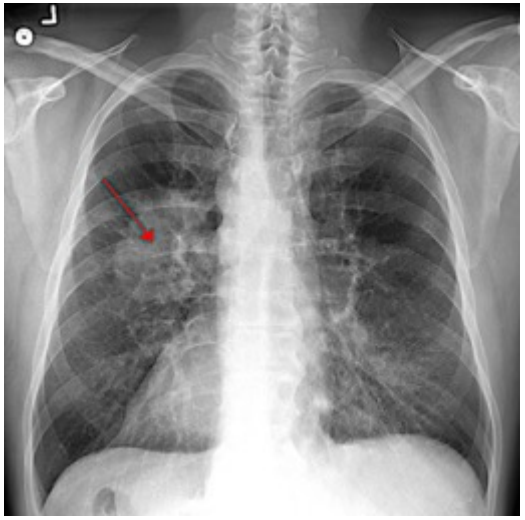
Environmental Policy

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?



Early developments in 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.


A crop duster sprays DDT over a forest in 1955 to control the Eastern spruce budworm.

NGOs

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

Audubon

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

SIERRA CLUB

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

WWF

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

GREENPEACE

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**.

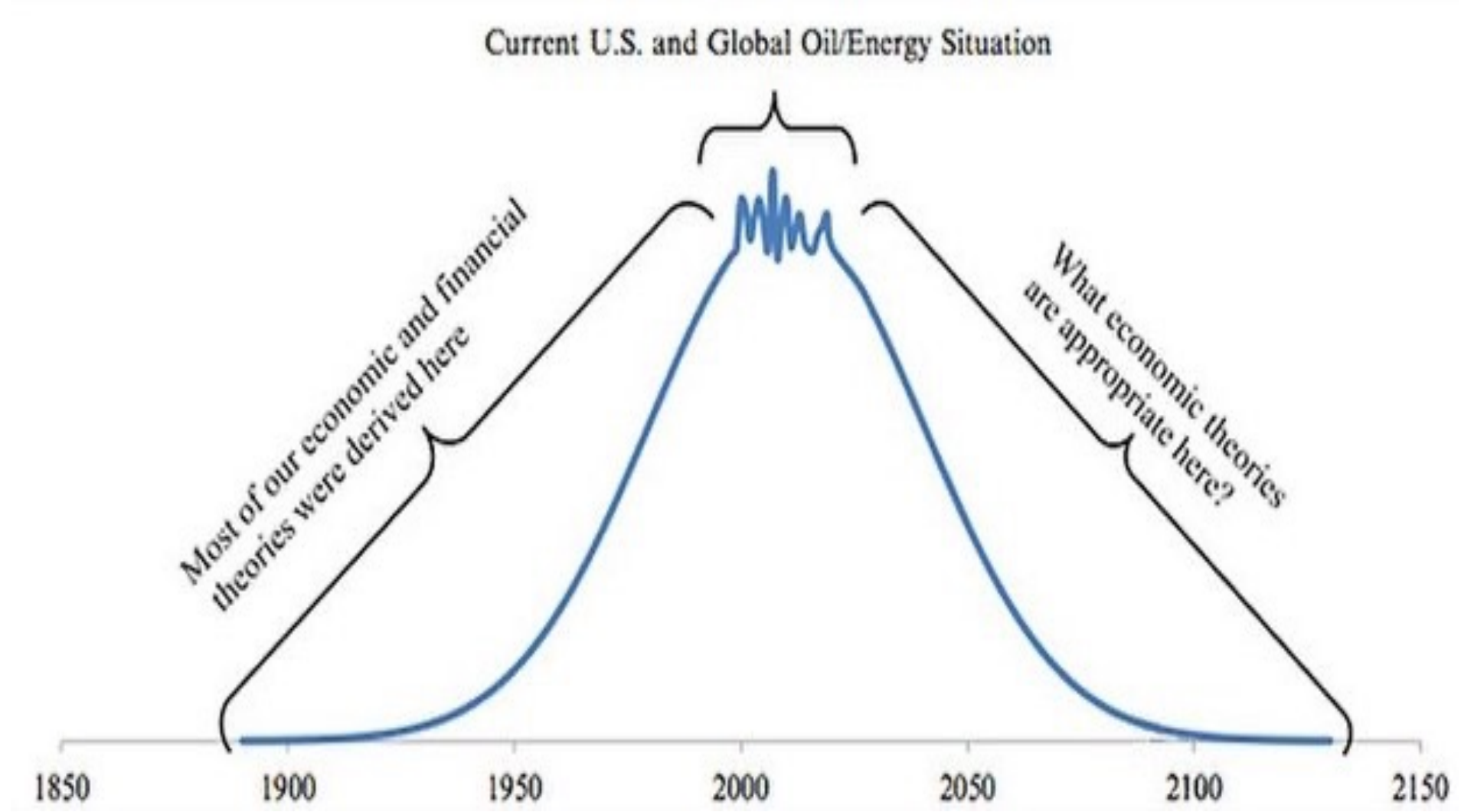
Clean Air Act (1963).
Wilderness Act (1964).
EPA founded (1970).
Clean Water, **Marine Mammal Protection**, and **Ocean Dumping Acts** (1972).
Endangered Species Act (1973).

"Following the science" is important, but science alone is not enough to address the social costs of environmental issues. Sound policy also requires a deep understanding of:

- <u>Economics:</u>
  - ✓What is the cost of the damage?
  - ✓What is the overall cost of the mitigation strategy?

- <u>Ethics:</u>
  - ✓Who is being disproportionately impacted?
  - ✓How do you ensure polluters pay the costs of mitigation?
  - ✓How do you address the "tragedy of the commons"?
  - ✓How do you prevent "greenwashing"?

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:

Supply

surplus

Minimum wage causes unemployment when the hiring cost is set too high.

