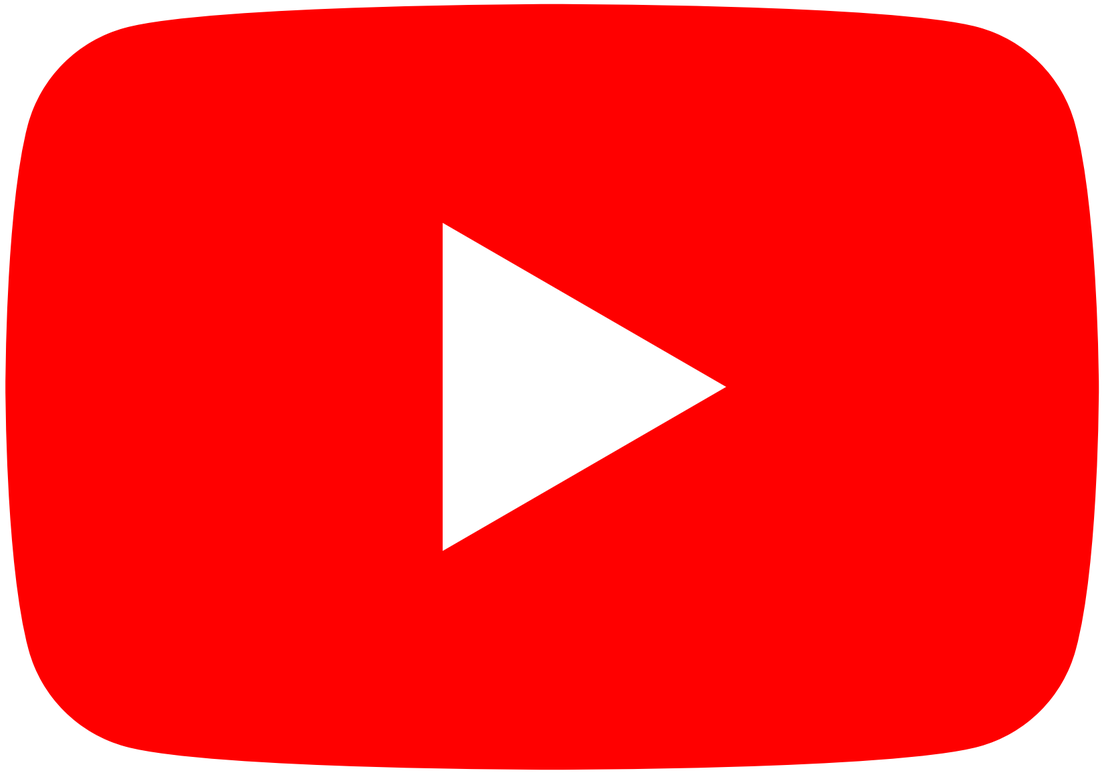
Market Failures

EXTERNALITIES & COMMON POOL/ACCESS RESOURCES

2.8

Review

Define Market Failure



Review

Why do market failures exist?

Optimal Social Quantity

New terms to know

MPC (Marginal Private Cost)

The cost for firms to produce an additional unit of a good or service

MSC (Marginal Social Cost)

The total cost to society is when an additional unit of a good or service is produced. MSC includes MPC.

MPB (Marginal Private Benefit)

The benefit to consumers of consuming an additional unit of a good or service.

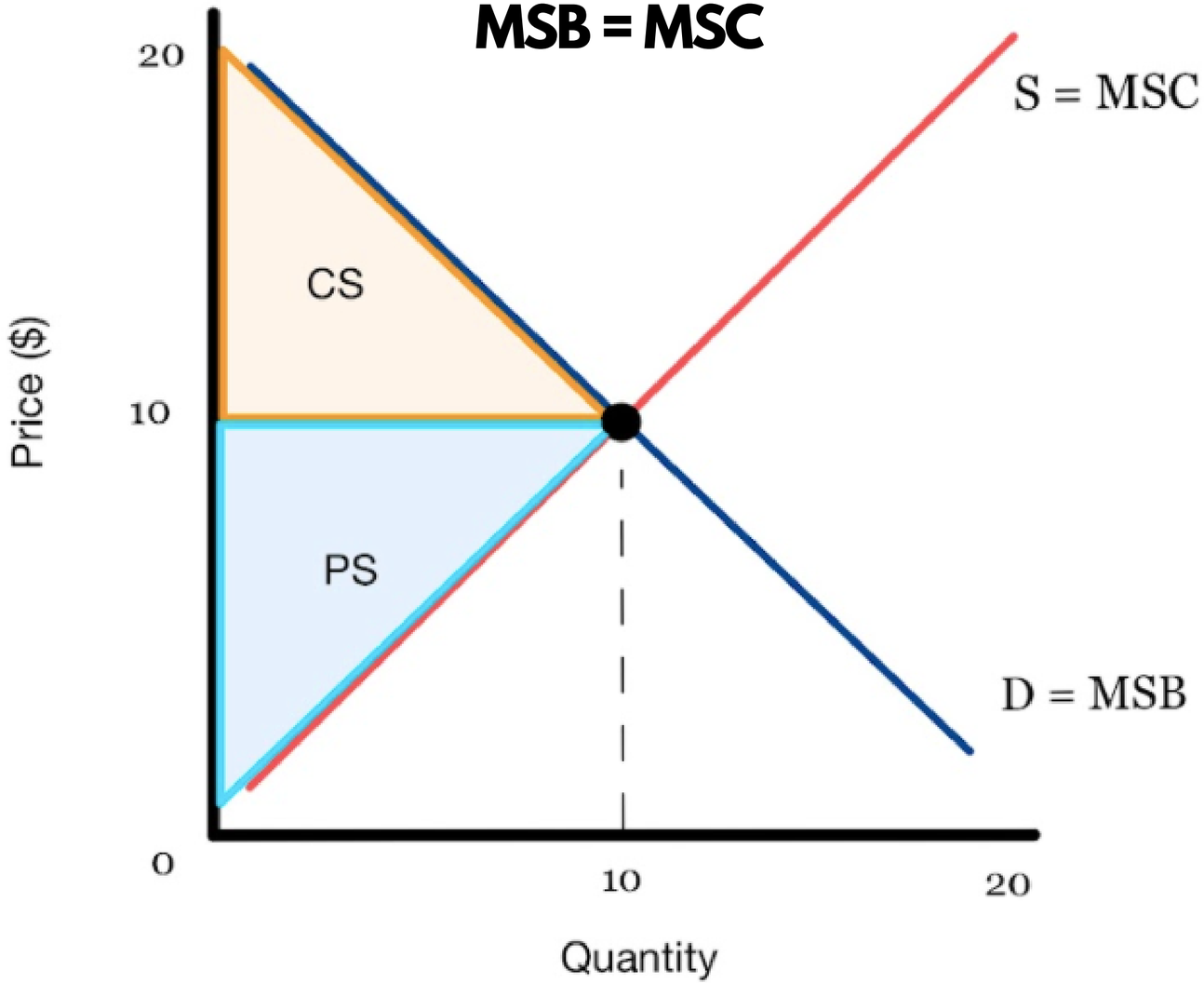
MSB (Marginal Social Benefit)

The total benefit to society when an additional unit of a good or service is consumed.

