Markets, efficiency, and public policy

ECONOMICS

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UCL

Lecture 12

Context

Looked at behaviour of buyers and sellers under different market conditions and conditions under which the *competitive equilibrium* is *Pareto efficient* (Units 7-8)

In reality, *markets* may allocate resources in a *Pareto-inefficient* way, i.e., *market failure*

What are the sources of these inefficiencies?

How can governments solve the problem?

Motivation

- What are property rights?

  ...*enforcement*

- Who owns property rights over the environment?

  ...*right to pollute*

  ...*right to clean environment*

- Institutions

  ...*government*

  ...*society*

- Social norms

Examples of market failure

Pesticides in the Caribbean

Banana plantation owners used *harmful pesticides* to reduce costs and increase their profits.

The chemicals leaked into the rivers and *contaminated* the local seafood and caused residents to fall seriously ill

Over use of antibiotics

People often *overuse antibiotics* when other treatments would be better, which *creates bacteria-resistant pathogens*

Construction

Polluting the ground waters

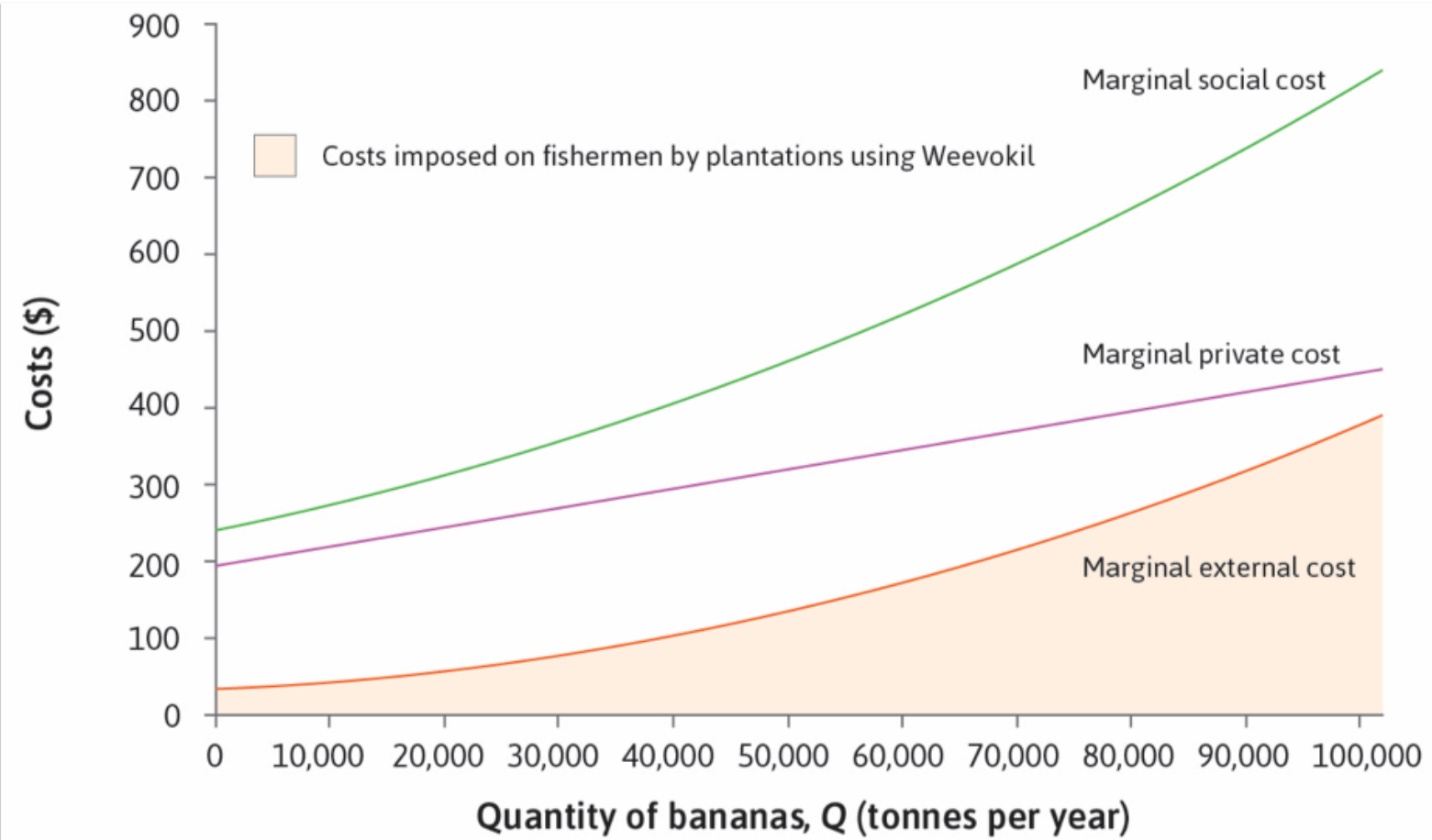
Building design

Key Concepts

External effect or externality	a positive of negative effect of production (or consumption) on another unrelated person
Marginal private cost (MPC)	marginal cost to producer (or consumer), not taking any externalities into account
Marginal external cost (MEC)	marginal cost imposed by producer (or consumer) on others rest of the society
Marginal social cost (MSC)	society's marginal cost
	$MSC = MPC + MEC$

Negative External Effect

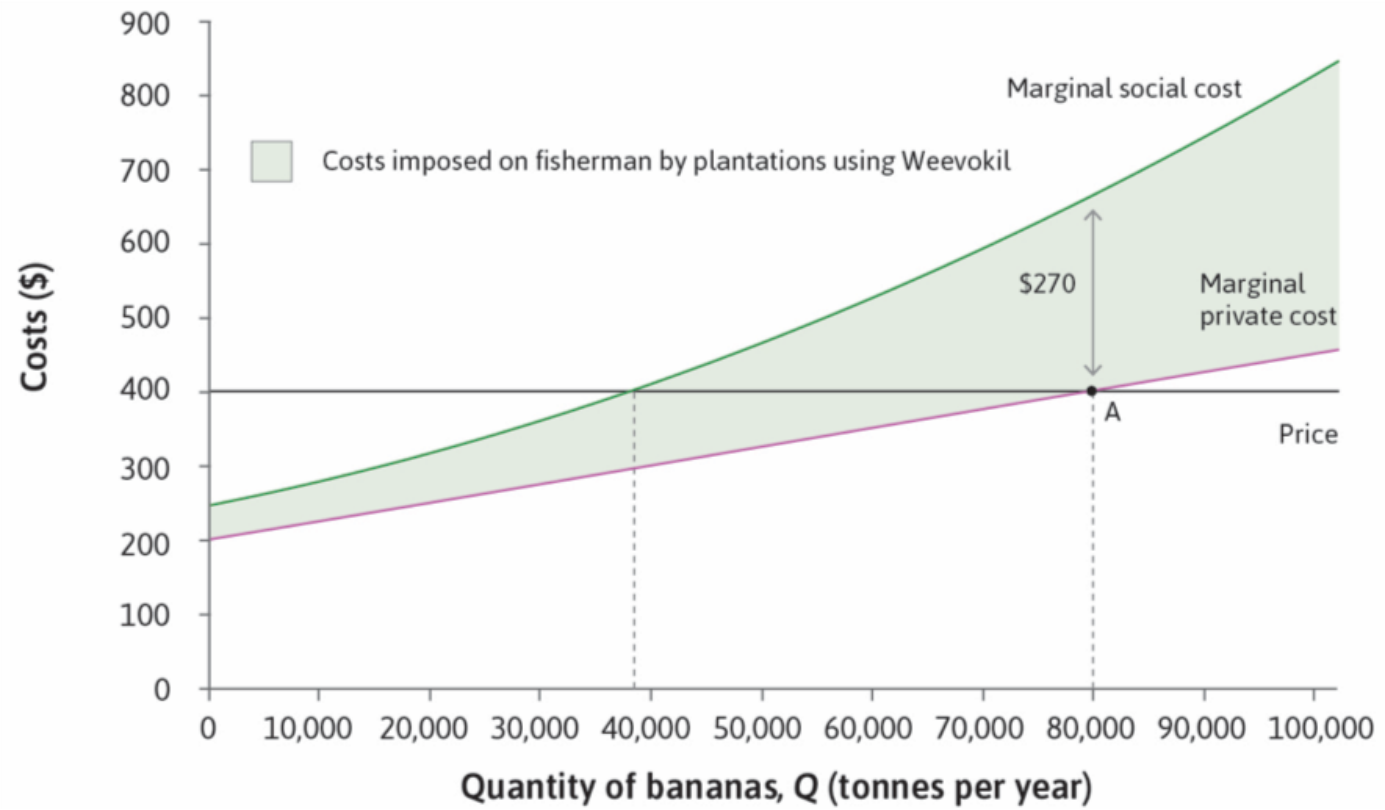
Banana plantation's use of weevokil (pesticide) has a *negative external effect* on **fisherman** downstream