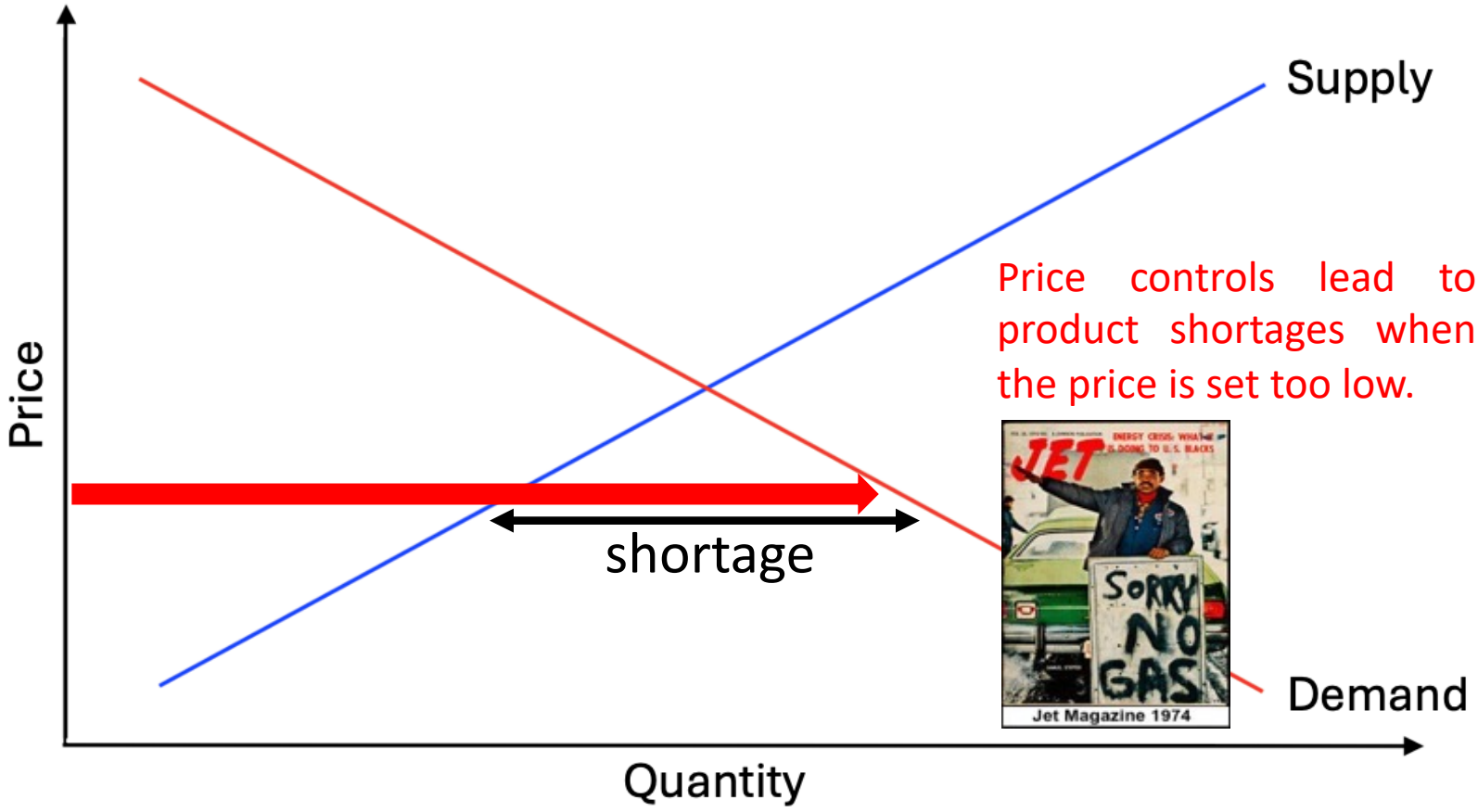
Price

Demand

Quantity

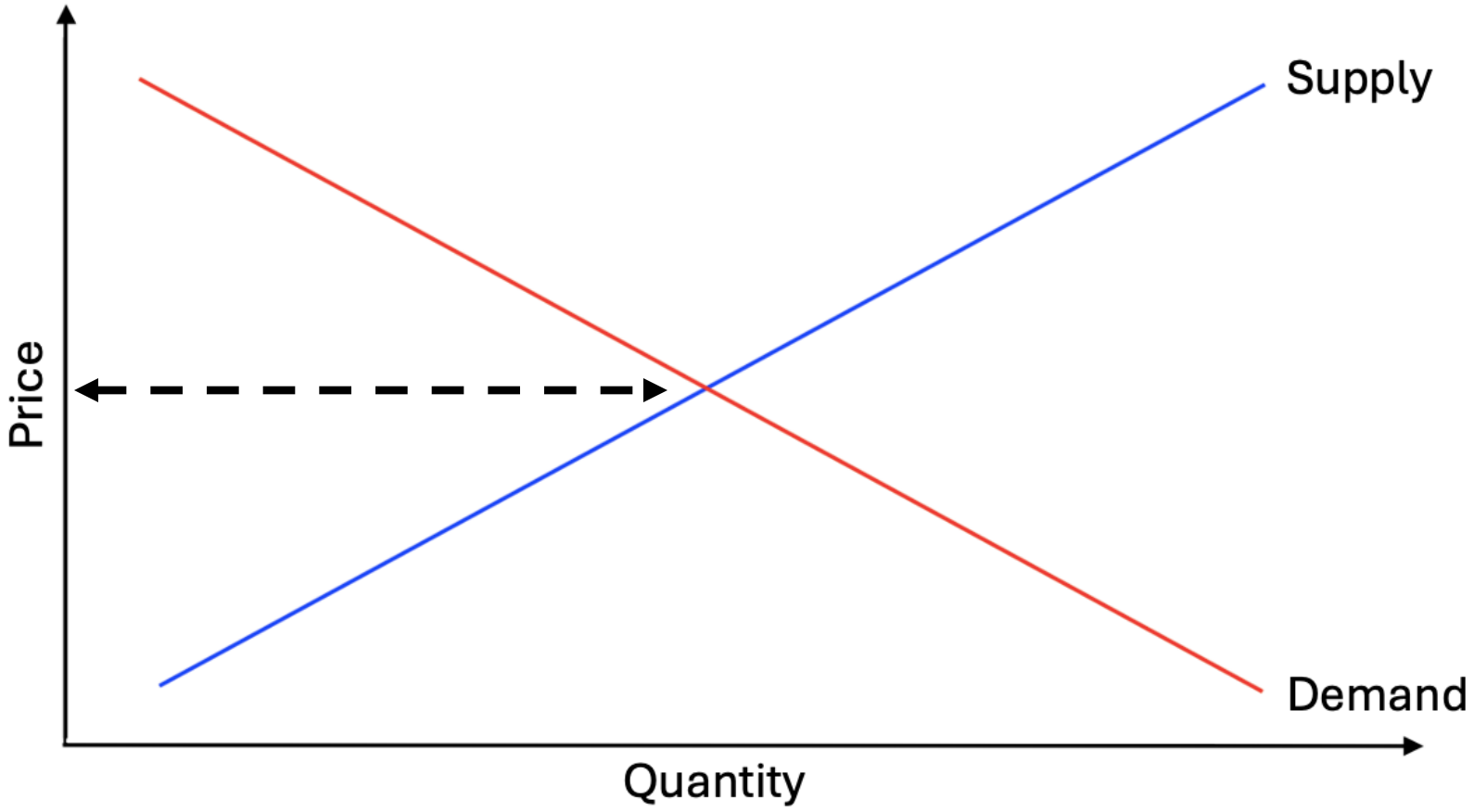
If the price is too high, the supply will exceed the demand.

Economics Lesson 3:



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

Economics Lesson 3:



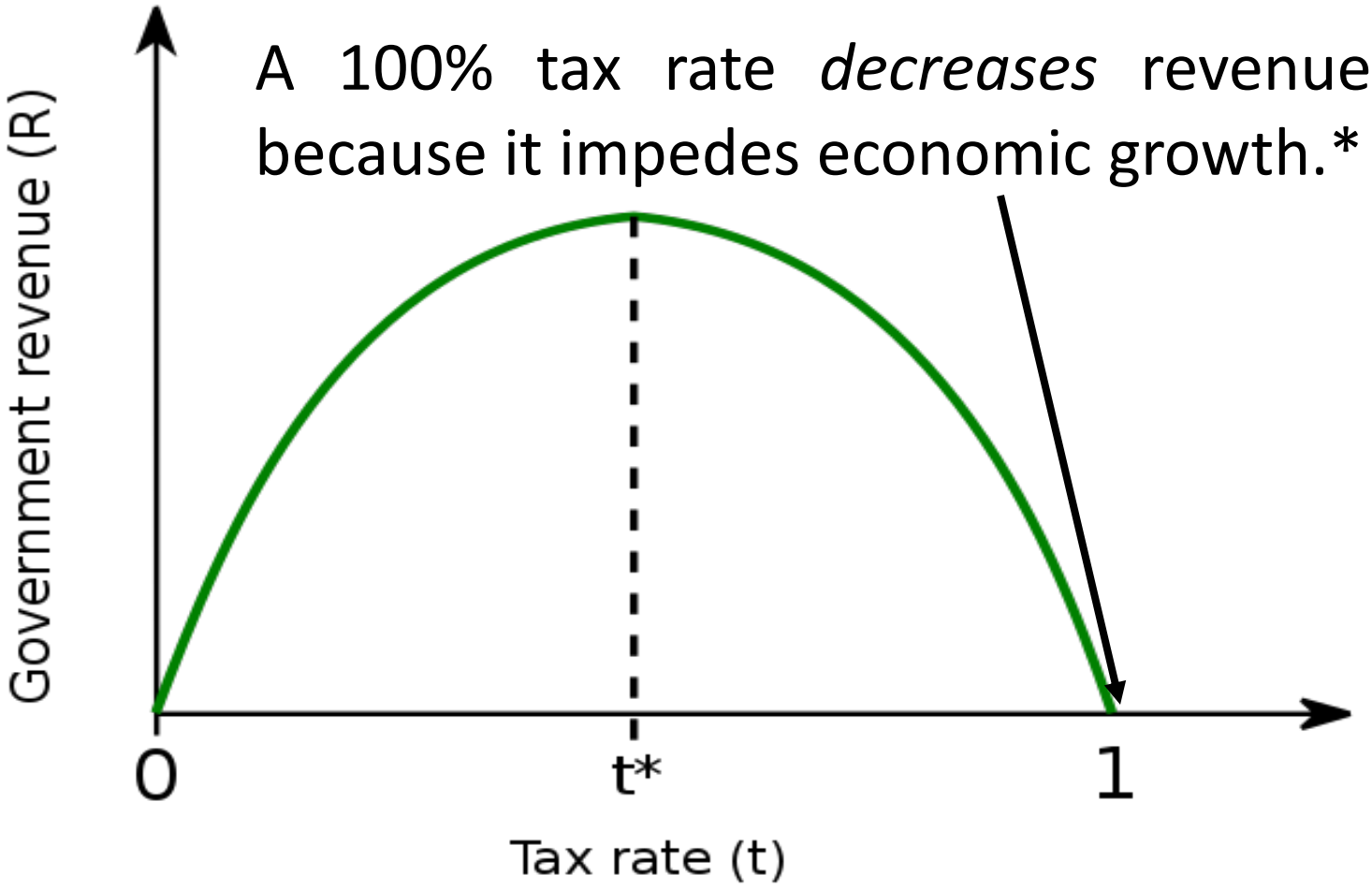
The market price occurs at the intersection of the two lines.