Optimal Social Quantity

Equilibirum

MSB = MSC



Optimal Social Quantity

New terms to know

Merit Goods

Goods that are beneficial to the individual and society as a whole and are usually, under-provided.

Demerit Goods

Goods that are harmful to the individual and society as a whole and are usually, over-provided.

Externalities

When third parties, who are uninvolved, are affected by the benefits and costs involved in producing or consuming a particular good.

Brainstorm with a partner or small group a list of 5 externalities in the real world

Four Types of Externalities

Negative externalities of production

MSC > MSB

Positive externalities of production

MSC < MSB

Negative externalities of consumption

MSC > MSB

Positive externalities of consumption

MSC < MSB

Negative Externality of Production

The production process of a good or service generates a negative effect on a third party or on society as a whole.

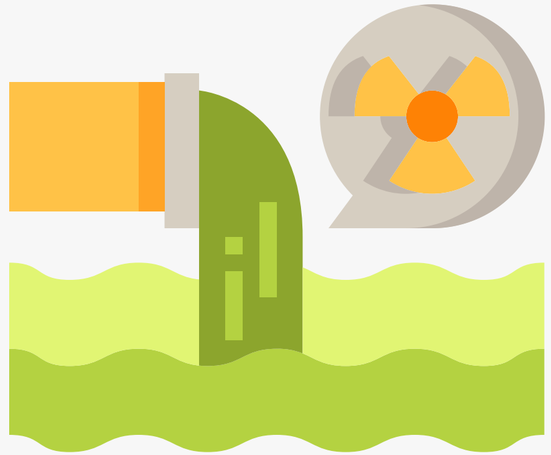
Private firms do not take the additional costs on society into consideration during production.

Examples

Air Pollution

Water Pollution

Loud noises generated.



Negative Externality of Production

In the graph below, a typical company is making coal and is a significant contributor to air pollution in the area.

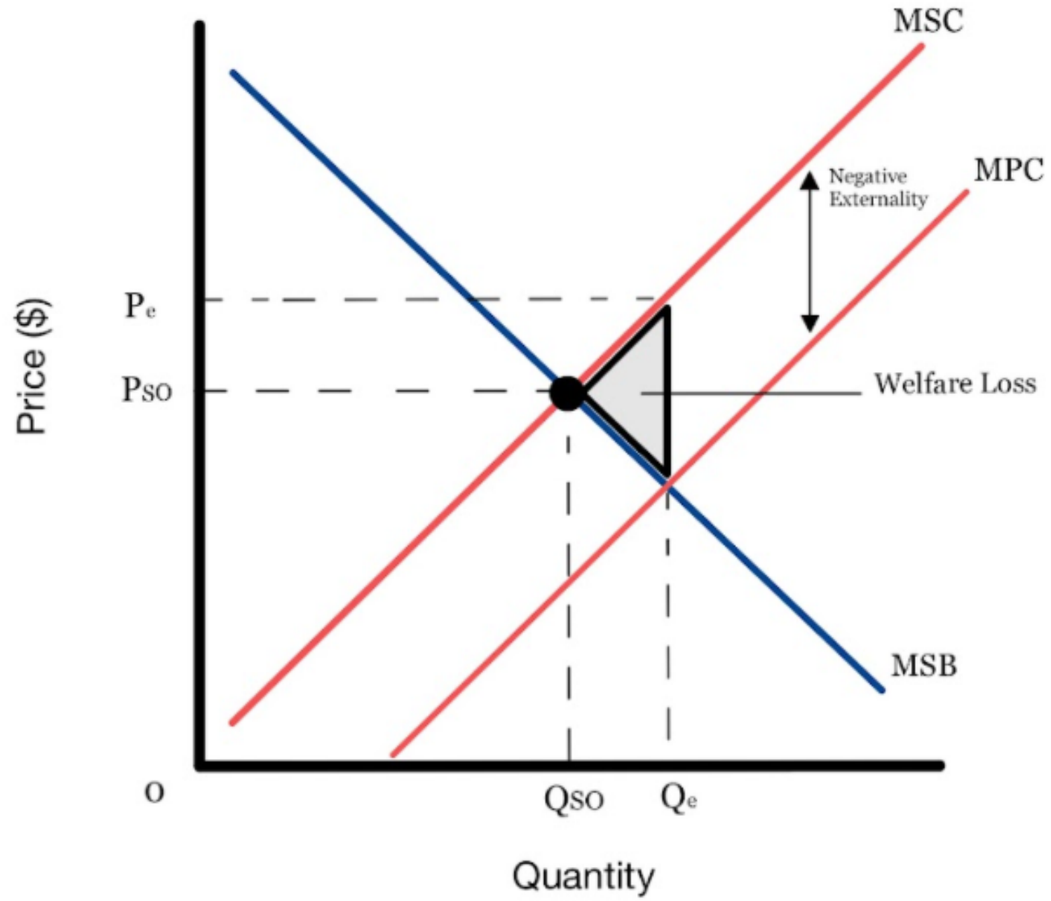
The firm will only take into consideration their private benefit and costs when determining how much to produce. The cost to society is much higher.

ATTENTION:

Notice that the negative externality only affects production (supply curve).

The demand curve represents both MSB + MPB.

Production externalities ALWAYS affect Cost/Supply



Government Responses

The goal is to limit or decrease the production.

Legislation

Pass laws regarding environmental standards that firms must comply with. (Machinery upgrades, air filters, disposal requirements)

Pros: Easy to Apply

Cons: Cost of production increases -> unemployment potential, cost of enforcing policy

Carbon Tax

Impose a tax on the firm per unit of output produced.

