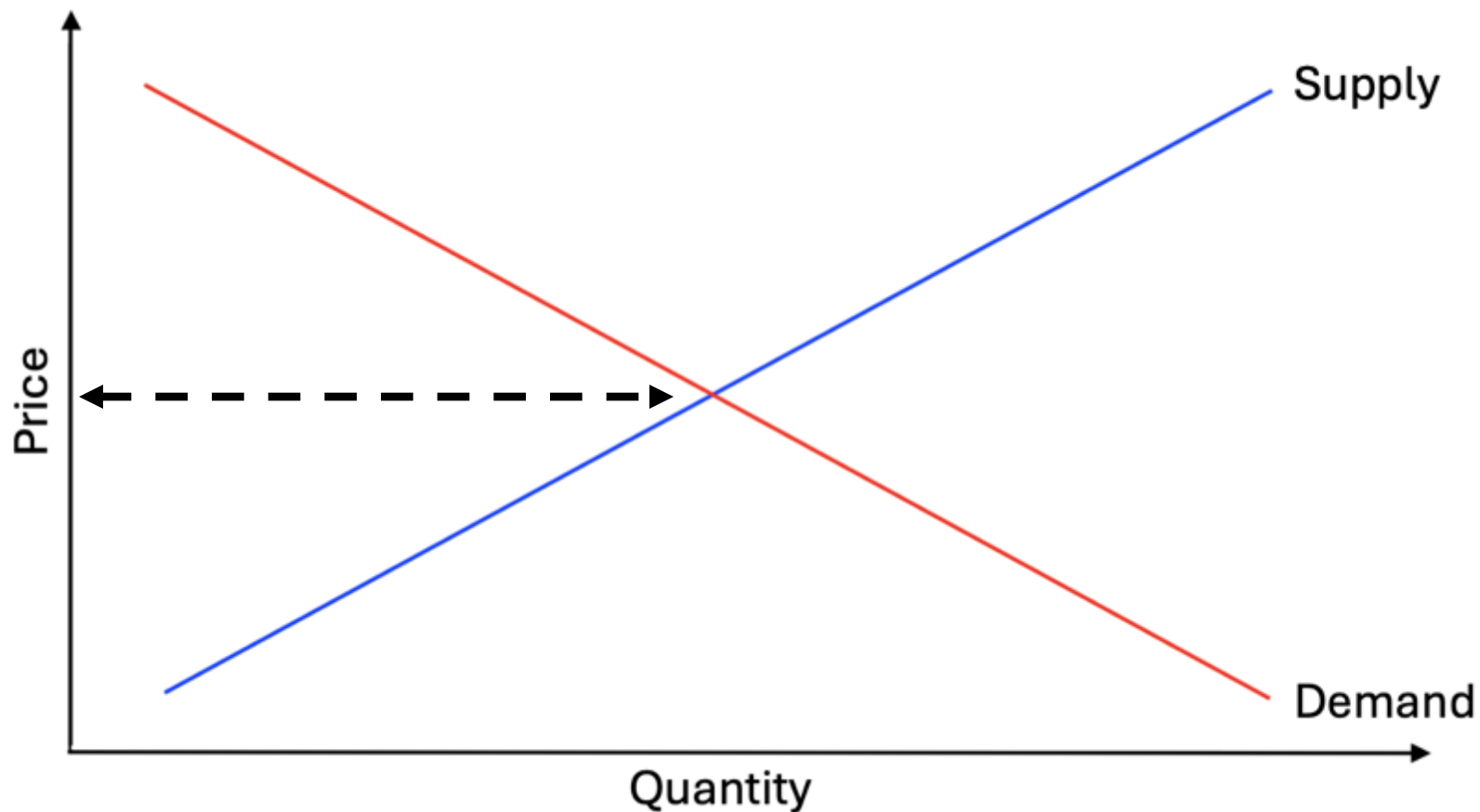
If the price is too high, the supply will exceed the demand.

Economics Lesson 3:



If the price is too low, the supply will fall short of the demand.

Economics Lesson 3:



The market price occurs at the intersection of the two lines.