Externality: Pareto Inefficiency

Plantations produce where *price equals MPC*

Pareto-efficient level is where *price equals MSC*

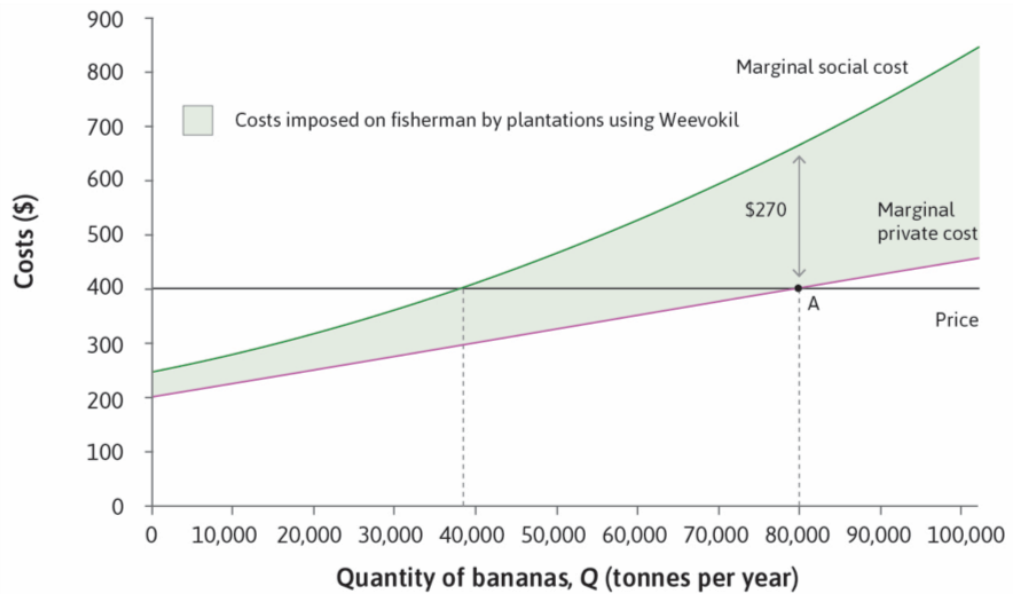


Externality: Pareto Inefficiency

Pareto efficient outcome: *price* = *MSC*

Pareto inefficient outcome: output where *price* = *MPC* leads to *overproduction* and *negative external effects*.

Fishermen ready to pay plantation owners upto $270 to reduce production (at point A).



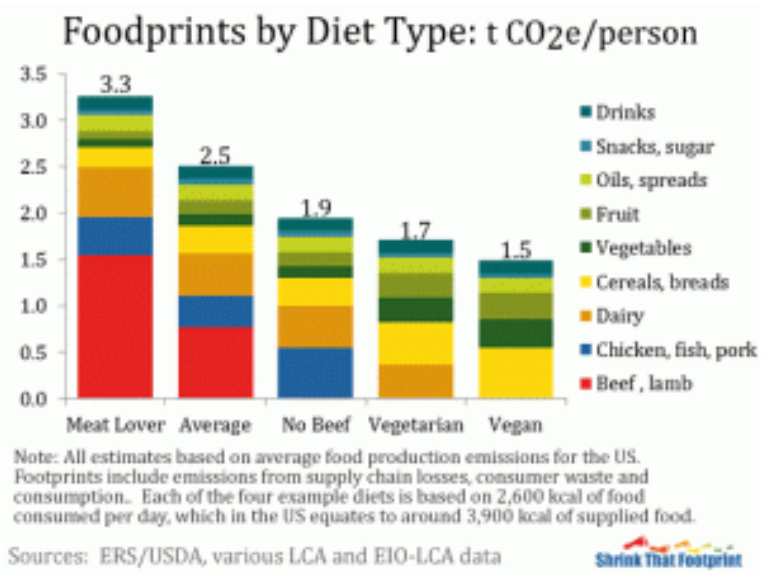
Solution 1: Bargaining

Legally assign property rights to the externality, i.e., either

the *right to pollute*

the *right to clean water / air*

Example: Society gives meat eaters the rights to pollute the environment



Solution 1: Bargaining

Private bargaining between parties involved would result in a

> *Pareto-efficient allocation* regardless of which party has the property rights, in the *absence of transaction costs*

May be *more effective* than government intervention because private parties have more of the necessary information

However, *transaction costs* can be a major obstacle in reality.