Pros: Government Revenue, Easy to Apply

Cons: Difficult to measure, Difficult to calculate tax

Tradable Emission Permits

Permission to pollute permits that enforce a quota of emissions. An eco-friendly firm can sell its permit for profit.

Pros: Encourages firms to lower cost, free-market sets price of a permit, cooperation among businesses

Cons: Difficult to set an acceptable level of pollution, Difficult to measure pollution

Positive Externality of Production

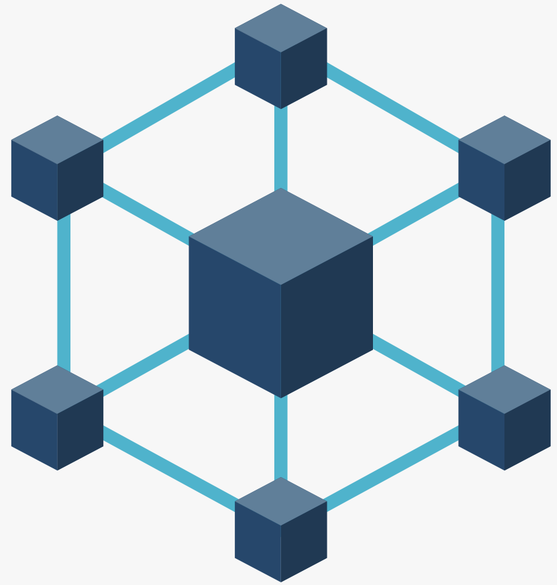
The production process of a good or service generates a positive effect on a third party or on society as a whole.

Examples

Research and Development of New Tech (BlockChain)

Bee Keeping

Flood Defence Systems

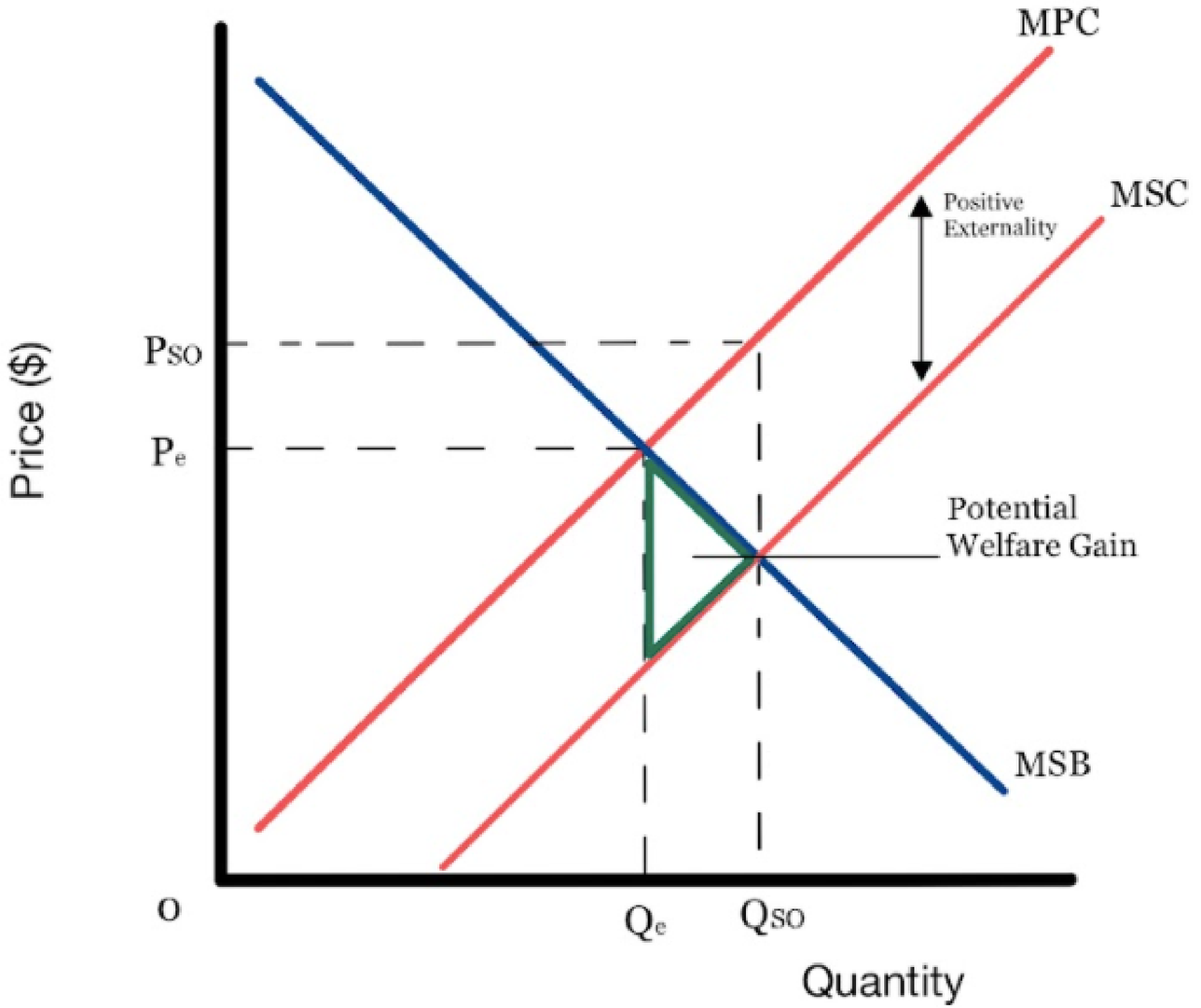


Positive Externality of Production

Due to it's a positive effect on society, MSC is less than than MPC.

Please note: This is still an inefficient allocation of resources but, a potential welfare gain.

Once again, production externalities ALWAYS affect costs/supply.



Government Responses

The goal is to increase the production for the benefit of society.

Subsidizing Firms

Pros: Encourages promotion of the industry and lowers costs for firms.