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:

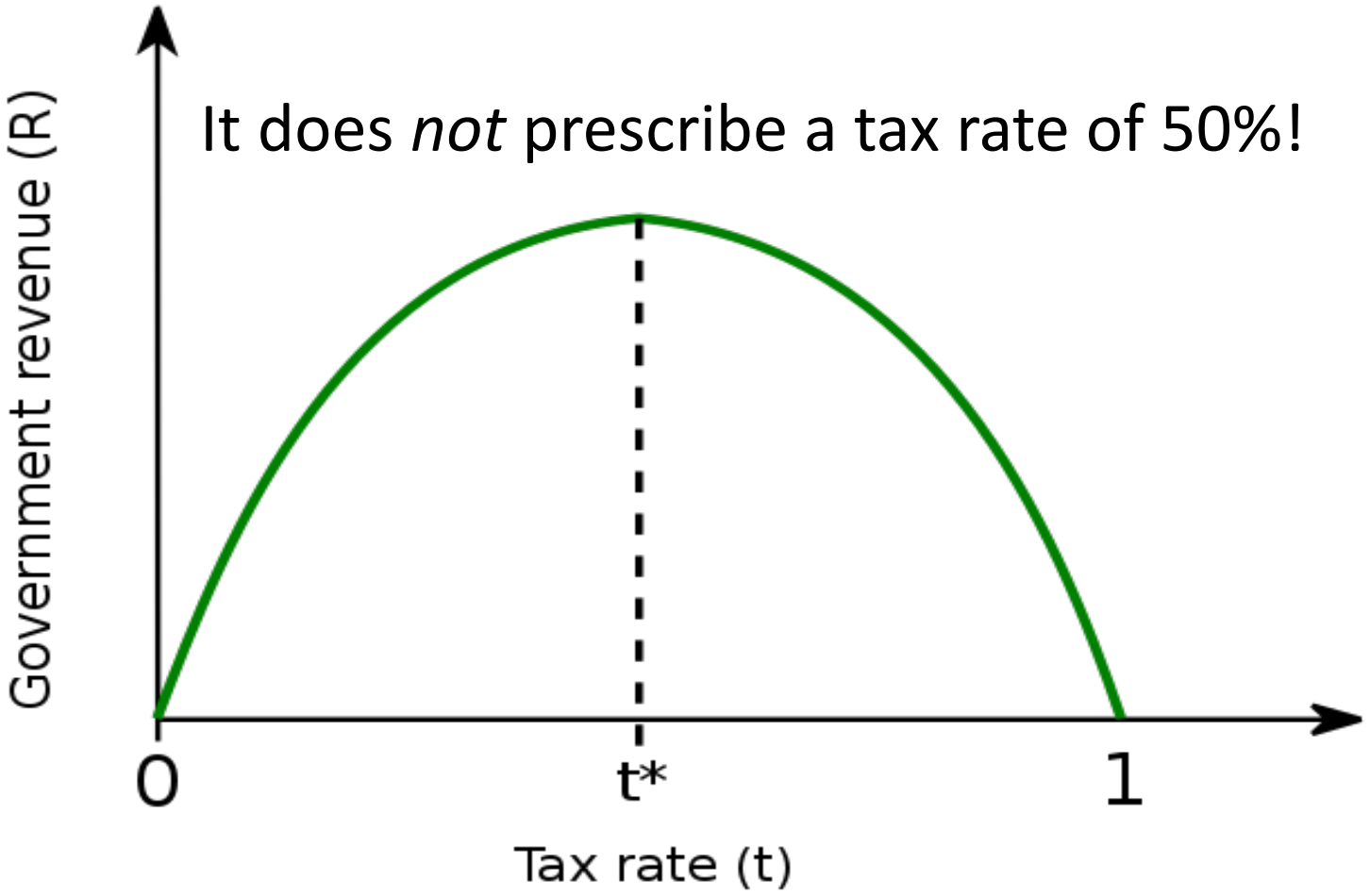
- What are the **costs** of **environmental degradation**?
- What are the **trade-offs** between environmental protection and economic growth?
- Where do you draw the line to **minimize costs to society**?