> These transaction costs are the *costs of acquiring information*, *enforcing the contract*, or *collective action*

Solution 1: Bargaining

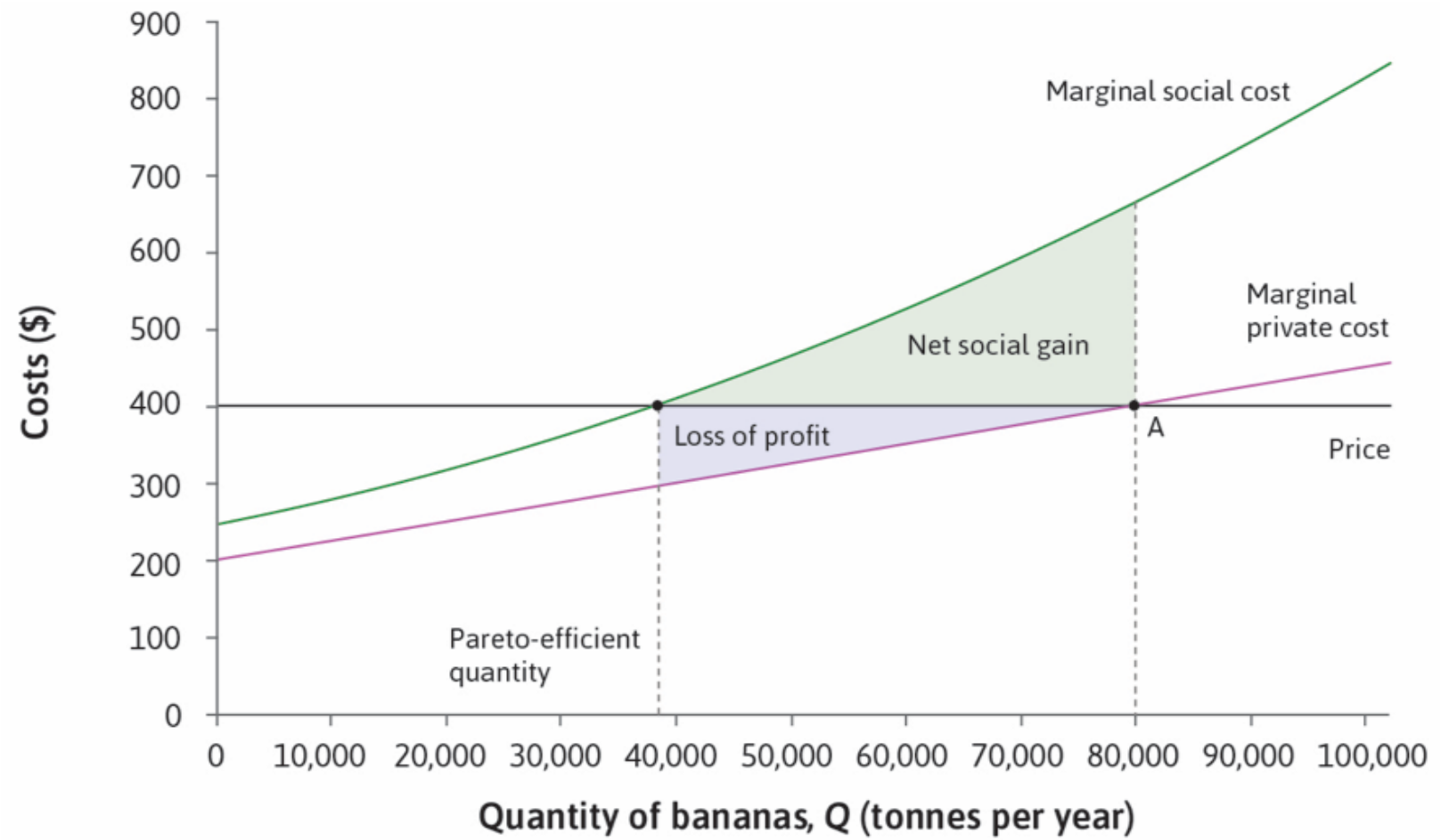
In the pesticides example, there is a *net social gain* that parties could share by *reducing production*, because the fall in plantations' profit is smaller than the gain for the fishermen.