Cons: The opportunity cost of using government funds, (may have to give up other things such as healthcare)

Direct Government Provision

Pros: Government is in full control

Cons: High costs and opportunity cost, lack of expertise by the government, private firms discouraged from joining market

Negative Externality of Consumption

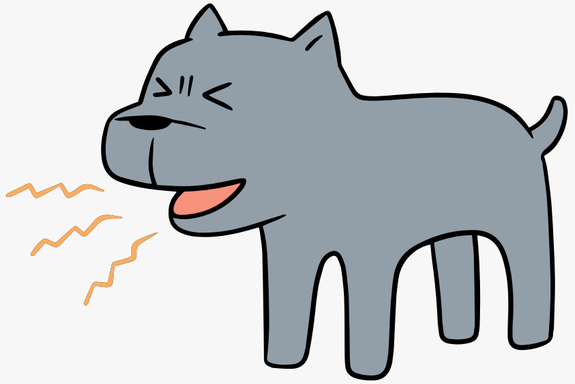
The consumption of a good or service generates a negative effect on a third party or on society as a whole.

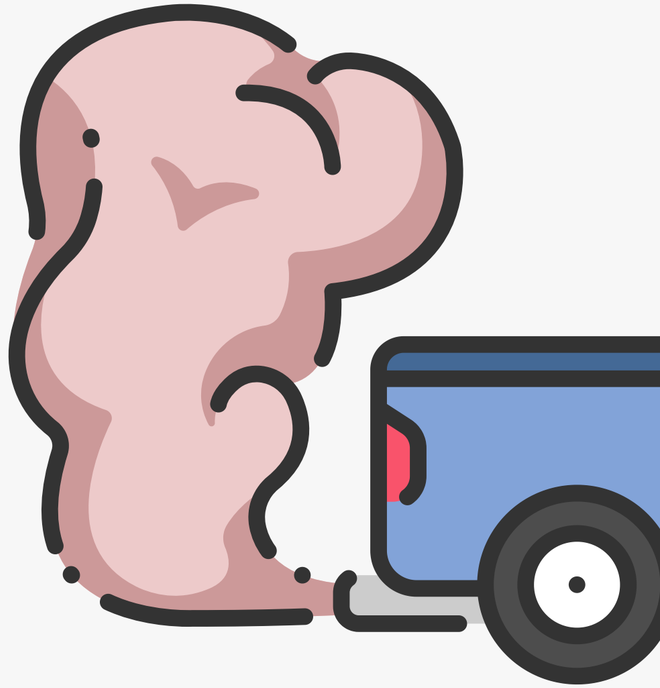
Examples

Smoking cigarettes around others

Dog Ownership in Apartments

Driving Vehicles with High Emissions



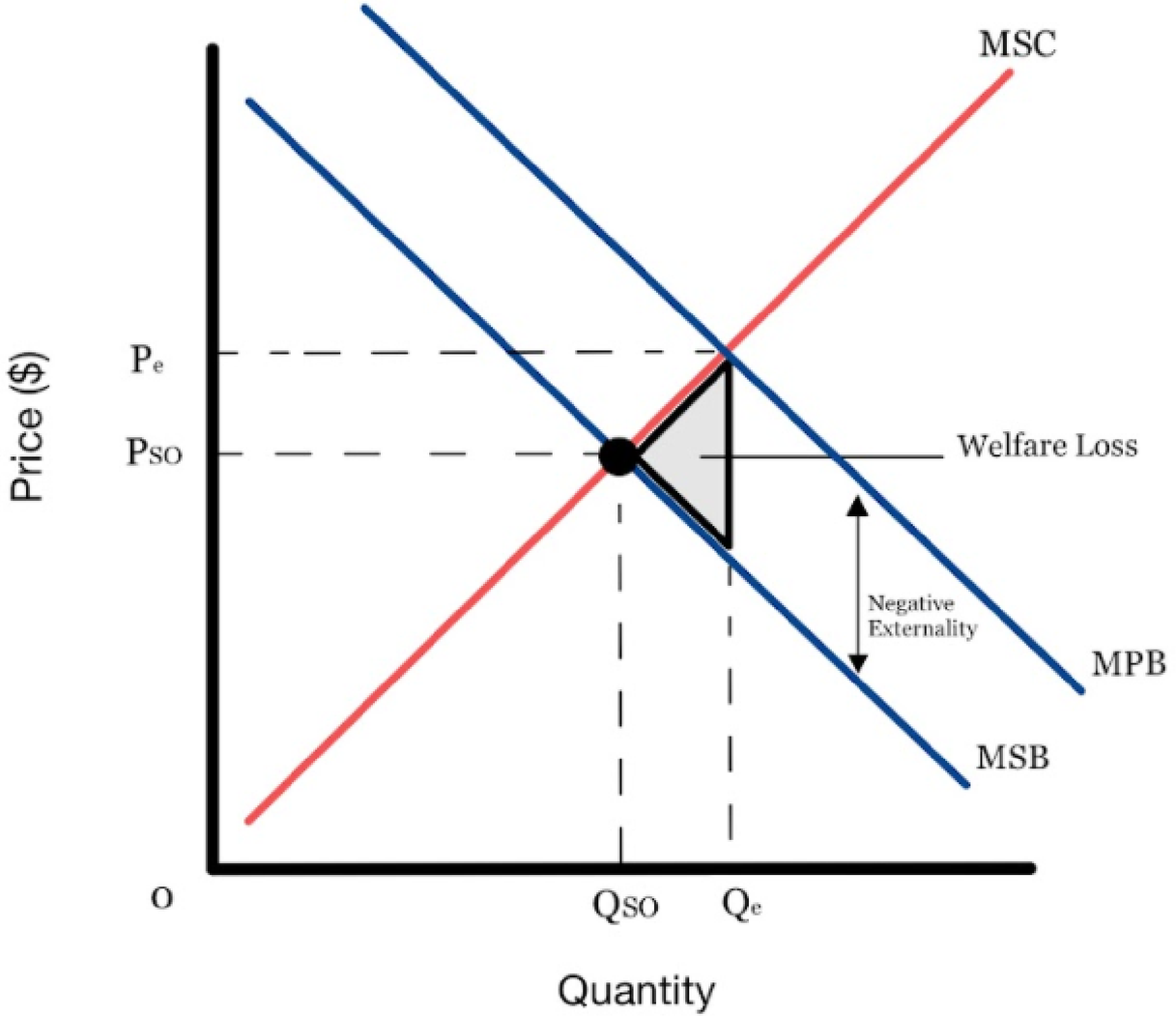


Negative Externality of Consumption

Due to its negative effect on society, MSB is lower than MPB. Consumption is greater than what it SHOULD BE. The good is over-allocated.

ATTENTION
Externalities of consumption focus on Demand/Benefits.

Therefore, MSC and MPC will always be equal.



Government Responses

The goal is to decrease consumption for the benefit of society.