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



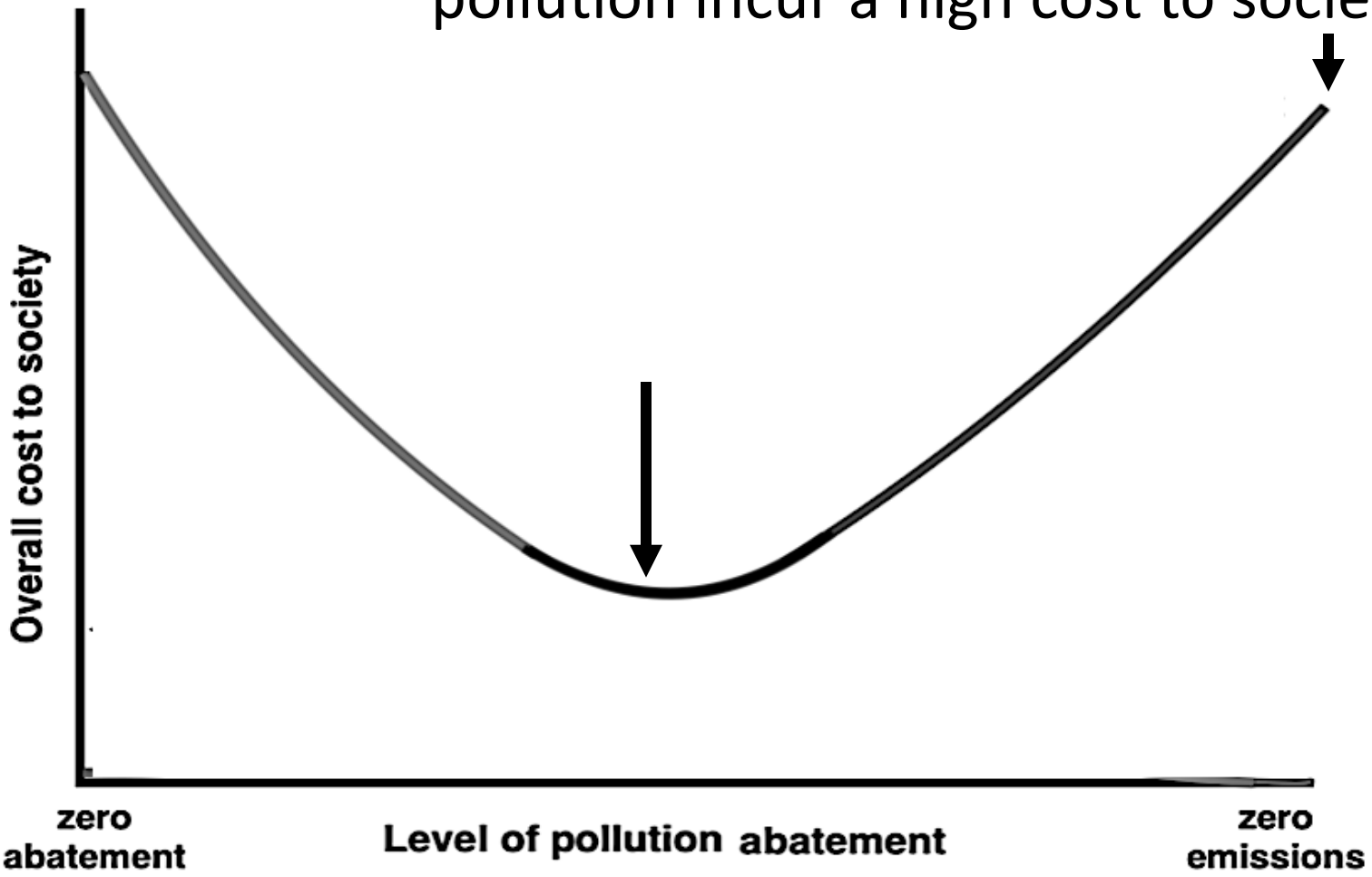
*Why bother to produce if the government takes 100%!

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

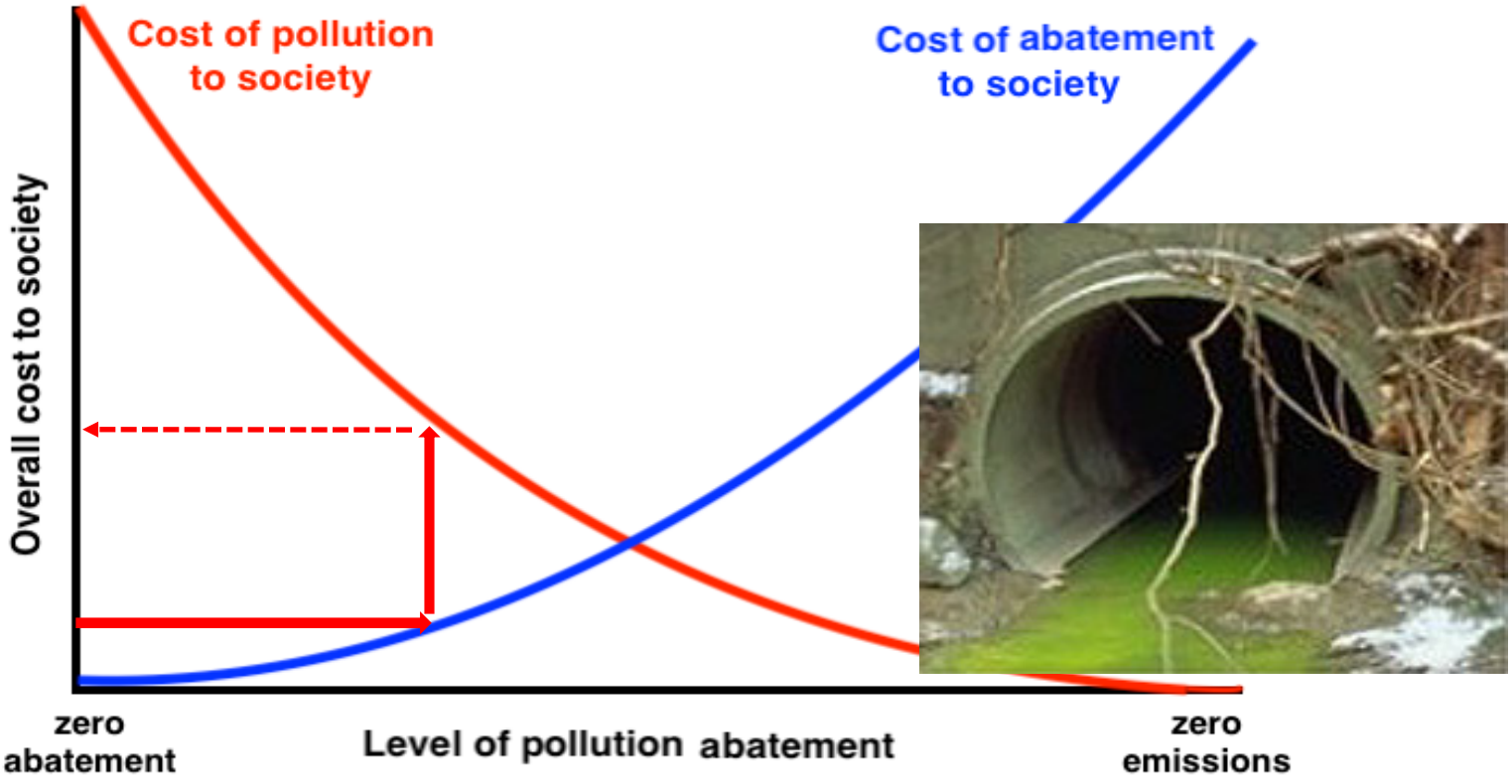


Not unlike the Laffer Curve, ideal pollution mitigation is found between two extremes of zero abatement and zero tolerance.