If the *plantation owners' had the right to pollute*, then they would like to be compensated for her lost profits.

If the *fishing industry had the right to clean water*, they would like to be compensated for the external cost they bear, ie, sum of the blue and green area

Solution 1: Bargaining

Actual compensation depends on relative bargaining power



Practical limits of bargaining

Impediments to collective action: finding a representative and agreeing on how to split the gains within each party

Missing information: calculating the exact costs imposed on each fisherman and each plantation's contribution to pollution

Enforcement: it may be difficult for a court to determine whether plantations have complied or not

Limited funds: fisherman may not have enough money to pay plantations the compensation required.

Government policy

Regulation of production:

cap at socially optimal amount

May be difficult to determine and enforce the right quota for each polluter

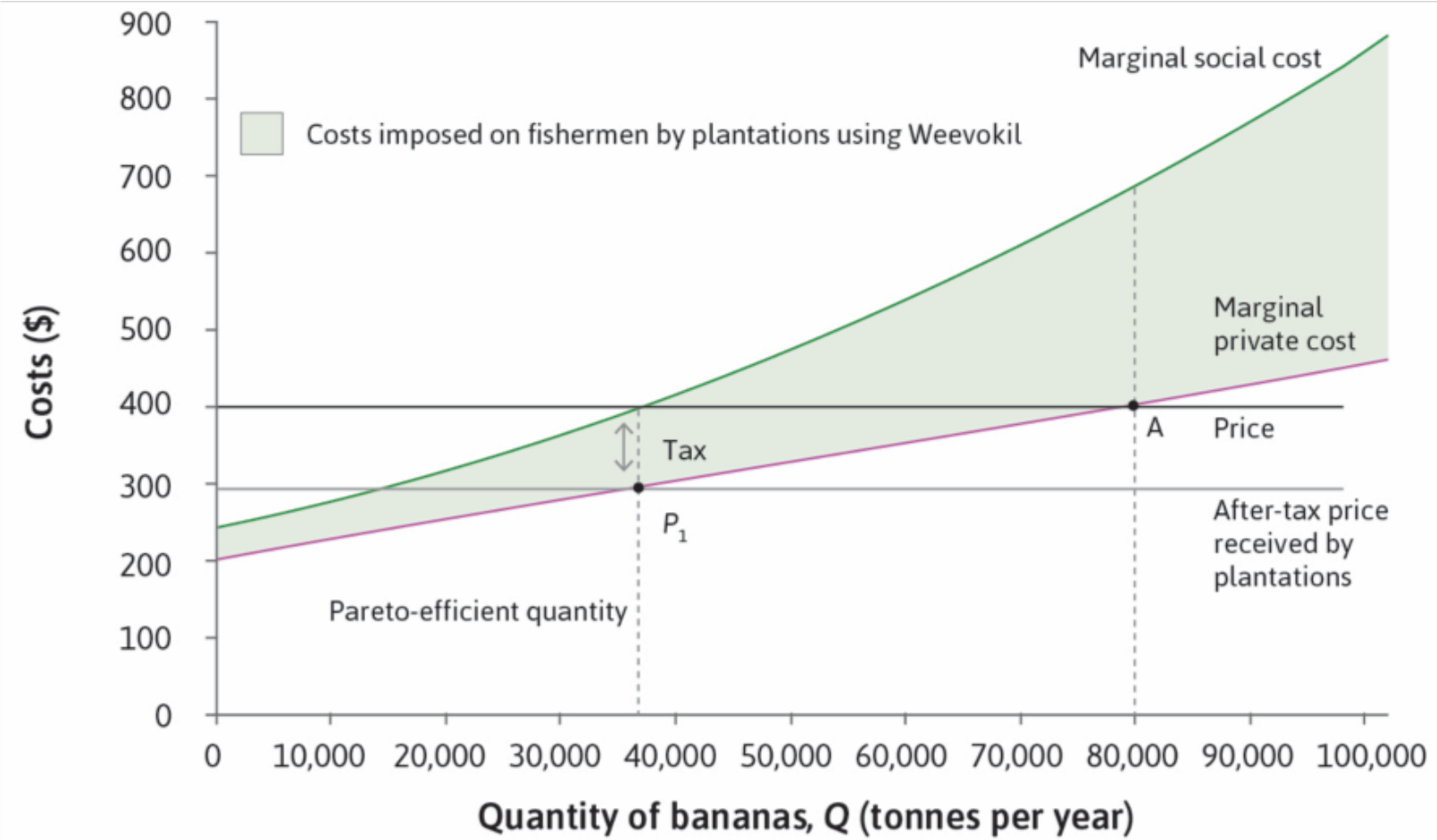
Pigouvian tax/subsidy

tax/subsidy on firms generating negative/positive external effects, in order to correct an inefficient market outcome.