Indirect Taxes

Taxes designed to correct negative externalities are called Pigouvian Taxes

Pros: Increases the cost of the good quickly, Government Revenue

Cons: Addictive goods are demand price inelastic, creates black markets

Regulation or Ban

A regulation or full ban to make the product illegal. (Non-smoking Areas)

Pros: Reduce Demand, low cost

Cons: Slow to implement, Government Spending, Enforcing regulations, anger from consumers regarding free-will.

Negative Advertising

Government could fund negative advertising such as images on packs of cigarettes.

Pros: Aims to reduce demand naturally

Cons: High cost and opportunity costs for the government, studies are unclear on how effective advertising is especially on young adults and teenagers.

Positive Externality of Consumption

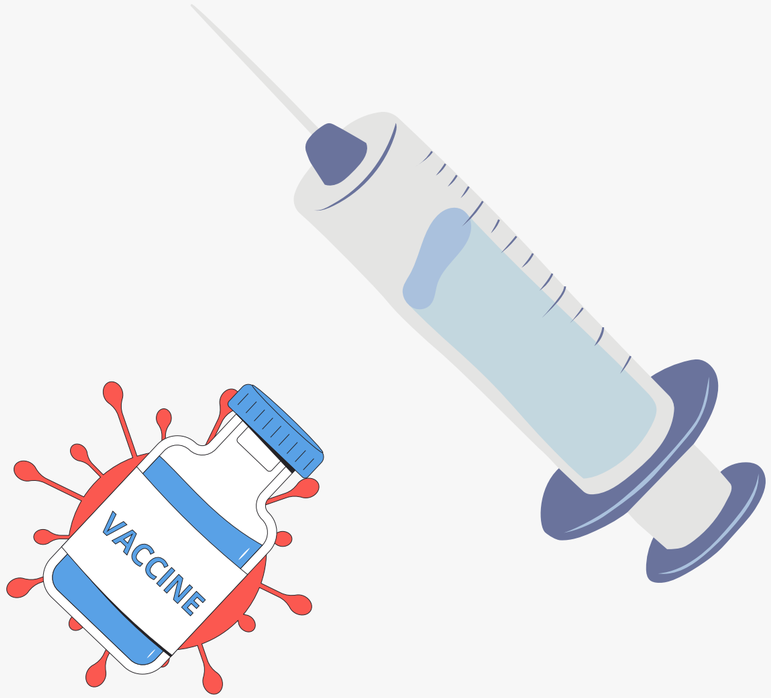
The consumption of a good or service generates a positive effect on a third party or on society as a whole.

Examples

Education

Healthcare

Vaccines

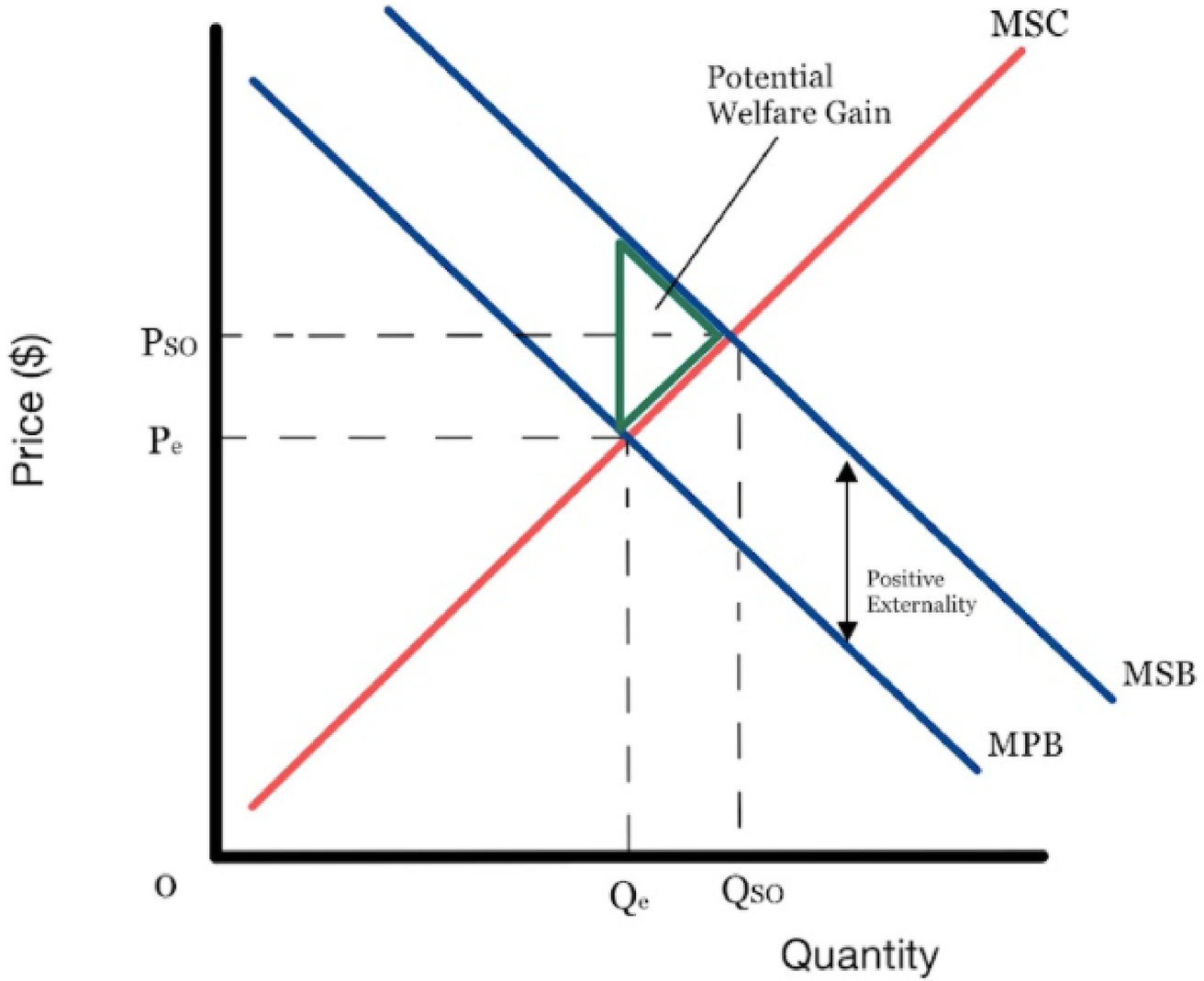


Positive Externality of Consumption

Due to its positive effect on society, MSB is greater than MPB.
Consumption is SMALLER than it should be.