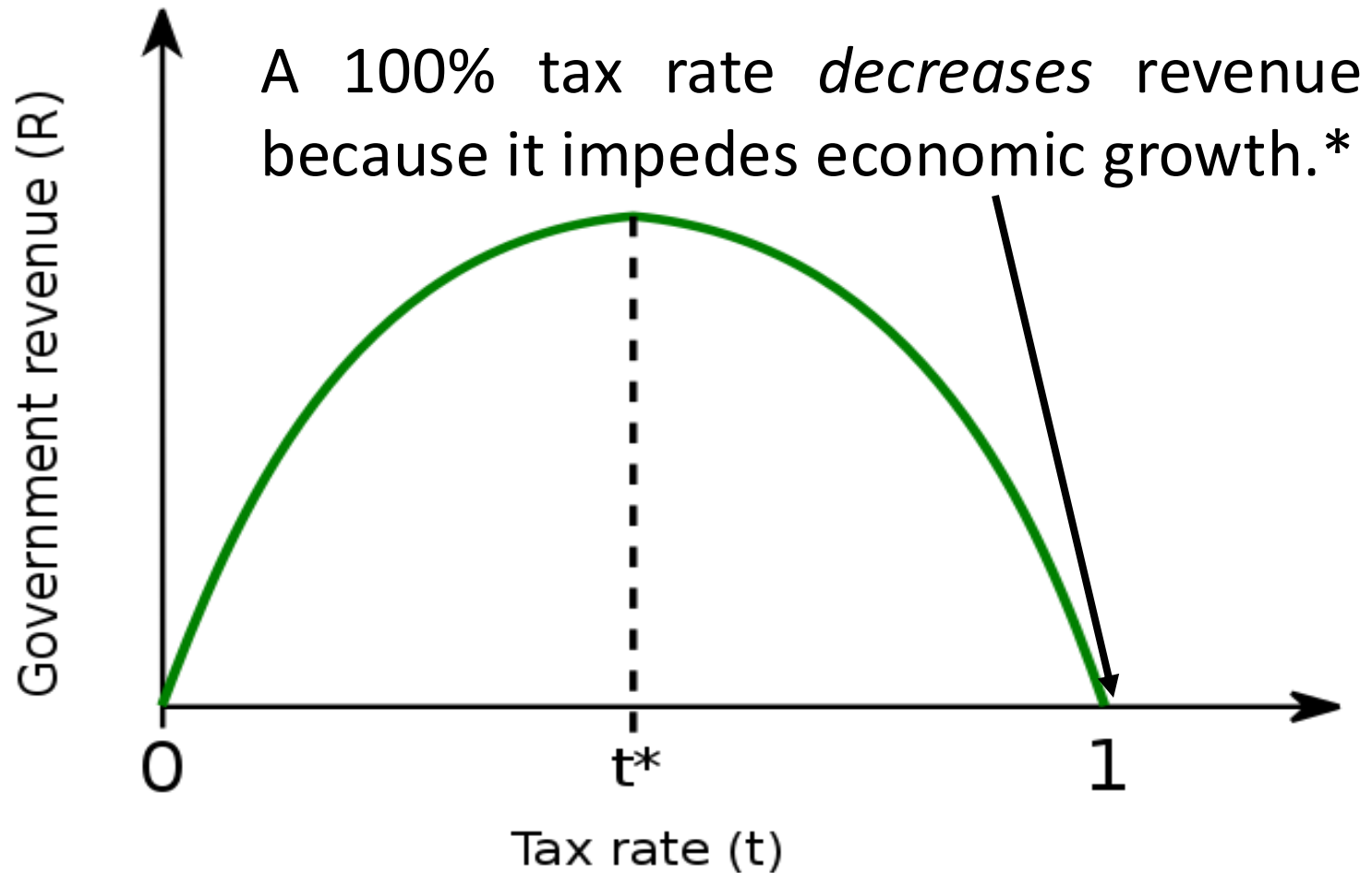
Classical economics is also used to calculate **internal costs** like land, labor, & capital, but this approach by itself **fails to account for externalities** like **pollution** and **resource depletion**.



Environmental economics builds on these basic principles in order to address the following questions:

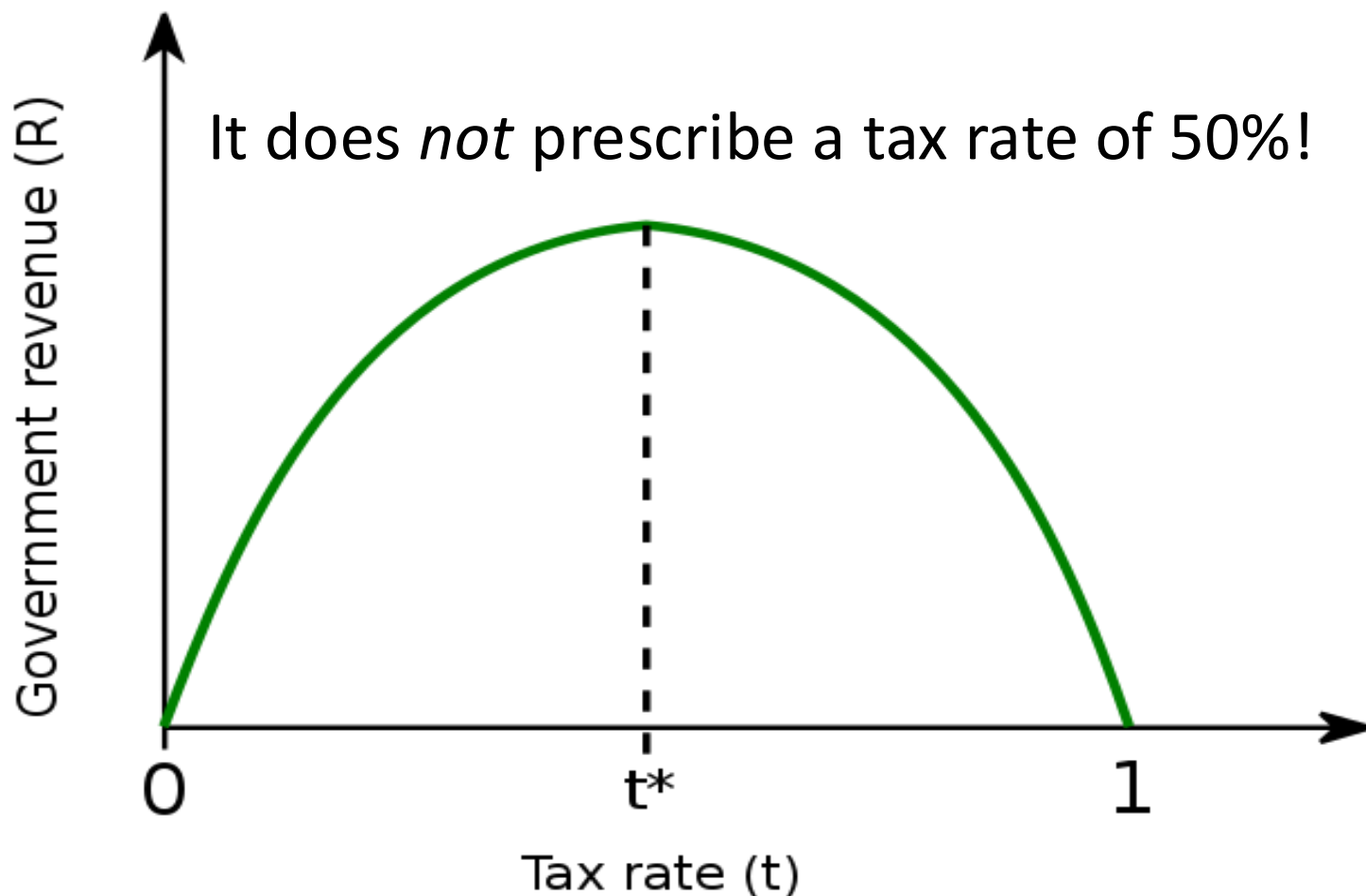
- What are the **costs** of **environmental degradation**?
- What are the **trade-offs** between environmental protection and economic growth?
- Where do you draw the line to **minimize costs to society**?