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

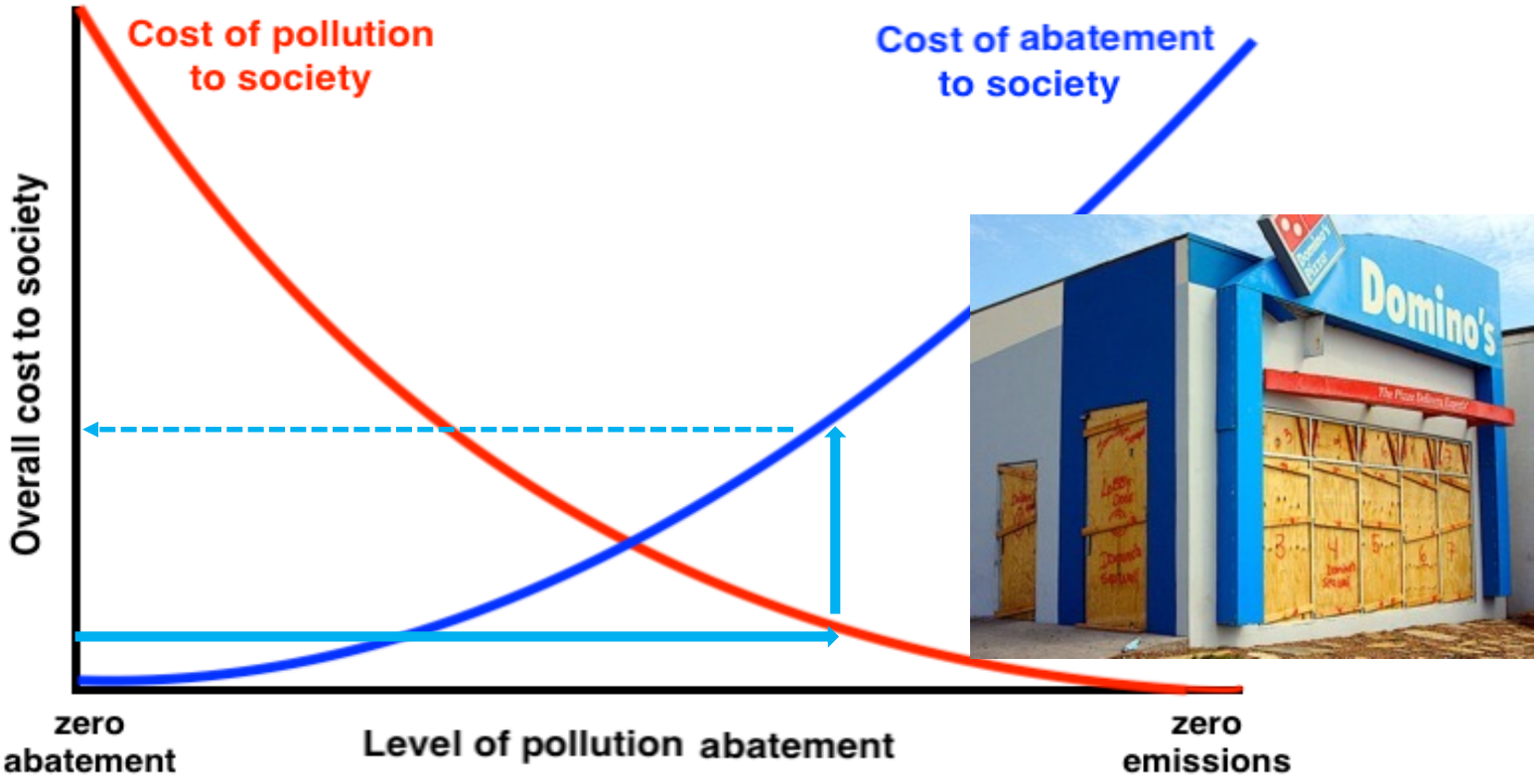


Cost-benefit analysis of pollution abatement



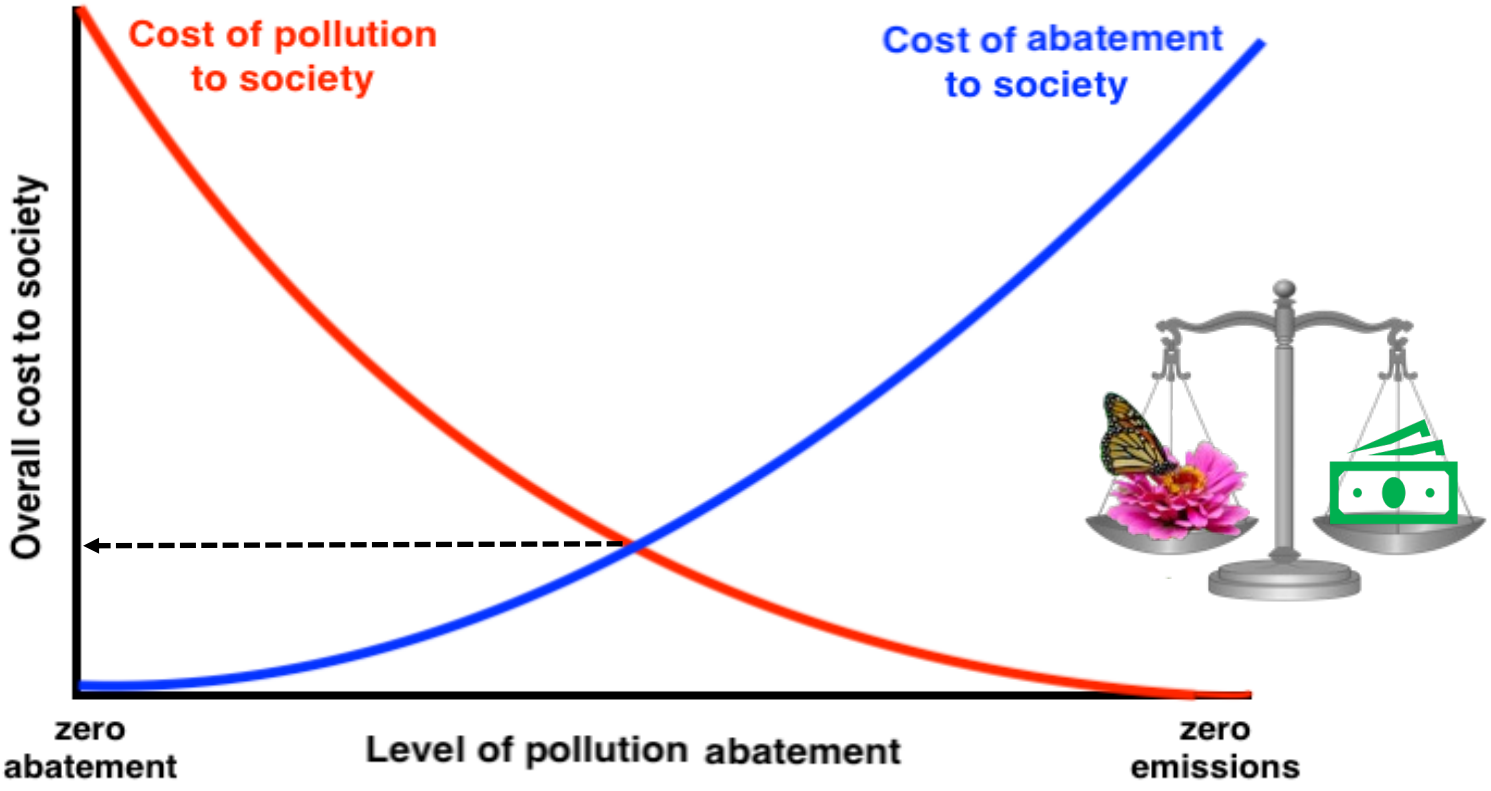
- At this point, the cost of pollution exceeds the cost of abatement.