Please note: This is still an inefficient allocation of resources but, a potential welfare gain.

Once again, consumption externalities ALWAYS affect Demand/Benefits.



Government Responses

The goal is to increase the consumption for the benefit of society.

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Pros: Encourages promotion of the industry and lowers costs for firms.

Cons: The opportunity cost of using government funds, (may have to give up other things such as healthcare)

Direct Government Provision

Pros: Government is in full control

Cons: High costs and opportunity cost, lack of expertise by the government, private firms discouraged from joining market

Positive Advertisements

Pros: Aim to increase Demand Naturally

Cons: High costs and opportunity cost

Compulsory Legislation

Pros: Shifts demand effectively

Cons: Government must provide for free, anger from residents, cost of enforcing law

Real World Connection

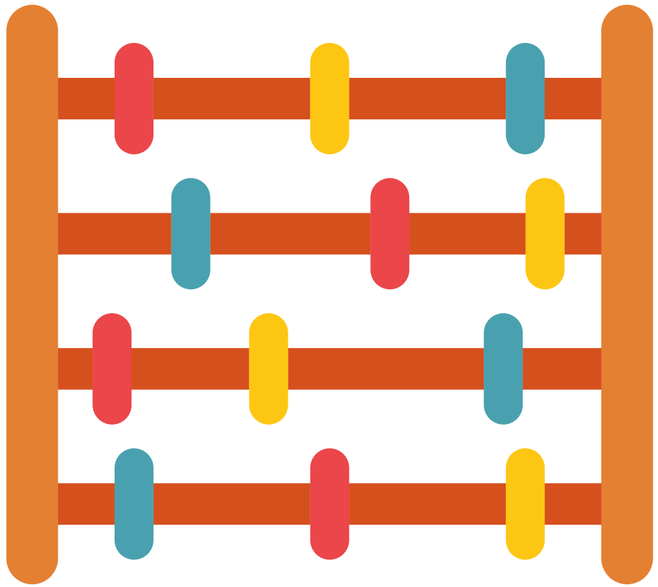
Vaccine Mandate

Vaccine Mandates

Read the following article or Listen and answer the questions below with your group.

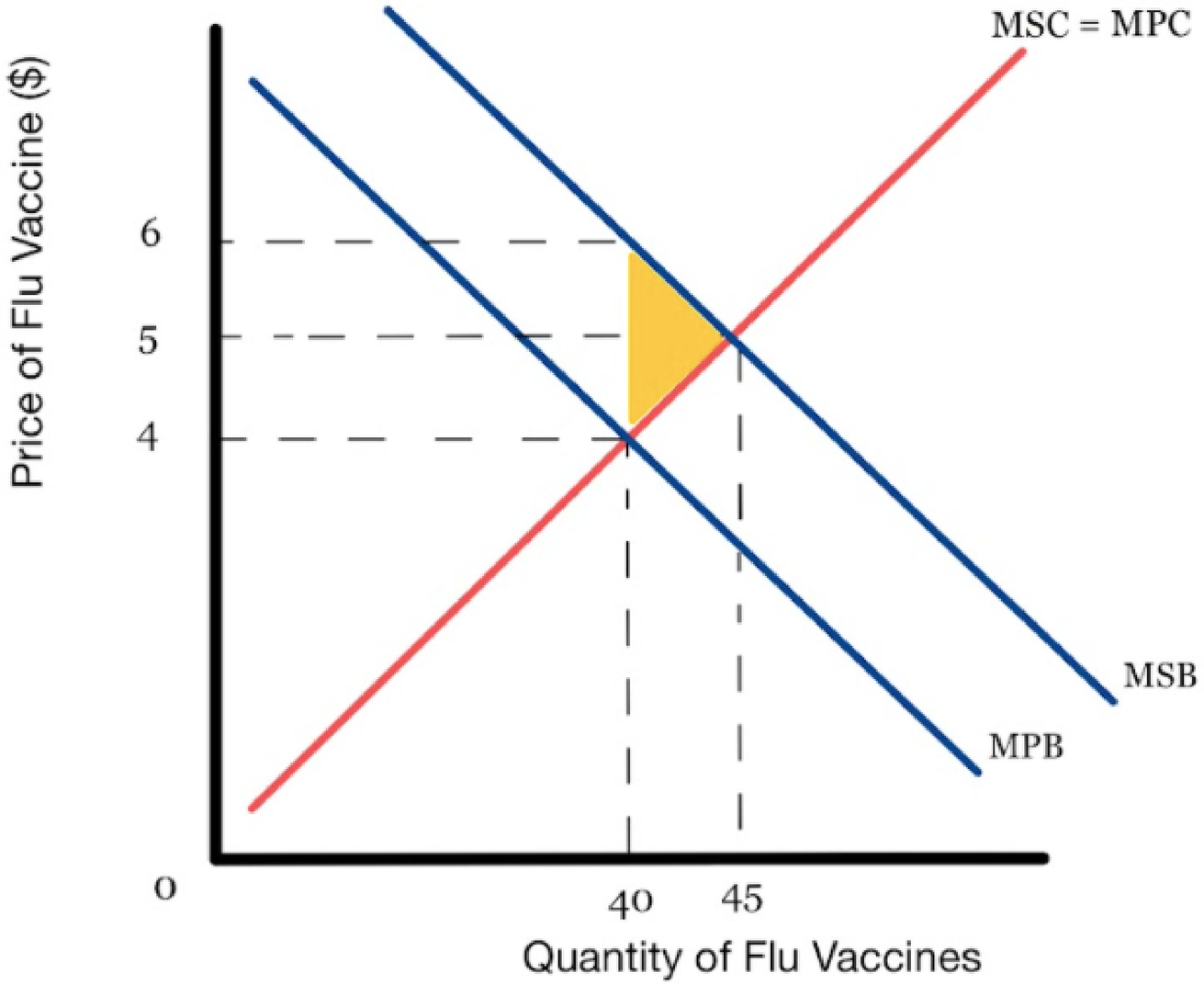
1. What are your initial thoughts on COVID vaccine mandates?
2. Explain the economic rationale for or against them
3. Do you think COVID vaccine mandate are legal? Would you support them?

