

# ECO2011 Basic Microeconomics

Mankiw Chapter 11 (Public Goods and Common Resources)

2025

# Agenda

1. Motivation
2. The Different Kinds of Goods
3. Public Goods
4. Common Resources

# Motivation

- We consume many goods without paying:
  - Parks, national defense, clean air & water
  - When goods have no prices, the market forces that normally allocate resources are absent
  - The private market may fail to provide the socially efficient quantity of such goods
- ‘Governments can sometimes improve market outcomes’



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# The Different Kinds of Goods

- Excludability

- Property of a good whereby a person can be prevented from using it
- *Excludable*: any examples?
- *Not excludable*: any examples?

- Rivalry in consumption

- Property of a good whereby one person's use diminishes other people's use
- *Rival*: any examples?
- *Not rival*: any examples?

# The Different Kinds of Goods

- Private goods
  - Excludable & Rival in consumption (food)
- Public goods
  - Not excludable & Not rival in consumption (national defense)
- Common resources
  - Rival in consumption & Not excludable (fish in the ocean)
- Club goods
  - Excludable & Not rival in consumption (cable TV)

# The Different Kinds of Goods

		Rival?	
		Yes	No
		Private Goods	Club Goods
Excludable?	Yes	<ul style="list-style-type: none"><li>• Ice-cream cones</li><li>• Clothing</li><li>• Congested toll roads</li></ul>	<ul style="list-style-type: none"><li>• Fire protection</li><li>• Cable TV</li><li>• Uncongested toll roads</li></ul>
	No	<ul style="list-style-type: none"><li>• Fish in the ocean</li><li>• The environment</li><li>• Congested nontoll roads</li></ul>	<ul style="list-style-type: none"><li>• Tornado siren</li><li>• National defense</li><li>• Uncongested nontoll roads</li></ul>

# The Different Kinds of Goods

- This chapter focuses on public goods and common resources.
- For both, externalities arise because something of value has no price attached to it.
- So, private decisions about consumption and production can lead to an inefficient outcome.
- Public policy can potentially raise economic well-being.

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# Public Goods

- Public goods are difficult for private markets to provide because of the free-rider problem.
- Free rider: a person who receives the benefit of a good but avoids paying for it
  - If good is not excludable, people have incentive to be free riders, because firms cannot prevent non-payers from consuming the good.
- Result: The good is not produced, even if buyers collectively value the good higher than the cost of providing it.

# Public Goods

- If the benefit of a public good exceeds the cost of providing it, govt should provide the good and pay for it with a tax on people who benefit.
- Problem: Measuring the benefit is usually difficult.
- Cost-benefit analysis: a study that compares the costs and benefits of providing a public good
- Cost-benefit analyses are imprecise, so the efficient provision of public goods is more difficult than that of private goods.

# Some Important Public Goods

- National defense
- Knowledge created through basic research
- Fighting poverty

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# Common Resources

- Common resources are not excludable
  - Cannot prevent free riders from using
  - Little incentive for firms to provide
  - Role for government: seeing that they are provided
- Common resources: rival in consumption
  - Each person's use reduces others' ability to use
  - Role for government: ensuring they are not overused

# Case Study: Scarce resources, drought and the tragedy of the commons in California

- In 2015, California's Central Valley experienced a huge drought and farmers in that area are facing depleting groundwater reserves.
- Farmers in the region are drilling increasingly deeper wells to access groundwater. In the past, wells would reach about 200 feet deep, but now, due to the declining water levels, they are drilling as deep as 2,000 feet.
- Question: Why are famers drilling deeper and deeper in this case? Does it remind you of anything we discuss in class earlier?
- Sources: NPR Planet Money Summer School 4: Scarcity & Pistachios
- Link: <https://www.npr.org/transcripts/896308345?ft=nprml&f=896308345>

## More on this:

- George Hartmann, an attorney working with local farmers, proposes a voluntary solution. He suggests that if the farmers collectively agree to reduce their water usage by 25%, the government will refrain from imposing stricter regulations.
- Question: Do you think this kind of agreement will be sustainable or not?

# Tragedy of the Commons

- A parable that illustrates why common resources get used more than is socially desirable.
- Setting: a medieval town, where sheep graze on common land.
- As the population grows, the # of sheep grows.
- The amount of land is fixed, the grass begins to disappear from overgrazing.
- The private incentives (using the land for free) outweigh the social incentives (using it carefully).
- Result: People can no longer raise sheep.

# Tragedy of the Commons

- The tragedy is due to an externality: Allowing one's flock to graze on the common land reduces its quality for other families.
- People neglect this external cost, resulting in overuse of the land.

# Discussion Question

- What could the townspeople (or their government) have done to prevent the tragedy?
- Try to think of two or three options.



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# Policy Options to Prevent Overconsumption of Common Resources

- Regulate use of the resource
- Impose a corrective tax to internalize the externality
  - Example: hunting & fishing licenses, entrance fees for congested national parks
- Auction off permits allowing use of the resource
  - Example: spectrum auctions by the U.S. Federal Communications Commission
- If the resource is land, convert to a private good by dividing and selling parcels to individuals

# Examples of Common Resources

- Clean air and water
- Congested roads
- Fish, whales, and other wildlife

giraffe



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# Case Study “You’ve Got Spam!”

- Some firms use spam e-mails to advertise their products.
  - Spam is not excludable: firms cannot be prevented from spamming
  - Spam is rival: as more companies use spam, it becomes less effective.
- Thus, spam is a common resource.
  - Like most common resources, spam is overused – which is why we get so much of it!



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# Importance of Property Rights

- Public goods tend to be under-provided, while common resources tend to be over-consumed.
- These problems arise because property rights are not well-established:
  - Nobody owns the air, so no one can charge polluters. Result: too much pollution.
  - Nobody can charge people who benefit from national defense. Result: too little defense.
- The govt can potentially solve these problems with various policy options.

# Can You Answer the Following Questions?

- What are public goods? What are common resources?  
Give examples of each.
- Why do markets generally fail to provide the efficient amounts of these goods?
- How might the government improve market outcomes in the case of public goods or common resources?

# End