- More needs to be done to curb the damage from the pollution.

Cost-benefit analysis of pollution abatement



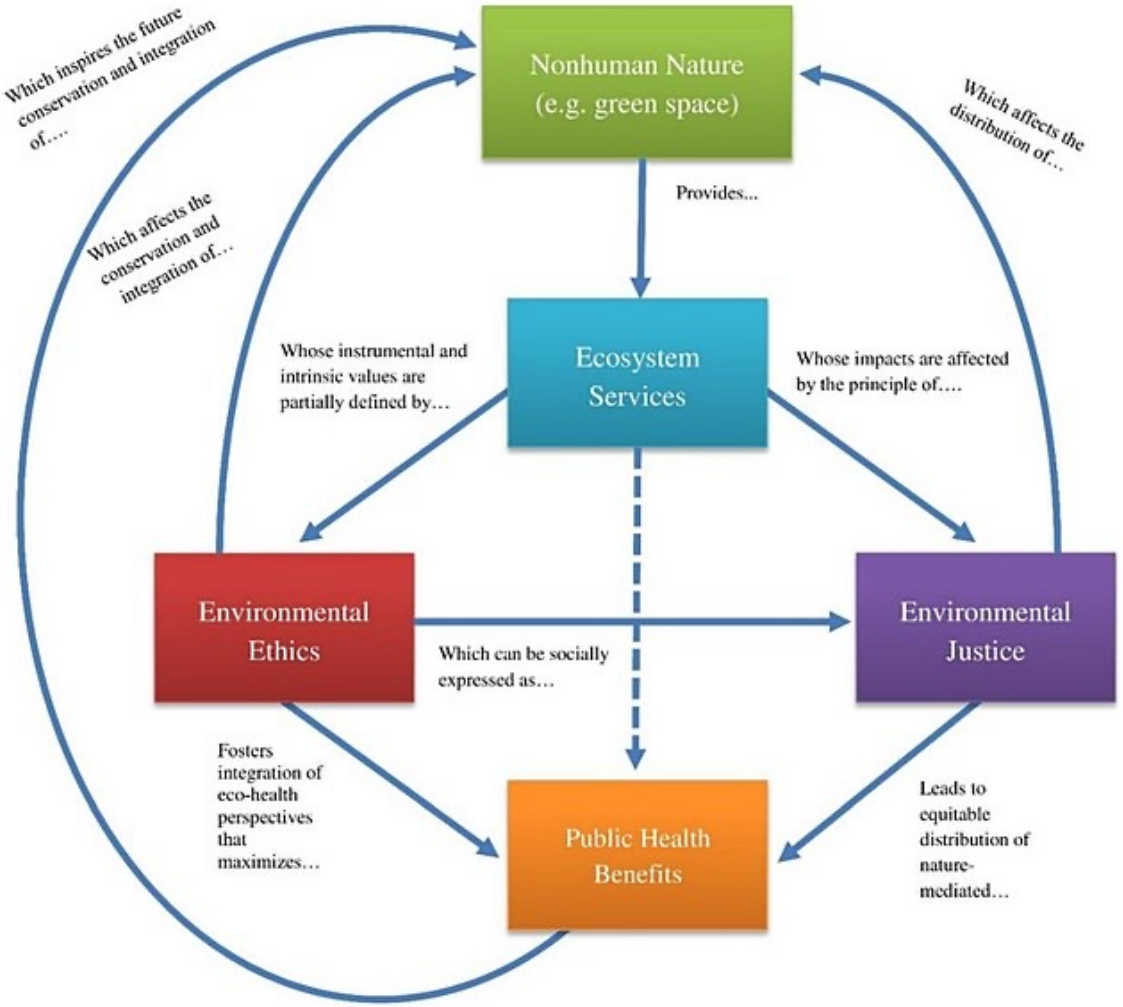
- At this point, the cost of abatement exceeds the cost of pollution.
- The measures for curbing the pollution are hurting the economy.