Somewhat related: The “Laffer Curve” indicates an ideal tax rate that is somewhere in the middle.



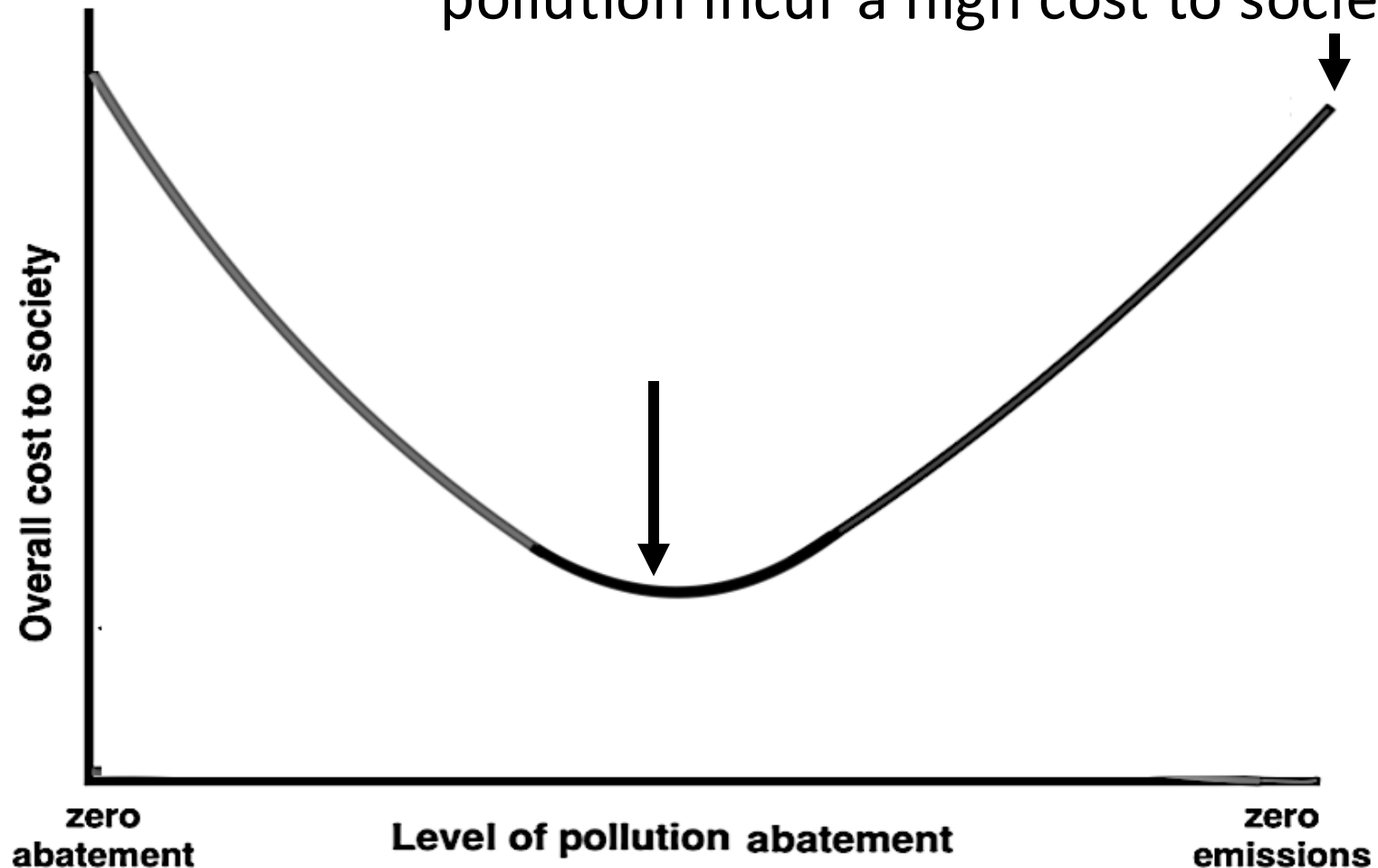
*Why bother to produce if the government takes 100%!