Welfare Loss/Gain Calculation



Welfare Gain/Loss Calculation

Area of a Triangle = 1/2 (base x height)



1. **Determine whether this is a welfare gain or loss.**
2. **Calculate the amount in Euro. (note the quantity units) Show all work.**

Welfare Gain/Loss Calculation

Area of a Triangle = 1/2 (base x height)

Welfare Gain

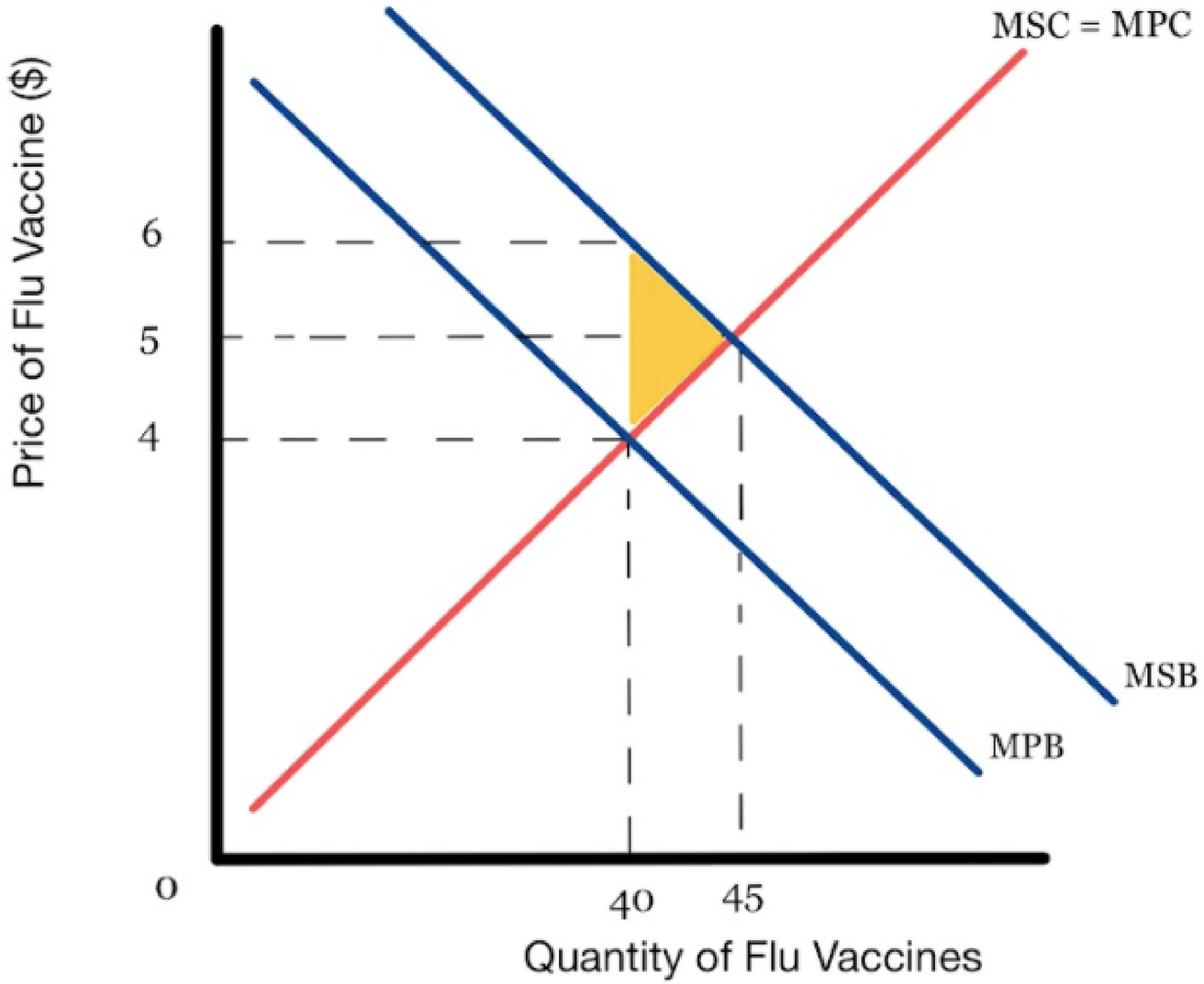
Potential Welfare Gain = 1/2(base*height)

1/2((6–4)*5Million)

1/2(2 * 5 Million)

1/2(10 Million)

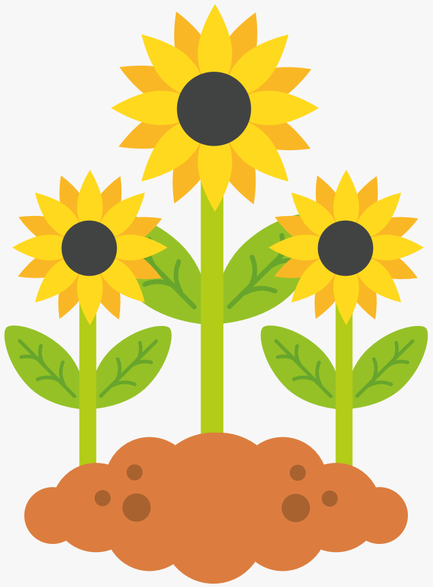
Potential Welfare Gain = EUR 5 Million



Common Pool Resources

Common Pool Resources

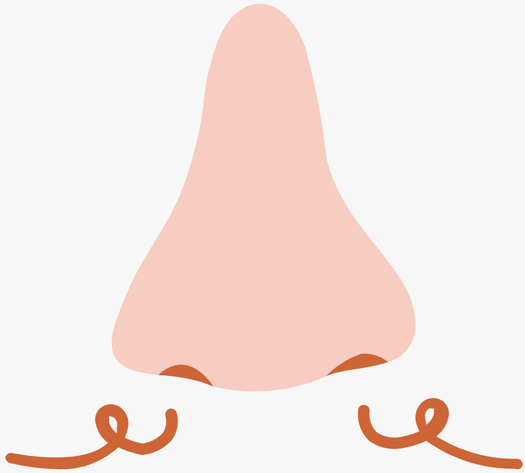
Also known as **Common Access Resources** or **Common Property Resources**



Definition

Resources that are rivalrous but non-excludable.

Examples: Fish, Clean Air, Lakes/Rivers, Forest, Fertile Soil



Rivalrous

A good when consumed, cannot be consumed by another person.

Example

When one uses fertile soil, there are fewer spots for others to farm.

Non-Excludable

A good that someone cannot be excluded or prevented from using.