Cost-benefit analysis of pollution abatement

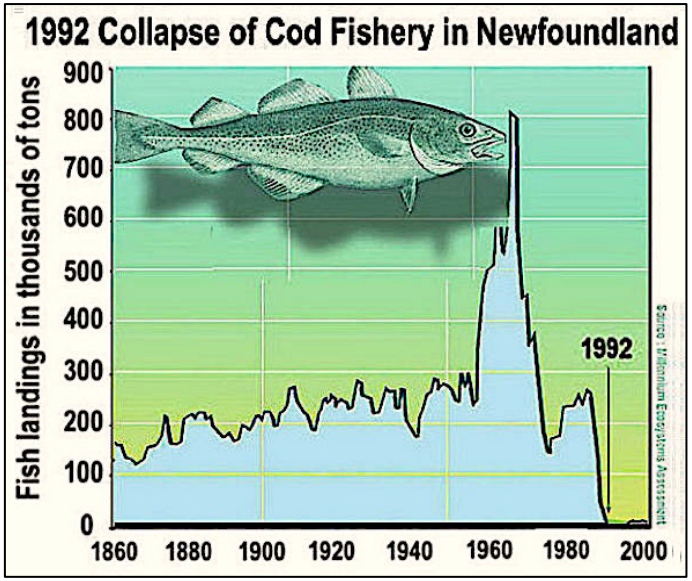


- This point is optimal because it results in the lowest cost to society.
- This strikes a balance between environmental and economic costs.

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



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.

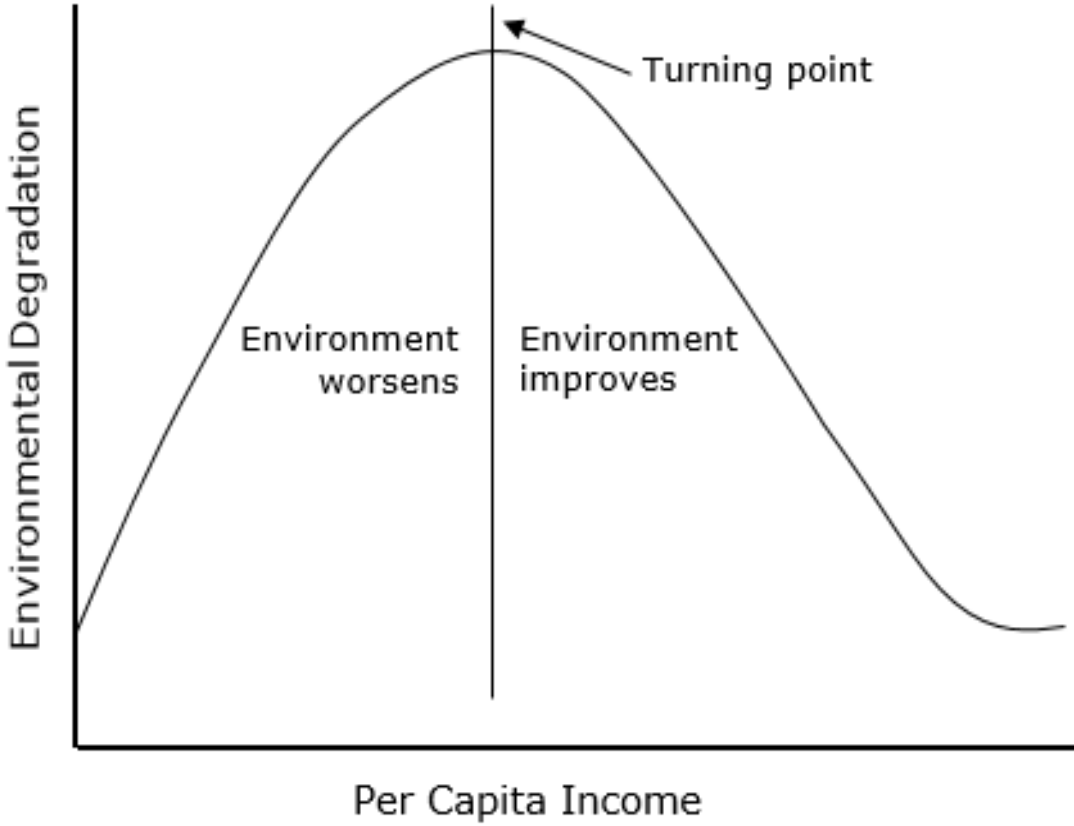
This can be addressed in part through closer scrutiny and more rigorous standards for transparency.

Images downloaded from: https:///best-programs-providers8billiontrees.com/carbon-offsets-credits-companies-2021/neutral-certification-companies/

The "**Kuznet Curve**" shows how the environment improves after wealth increases beyond a certain point.

Unfortunately, some of this **pollution gets outsourced** to poorer nations!

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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