To clarify: The dotted line indicates an *ideal* rate that is *somewhere* between these two extremes.

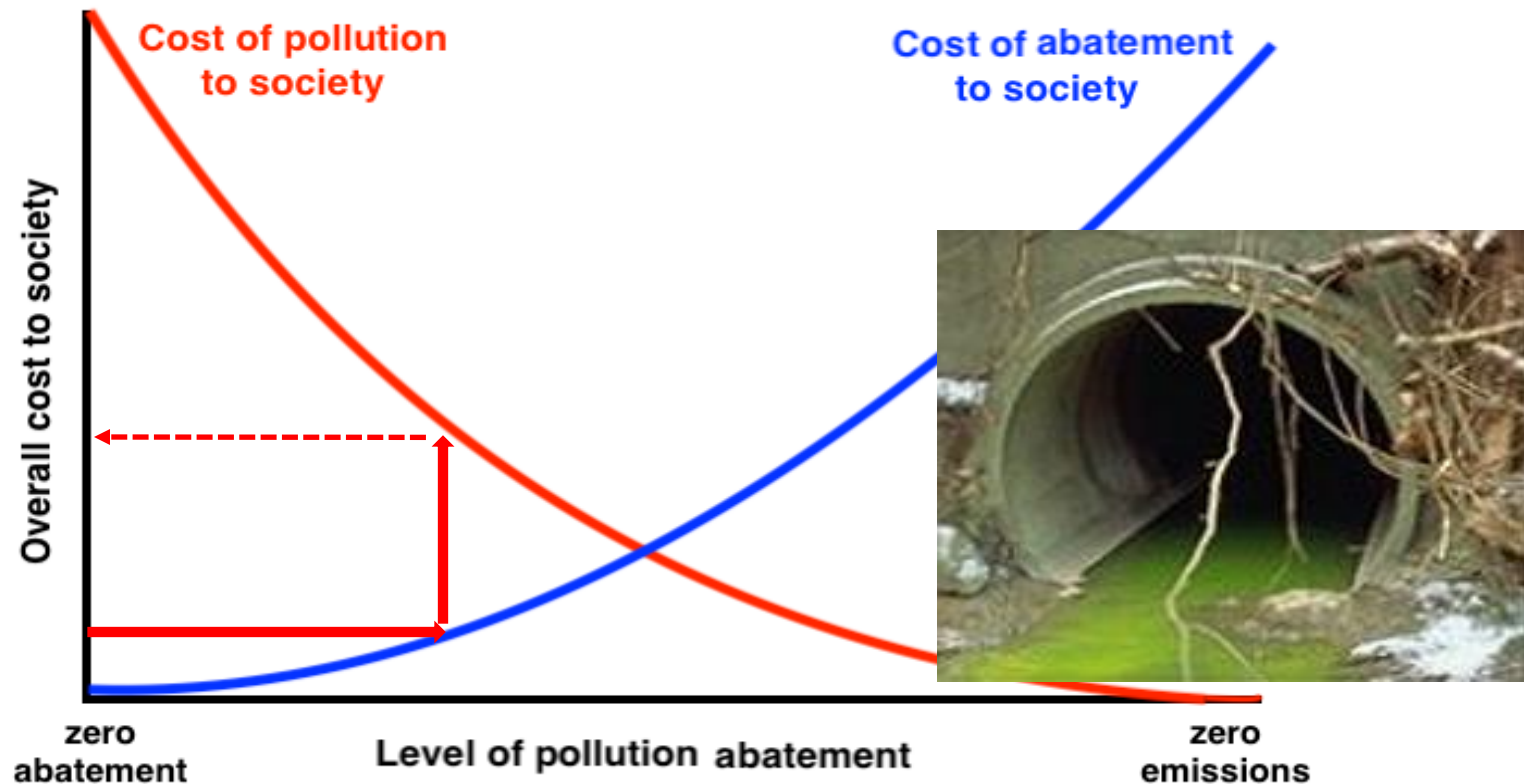


Not unlike the Laffer Curve, ideal pollution mitigation is found between two extremes of zero abatement and zero tolerance.