Enforcing compensation for affected parties.

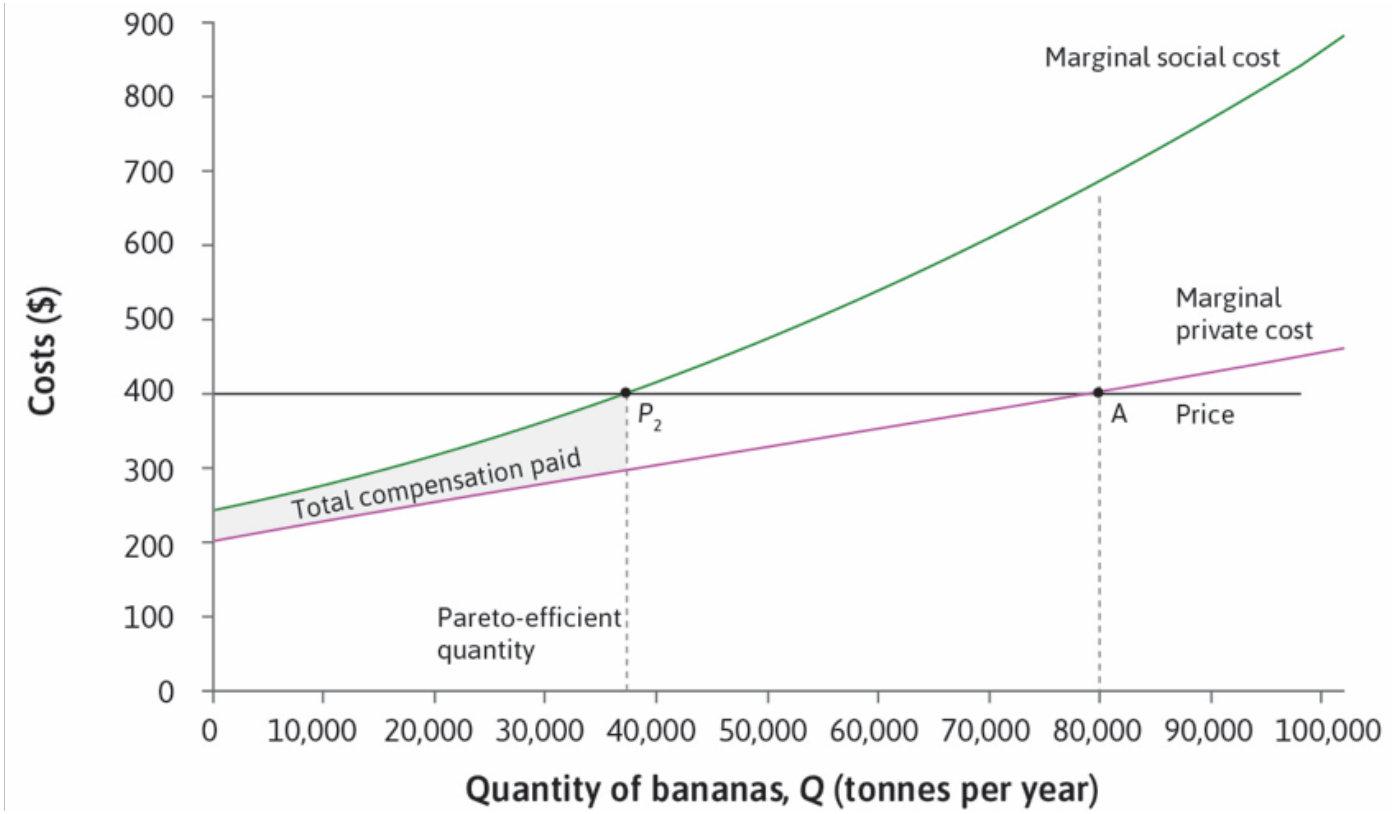
Solution 2: Pollution tax

Government puts a per-unit tax on output and forces producers to *face the full cost of their actions* and produce at *socially optimal output*



Solution 3: Compensation

Government requires plantation owners to pay fishermen compensation for each tonne produced. Producers choose the *socially optimal level of output*.