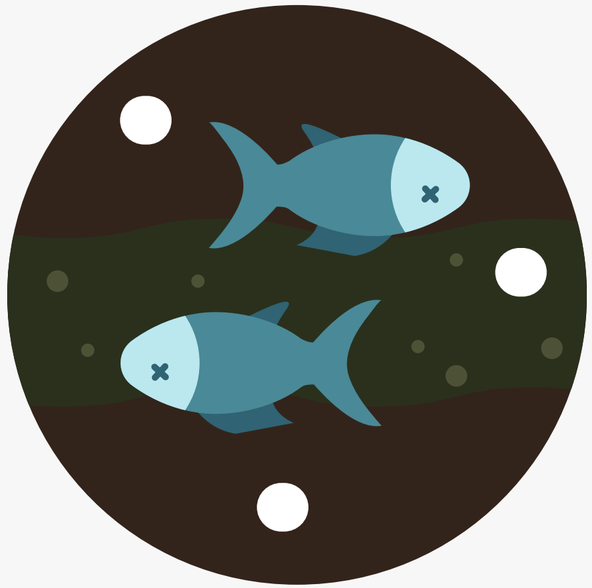
Example

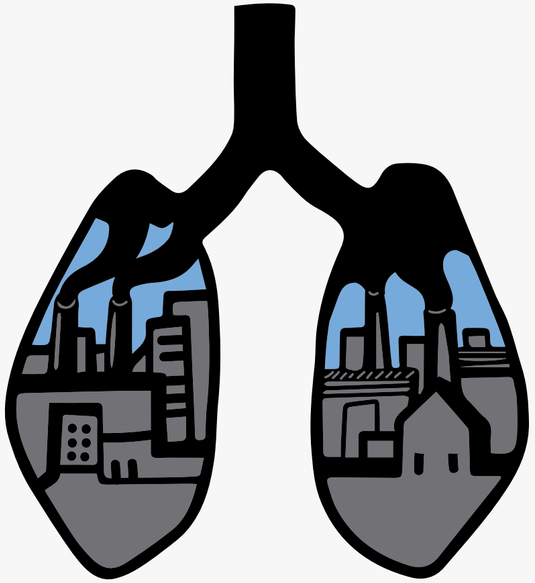
Goods that have no price and are available to use without payment. Clean Air

Common Pool Resources

Common Pool Resources are rivalrous and non-excludable.

It would be very difficult to charge a price for these items resulting in **overuse** and **over-consumption** which could lead to **severe environmental impacts** in the long run.





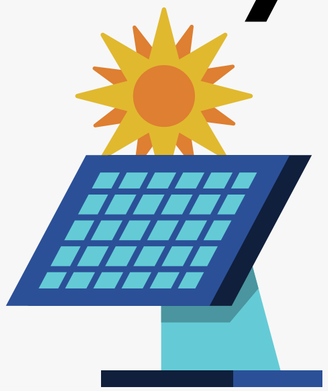
Sustainability

Issues surrounding Common Pool Resources lead to discussions about Sustainability.

Definition

the ability of the present generation to meet its needs without compromising the ability of future generations to meet their own needs.

Government Responses to Sustainability Threats



Sustainability is of great importance on a national and global level. These resources are not owned by one country, and therefore, international cooperation is key.

Some Examples

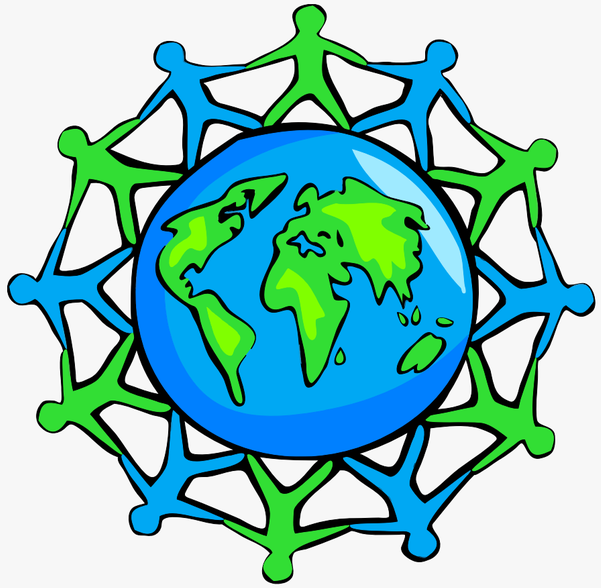
- **Carbon Emission Caps and Taxes**
- **Subsidies for Clean and Renewable Technologies (Clean Technology)**
- **Collective Self Governance**
  - Participation of industries in the measures planned and taken to resolve environmental sustainability issues. These industries are aware there is a problem and strive to fix them.
  - Examples: Cruise Lines are aware they have a negative impact on the environment. They chose to implement and market their sustainability.

International Cooperation

International Cooperation

Countries must cooperate to develop, set, and enforce policies designed to slow, halt, and reverse climate change.

Example: Paris Climate Accord



International Cooperation Challenges

Lack of Shared Responsibility

Not all countries produce large CO2 Emissions. The countries most affected are small islands with little/no CO2 footprint while those larger countries responsible for large emissions are slow to act.

Inequality of Resources

Not all countries have the ability to devote resources to combat climate change. Developing countries find it much more difficult to transition to clean technology and renewable energy

Political Disagreements

Some governments are more committed than others to reducing environmental impacts and there are different views about which methods are best.

Review

Diagrams and Rationale

- Concepts of MSB, MPB, MSC, MPC
- Over-production vs under-production
- Socially Optimal Quantity
- Negative Externalities of Production and Consumption
  - Draw Diagrams, explain welfare loss/gain, and government responses
- Positive Externalities of Production and Consumption
  - Draw Diagrams, explain welfare loss/gain, and government responses

Practice Question

Paper 1

M13/3/ECONO/SP1/ENG/TZ1/XX

(a) Analyse the consumption externalities which might arise from the provision of education and health care for the citizens of a country. *[10 marks]*

Check Answers

(a) Analyse the consumption externalities which might arise from the provision of education and health care for the citizens of a country. ***[10 marks]***

Answers **may** include:

- definition of positive externalities
- theory of positive externalities in relation to MSB>MSC and/or MSB>MPB, applied to health care and education
- diagrams to show the impact of positive externalities of consumption
- examples of positive externalities arising from education and health care in terms of better educated and healthier labour force leading to increased productivity.

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