How does “zero tolerance” for pollution incur a high cost to society?

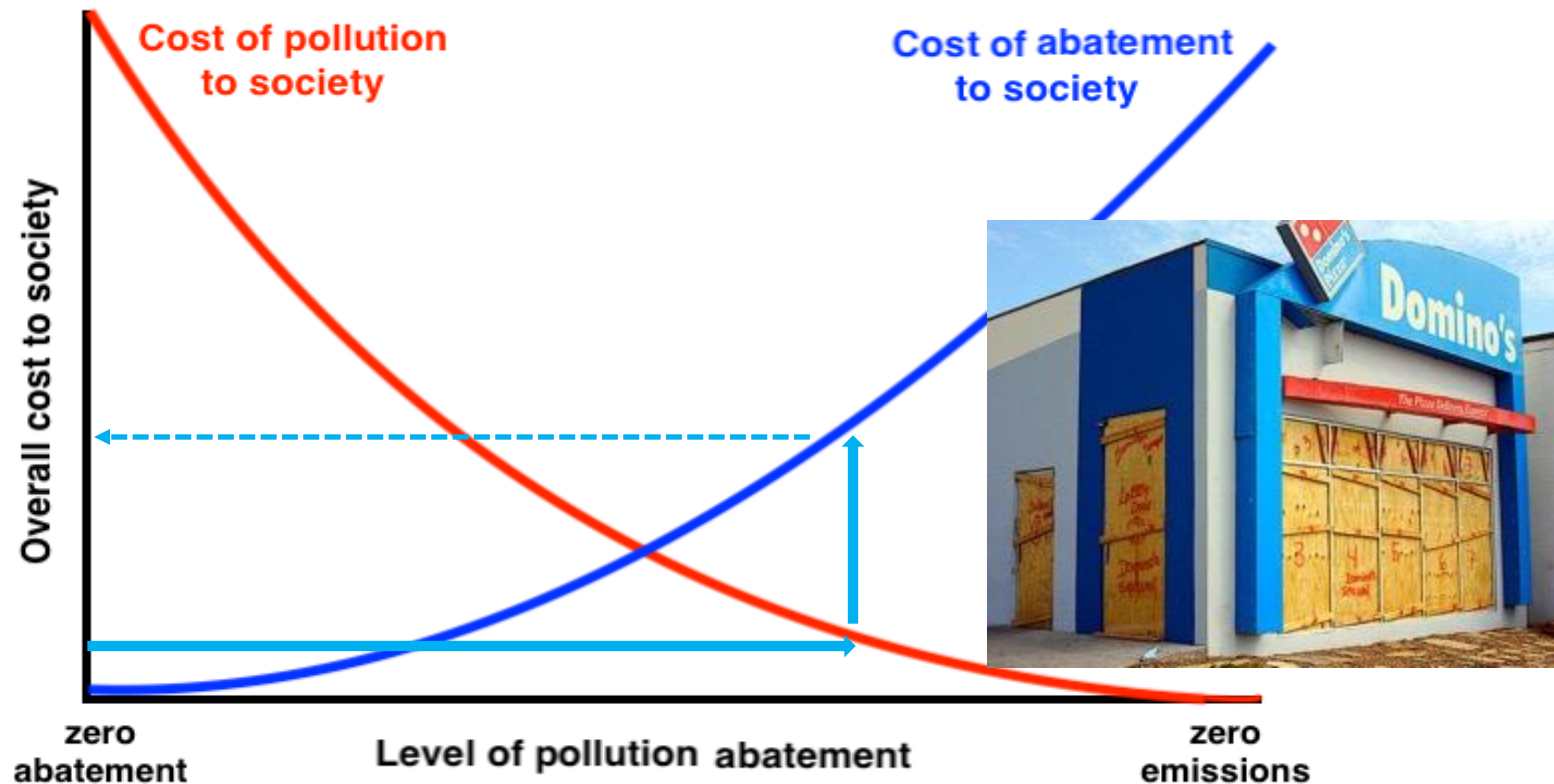


Cost-benefit analysis of pollution abatement



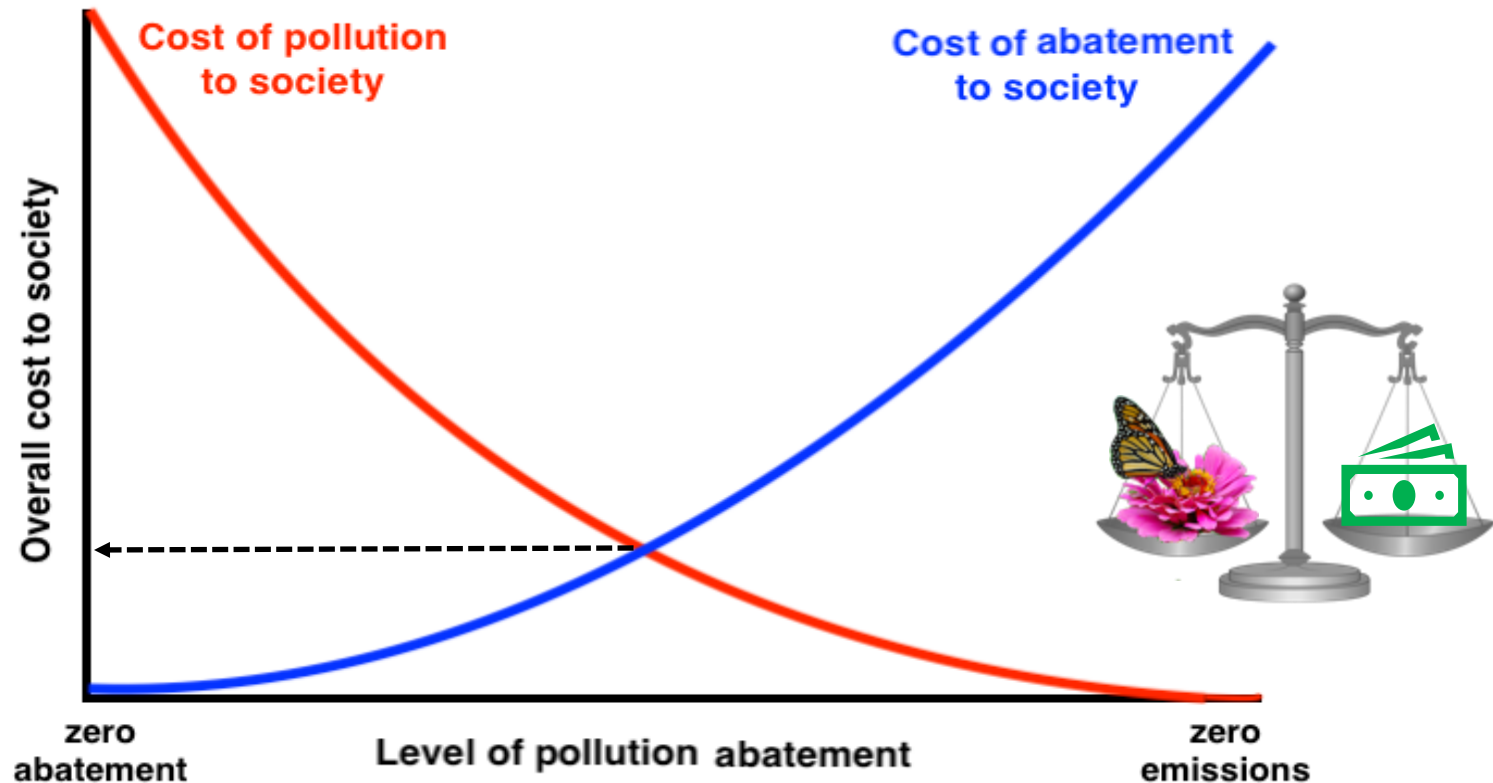
- At this point, the cost of pollution exceeds the cost of abatement.
- More needs to be done to curb the damage from the pollution.

