Common Pool Resource Game

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National APIS Workshop on ASWAp II

Lilongwe, Malawi

October 24-27, 2016

Introduction

- Simulation of a renewable common pool resource, such as a fishery
- Three equal-sized groups of fishermen, each group fishing an identical, but distinct fishery
- Equal opportunity to earn cash benefits
- What you earn will depend on
  – Your decisions, and
  – The decisions of other people in your group.
- Six rounds, each round corresponding to one "fishing season"

Ordering Tokens

- In each round, each participant must decide how many tokens to order

- One token equals, say, one ton of fish

- Net benefits = Gross benefits - total costs
  - Gross benefits: What benefits you receive from "selling" what you harvest
  - Total costs: What costs you incur in harvesting this quantity of fish

- Tokens ordered and benefits earned are anonymous and private to each participant (and to the monitors)

Gross Benefits from Ordering Tokens

- Participants earn gross benefits in accordance with the "Schedule of Benefits"

- Examples:
  - 6 tokens => _____
  - 12 tokens =>_____

- "Schedule of Benefits" is the same:
  - For every participant, and
  - For every round

Cost of Ordering Tokens

- Total token cost

  = No. of tokens x Average token cost

- Average token cost:

  – Increases as you and the other members of your group order more and more tokens.

  – Base token cost = $0.01

  – Each additional token costs an additional $0.01

- Average token cost

  = (Cost of the first token + Cost of the last token)

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Net Benefits from Ordering Tokens

- Net benefits

  = Gross benefits - Total token cost

  = Gross benefits - (No. of tokens ordered x Average token cost)

- Practice examples:

  - You order 6 tokens out of 30 for your group
  - You order 10 tokens out of 66 for your group
  - You order 2 tokens out of 18 for your group

Summary

- The game will consist of 6 rounds, each round being totally separate
- In each round:
  - You will write down and place your orders privately
  - Monitors will tabulate, for each group:
    - Number of tokens ordered
    - Average token cost
    - Total net benefits
  - You will calculate your own net benefits
- At the end of the sixth round, you will be paid the total net benefits that you earned.

Rules of the Game: Rounds 1 and 2

- Participants place their orders silently and privately
- No communication is allowed with any other participant, either in your own group, or in any other group

Round 1

	Tokens Ordered	Average Token Cost	Total Net Benefits
Group 1			
Group 2			
Group 3			

Round 2

	Tokens Ordered	Average Token Cost	Total Net Benefits
Group 1			
Group 2			
Group 3			

Rules of the Game: Rounds 3 and 4

- Participants are allowed to discuss their collective dilemma in plenary session before placing their individual token orders
- Potential discussion questions:
  - What is the nature of the benefit function?
  - What is the nature of the cost function?
  - Why is one group doing better than the other two?
  - Is there an optimal token order?
    - As a group?
    - As individual participants in a group?

Round 3

	Tokens Ordered	Average Token Cost	Total Net Benefits
Group 1			
Group 2			
Group 3			

Round 4

	Tokens Ordered	Average Token Cost	Total Net Benefits
Group 1			
Group 2			
Group 3			

Rules of the Game: Rounds 5 and 6

- Each group meets privately before each round:
  - In order to discuss how, collectively and cooperatively, they can increase their net benefits, both group and individual.
  - Groups are self-governing.
  - No threats are allowed.

- After each group has met, participants reassemble in plenary and continue to place their orders privately in plenary session.

Round 5

	Tokens Ordered	Average Token Cost	Total Net Benefits
Group 1			
Group 2			
Group 3			

Round 6

	Tokens Ordered	Average Token Cost	Total Net Benefits
Group 1			
Group 2			
Group 3			