Practical limits of Government policy

Similar limitations to those for private bargaining:

Missing information – government may not know the exact tax or compensation needed to correct the problem.

Measurement – Marginal social costs are difficult to measure.

Lobbying - The government may favour the more powerful group, in which case it could impose a Pareto-efficient outcome that is unfair.

Characteristics of a Good

Rival	where use by one person reduces its availability to others
Non-rival	*use by one person does not reduce its availability to others*
Excludable	people can be excluded from accessing the good
Non-excludable	*impossible to exclude anyone from having access to the good*

Public Goods

Classification criteria

nature of the good and *prevailing institution* that supply the good

Public good

Non-rival

May or may not be excludable

Common-pool resources

Rival

Non-excludable

	Rival	Non-rival
Excludable	*Private goods*	*Public goods* that are artificially scarce
Non-excludable	*Common-pool resources*	*Public goods* that are non excludable

Public Goods

	Rival	Non-rival
Excludable	*Private goods*	*Public goods* that are artificially scarce
	food, clothes, houses	*cable TV, tollroad, patented idea*
Non-excludable	*Common-pool resources*	*Public goods* that are non excludable
	fish stocks in a lake, common grazing land	*public broadcast, calculus, national defence, pollution*

Public Goods and Market Failure

Markets typically allocate *private goods*

Market fails for **common pool resources**: non-excludable

Non-rival goods:
marginal cost zero, price can't be set to marginal cost

Market fails for **public goods:** non-rival

Non-excludable goods:
impossible to set price without excludability

Examples:

Common pool resources: problem of the commons

Public goods: National defence

Asymmetric Information

When information is asymmetric, *one party* **knows something** relevant to the transaction but the *other party* **does not know it**

Two forms of asymmetric information:

Hidden action: leads to a **moral hazard** problem

Example: Involuntary unemployment because employers cannot observe employees' exact work effort (Unit 6)

Hidden type (attribute): leads to an **adverse selection** problem

Example: Buyers of second-hand cars do not know all the attributes of the car e.g. quality, but the sellers do.

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Adverse Selection: Health insurance

Insuree **know** their *health status*: unhealthy are more likely to buy

Insurance company **does not know** the *health status* of the people buying insurance

Insurance company charges prices that allow it to *break-even*.

Higher the insurance prices, the **unhealthier** the pool of people buying insurance

$\Rightarrow$ **Insurance Market Collapses**

Adverse selection: Most people buying insurance know their own health problems but insurers don't

Missing market: *Many healthy people* who would like to buy insurance *remain uninsured*

Moral Hazard: Car insurance

Any form of insurance also has a **hidden action** problem, i.e., the buyer may take more risks once she is insured

> *Example:* purchasing full coverage against damage may make someone more careless in driving

Insurance companies can put some limits in a contract, but *cannot enforce other types of good behaviour* e.g. driving speed or careful driving.

If the driver is careful, it leads to *external benefits* to the insurance company

Moral Hazard: Borrowing

Lender does know what **action** the *borrower* will take after she has obtained the loan

The lender only lends to borrower who put up *collateral*

Some poor borrowers are *excluded* from the credit market

There is *missing market* where some good borrowers are not able to obtain loans because they do not have the **wealth** to put up the *collateral*

Inequality in society

Price > Marginal Cost

Firms may set price above marginal cost because

- *Limited competition*, e.g., selling differentiated product (Unit 7)
- *Natural monopoly* due to economies of scale

Market failure because allocation is not Pareto efficient

- *Deadweight loss* can be eliminated via either
  - *price discrimination:* allocation 'unfair' because firms capture entire surplus

or

  - *competition policy:* government ensures market competition

Should markets allocate everything?

Arguments against using markets for everything:

Repugnant markets: creating a market for certain goods or services would violate *ethical* and *social norms* e.g. slavery, organ market

Other institutions may be *more effective than market* in providing goods and services e.g. governments, families

Merit goods: goods that should be available to everyone independent of their ability to pay, e.g., education

Market mechanisms may *crowd out* **social norms** or social preferences