Cost-benefit analysis of pollution abatement



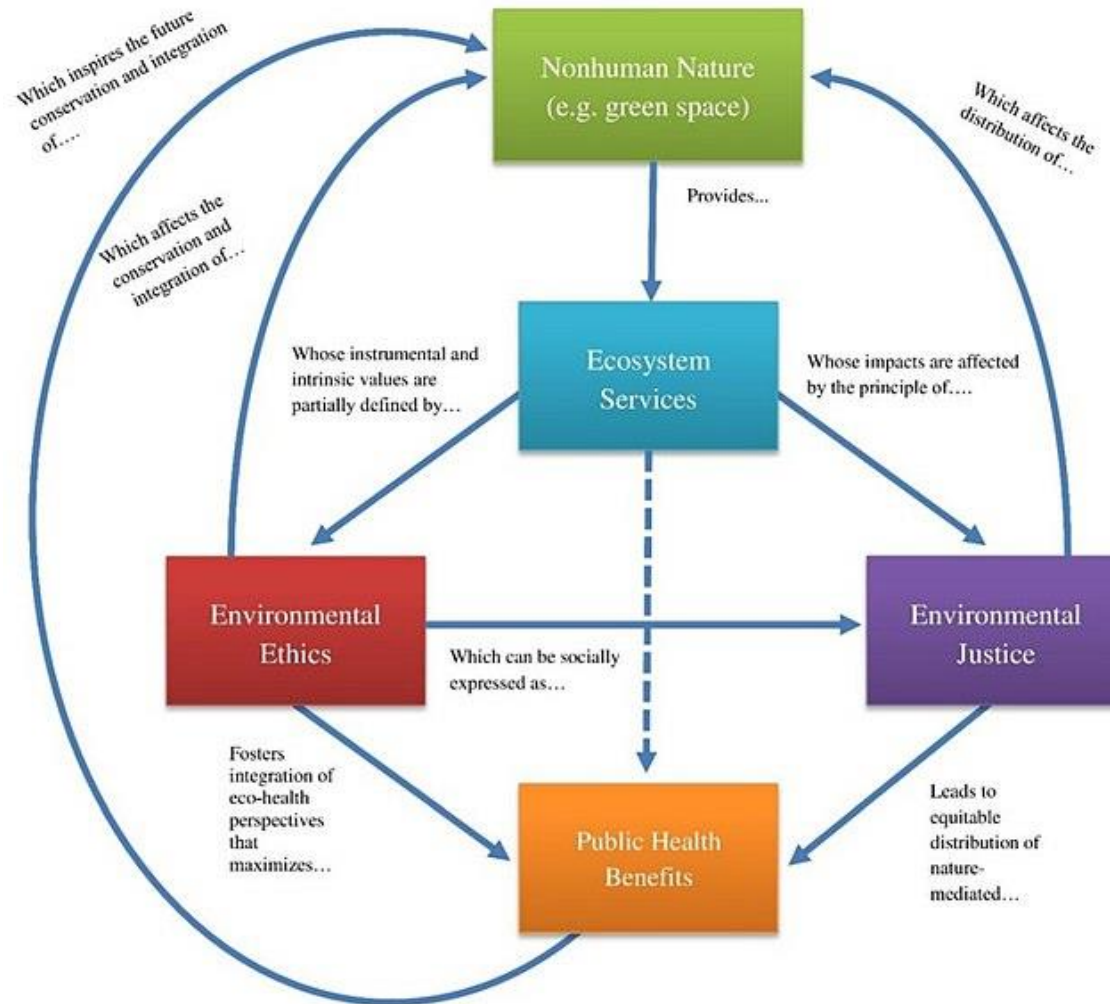
- At this point, the cost of abatement exceeds the cost of pollution.
- The measures for curbing the pollution are hurting the economy.

Cost-benefit analysis of pollution abatement



- This point is optimal because it results in the lowest cost to society.
- This strikes a balance between environmental and economic costs.

What ethical issues are unique to the interaction between humans and the environment?



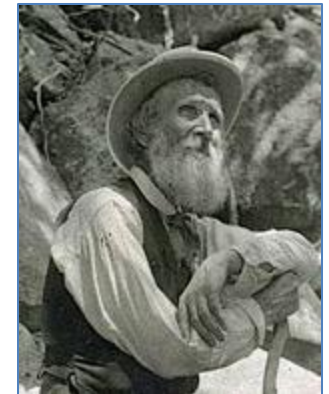


In the wake of devastating fires caused by the 1906 San Francisco earthquake, residents wanted to **build a dam in Hetch Hetchy Valley** to insure a more reliable supply of water.

This became a bone of contention between the **utilitarian conservationists** and the **ecocentrists** because this valley also happened to form part of Yosemite National Park.

The **head of forestry** under **Teddy Roosevelt**, **Gifford Pinchot**, favored the dam, arguing that the benefits to city residents outweighed the environmental costs.

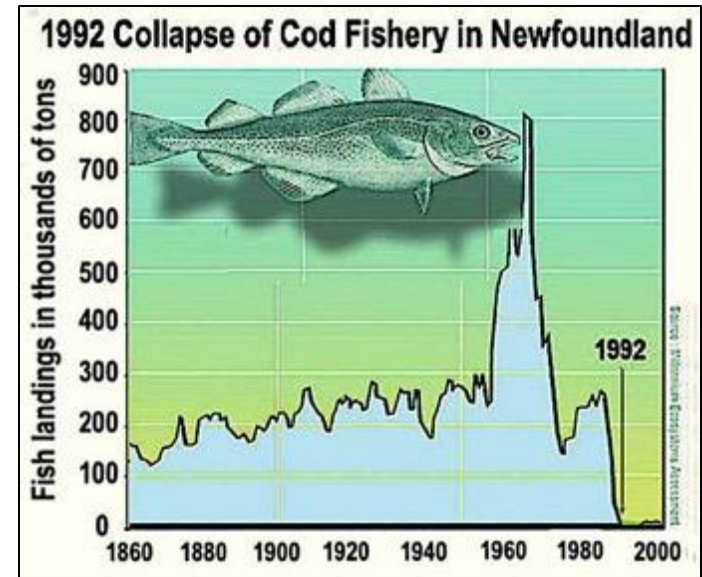
In sharp contrast, the **founder of the Sierra Club**, **John Muir**, regarded the project as a “desecration” of nature driven by commercial interests.



