

11

Public Goods and Common Resources

PRINCIPLES OF  
MICROECONOMICS  
FOURTH CANADIAN EDITION

N.GREGORY MANKIW  
RONALD D.KNEEBONE  
KENNETH J.McKENZIE  
NICHOLAS ROWE

PowerPoint® Slides  
by Ron Cronovich  
Canadian adaptation by Marc Prud'Homme

© 2008 Nelson Education Ltd.

---

---

---

---

---

---

---

---

In this chapter, look for the answers to these 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?

© 2008 Nelson Education Ltd.

1

---

---

---

---

---


---

---

---

Introduction

- We consume many goods without paying: parks, national defense, clean air & water.
- When goods are free, the market forces that normally allocate resources are absent.
- The private market may fail to provide the socially efficient quantity of such goods.
- One of the Ten Principles from Chapter 1:  
*Governments can sometimes improve market outcomes.*



© 2008 Nelson Education Ltd.

2

---

---

---

---

---

---

---

---

### Important Characteristics of Goods

- A good is **excludable** if a person can be prevented from using it.
  - *excludable*: fish tacos, dial-up internet service
  - *not excludable*: FM radio signals, national defense
- A good is **rival in consumption** if one person's use of it diminishes others' use.
  - *rival*: fish tacos
  - *not rival*:  
An MP3 file of Coldplay's latest hit song

© 2008 Nelson Education Ltd.

3

---

---

---

---

---

---

---

---

### The Different Kinds of Goods

		Rival?	
		Yes	No
Excludable?	Yes	<b>Private Goods</b> <ul style="list-style-type: none"> <li>• Ice cream cones</li> <li>• Clothing</li> <li>• Congested toll roads</li> </ul>	<b>Natural Monopolies</b> <ul style="list-style-type: none"> <li>• Fire protection</li> <li>• Cable TV</li> <li>• Uncongested toll roads</li> </ul>
	No	<b>Common Resources</b> <ul style="list-style-type: none"> <li>• Fish in the ocean</li> <li>• Environment</li> <li>• Congested non-toll roads</li> </ul>	<b>Public Goods</b> <ul style="list-style-type: none"> <li>• Tornado siren</li> <li>• National defence</li> <li>• Uncongested non-toll roads</li> </ul>

© 2008 Nelson Education Ltd.

4

---

---

---

---

---

---

---

---

### ACTIVE LEARNING 1: Categorizing roads

- A road is which of the four kinds of goods?
- *Hint*: The answer depends on whether the road is congested or not, and whether it's a toll road or not. Consider the different cases.

5

---

---

---

---

---

---

---

---

### ACTIVE LEARNING 1: Answers

- Rival in consumption? Only if congested.
- Excludable? Only if a toll road.
- Four possibilities
  - uncongested non-toll road: public good
  - uncongested toll road: natural monopoly
  - congested non-toll road: common resource
  - congested toll road: private good

6

---

---

---

---

---

---

---

### The Different Kinds of Goods

- This chapter focuses on public goods and common resources (i.e., goods that are not excludable).
- 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.

© 2008 Nelson Education Ltd.

7

---

---

---

---

---

---

---

### 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.

© 2008 Nelson Education Ltd.

8

---

---

---

---

---

---

---

### Public Goods

- If the benefit of a public good exceeds the cost of providing it, gov't 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.

© 2008 Nelson Education Ltd.

9

---

---

---

---

---

---

---

### Some Important Public Goods

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

© 2008 Nelson Education Ltd.

10

---

---

---

---

---

---

---

### Common Resources

- Like public goods, common resources are not excludable.
  - cannot prevent free riders from using
  - little incentive for firms to provide
  - role for gov't: seeing that they are provided
- Additional problem with common resources: rival in consumption
  - each person's use reduces others' ability to use
  - role for gov't: ensuring they are not overused

© 2008 Nelson Education Ltd.

11

---

---

---

---

---

---

---

### The Tragedy of the Commons

- 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 the surrounding public land, called the Town Common.
- As the population grows so does the number of sheep.
- 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 and feed themselves.

© 2008 Nelson Education Ltd.

12

---

---

---

---

---

---

---

---

### The Tragedy of the Commons

- What causes the "tragedy"?
- The social and private incentives differ. No single family has an incentive to reduce the size of its flock because it represents only a small part of the problem.
- 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.

© 2008 Nelson Education Ltd.

13

---

---

---

---

---

---

---

---

### ACTIVE LEARNING 2: Policy options for common resources

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

14

---

---

---

---

---

---

---

---

## ACTIVE LEARNING 2: Answers

- Regulate the number of sheep per family
- "Internalize the externality" by
  - Taxing sheep
  - Auctioning off a limited number of sheep-grazing permits.
- Or ... .. divide the land, sell lots to individual families. The land becomes a "private good".

15

---

---

---

---

---

---

---

## Some Important Common Resources

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

© 2008 Nelson Education Ltd.

16

---

---

---

---

---

---

---

## Conclusion: The Importance of Property Rights

- In Chapters 11 and 12, we have seen that some goods are not adequately provided by the market.
- Public goods tend to be under-provided, while common resources tend to be over-consumed.
- Common theme: The market fails to allocate resources efficiently 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

© 2008 Nelson Education Ltd.

17

---

---

---

---

---

---

---

## Conclusion: The Importance of Property Rights

- When the absence of property rights cause a market failure, the gov't can potentially solve the problem.
  - Pollution permits
  - Restricted hunting seasons
  - National defense
- A well planned and implemented policy can improve the allocation of resources and raise economic well-being.

---

---

---

---

---

---

---

## CASE STUDY:

### "You've Got Spam!"

- Spam e-mail is a service some firms use 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!



*"Spam" email is named after everyone's favorite delicacy.*

---

---

---

---

---

---

---

## CHAPTER SUMMARY

- A good is excludable if someone can be prevented from using it. A good is rival in consumption if one person's use reduces others' ability to use the same unit of the good.
- Markets work best for private goods, which are excludable and rival in consumption. Markets do not work well for other types of goods.

---

---

---

---

---

---

---

## CHAPTER SUMMARY

- Public goods, such as national defense and fundamental knowledge, are neither excludable nor rival in consumption.
- Because people do not have to pay to use them, they have an incentive to free ride, and firms have no incentive to provide them.
- Therefore, the government provides public goods, using cost-benefit analysis to determine how much to provide.

---

---

---

---

---

---

---

## CHAPTER SUMMARY

- Common resources are rival in consumption but not excludable. Examples include common grazing land, clean air, and congested roads.
- People can use common resources without paying, so they tend to overuse them. Therefore, governments try to limit the use of common resources.

---

---

---

---

---

---

---

## End: Chapter 11

---

---

---

---

---

---

---