“As to my attitude regarding the proposed use of Hetch Hetchy by the city of San Francisco...I am fully persuaded that... the injury...by substituting a lake for the present swampy floor of the valley... is altogether unimportant compared with the benefits to be derived from it's use as a reservoir... The fundamental principle of the whole conservation policy is that of use, to take every part of the land and its resources and put it to that use in which it will serve the most people.” (Gifford Pinchot, 1913)

“These temple destroyers, devotees of ravaging commercialism, seem to have a perfect contempt for Nature, and instead of lifting their eyes to the God of the Mountains, lift them to the Almighty Dollar.” (John Muir, 1912)

Tragedy of the Commons



- A “**commons**” is an area or resource **shared by society** as a whole. Examples include the atmosphere, aquifers, rivers, oceans, and public grazing lands.
- The **lack of ownership** and modern technology facilitate conditions for a “zero sum game” whereby exploitation of the resource exceeds its ability to recover.
- In his essay “*The Tragedy of the Commons*” ecologist Garrett Hardin calls for “a fundamental extension of morality” to address the **stewardship of common pool resources**.

Greenwashing



Greenwashing is when a company uses deception to appear “green” while engaging in business as usual.

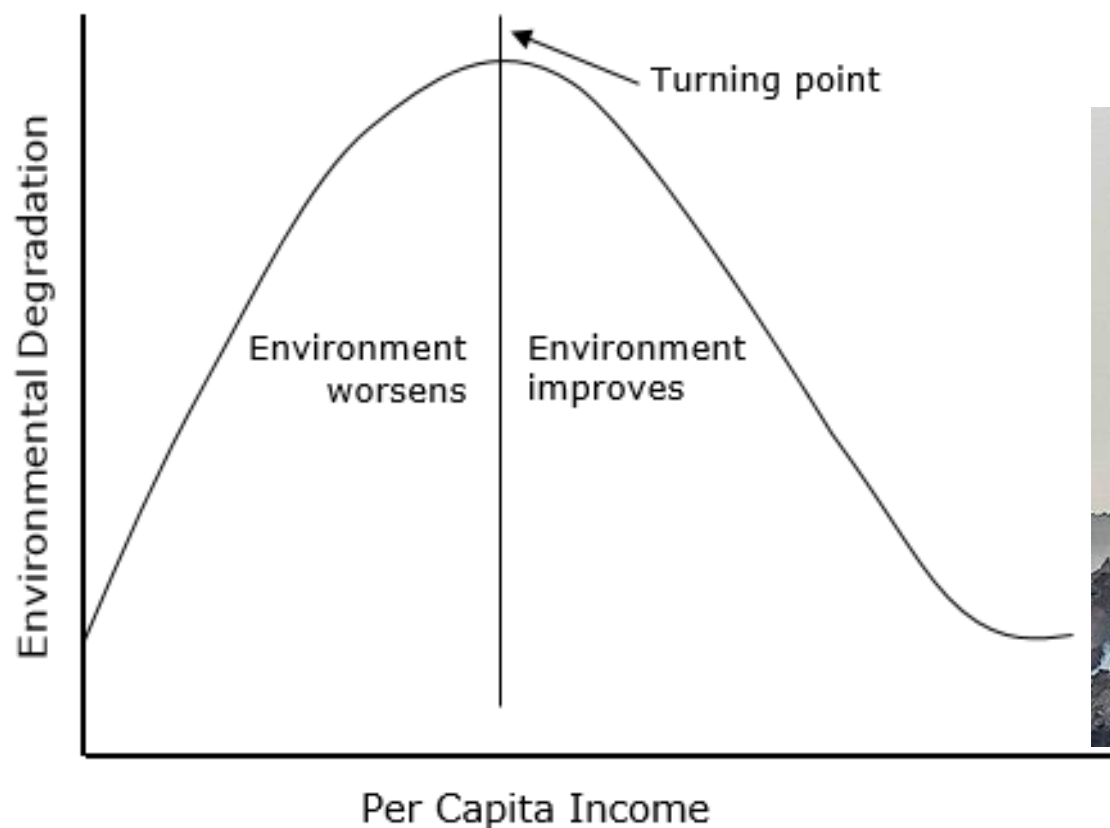


This can be minimized through closer scrutiny and more rigorous standards for transparency.

Fortunately, the environment usually improves after overall affluence increases beyond a certain point. This is indicated by the “**Kuznet Curve**”

Unfortunately much of this **pollution gets outsourced** to poorer nations with lower environmental standards!

What are the ethical implications?



Main takeaway: *Always* do the necessary research to avoid the unintended consequences!

- Does the policy actually *do* good?
- Or does the policy just *feel* good?
- The results do not care about your feelings or your intentions!



Acknowledgement:



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