

# Outline

EE475: Natural Resource Economics

## Other related field (2): The Study of the Commons

Friday 8th of May 2015

by  
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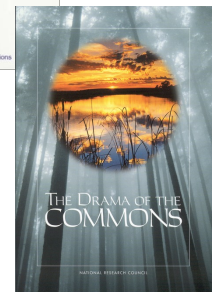
- Brief history of the field
- Some interesting frameworks and findings
  - Self-organizing governance
  - The Design principles and sustainability of community-based natural resource management
  - Understanding human behaviors
  - Institutional Analysis and Development Framework
  - Social-Ecological System framework
- Communities and Websites

## Brief history of the field

- Before 1989: Domination of “The tragedy of the Commons”
- Workshop in Political Theory and Policy Analysis (since 1973)
- 1989: Establishment of the International Association of the Study of Common Property (IASCP)
  - *The Association is devoted to understanding and improving institutions for the management of environmental resources that are (or could be) held or used collectively. The Association’s goals are to encourage the development and ex- change of knowledge and practical experience among diverse disciplines, areas, and resource types; and to promote the development and use of appropriate institutional designs.*

## Brief history of the field

- 1990: Publication of the book “Governing the Commons: The Evolution of Institutions for Collective Action”
- 2002: Publication of the book “The Drama of the Commons”



# Brief history of the field

- 2006: The association changed its name to the International Association for the Study of the Commons (IASC) - (cut out the 'P')
- *The Association is devoted to bringing together interdisciplinary researchers, practitioners, and policymakers for the purpose of fostering better understandings, improvements, and sustainable solutions for environmental, electronic, and any other type of shared resource that is a commons or a common-pool resource.*

# Brief history of the field

“... Elinor Ostrom has challenged the conventional wisdom that common property is poorly managed and should be either regulated by central authorities or privatized. Based on numerous studies of user-managed fish stocks, pastures, woods, lakes, and groundwater basins, Ostrom concludes that the outcomes are, more often than not, better than predicted by standard theories. She observes that resource users frequently develop sophisticated mechanisms for decision-making and rule enforcement to handle conflicts of interest, and she characterizes the rules that promote successful outcomes. ...”

[http://www.nobelprize.org/nobel\\_prizes/economic-sciences/laureates/2009/press.html](http://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/2009/press.html)

# Brief History of the field



*“for her analysis of economic governance, especially the commons”*

## Some interesting frameworks and findings

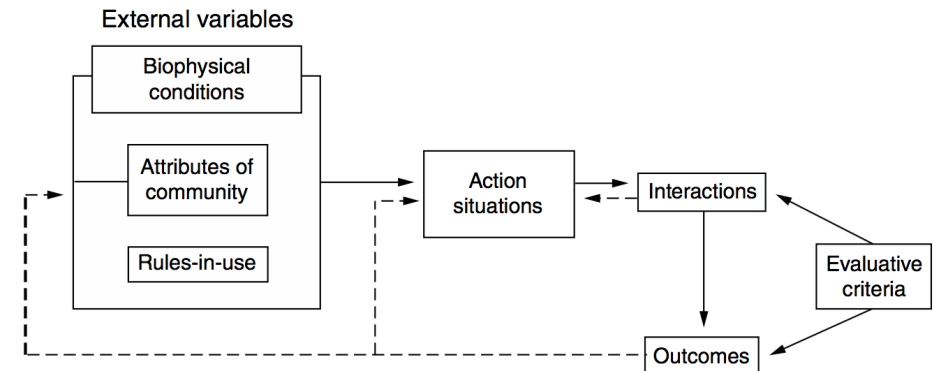
- Polycentric Governance
- Institutional Analysis and Development Framework (IAD framework)
- The Design Principles: Institutional characteristics of long-surviving resource institutions
- Lesson from experiments
- Other issues in the studies of the commons

# Polycentric governance

- Study on polycentric governance was the earlier work of Vincent and Elinor Ostrom, before the establishment of IASCP
- Polycentric Governance
  - connotes **many centers of decision making that are formally independent of each other**. Whether they actually function independently, or instead constitute an interdependent system of relations, is an empirical question in particular cases.
  - They can take each other into account in **competitive relationships**, enter into various **contractual and cooperative** undertakings or have recourse to central mechanisms to resolve conflicts.
  - They may be said to function as a “system”, having predictable patterns of behavior and producing certain outcomes.

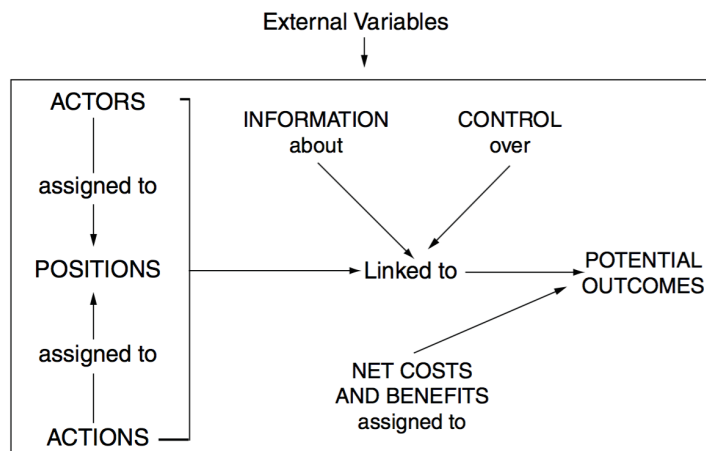
Ostrom 2010

# IAD framework



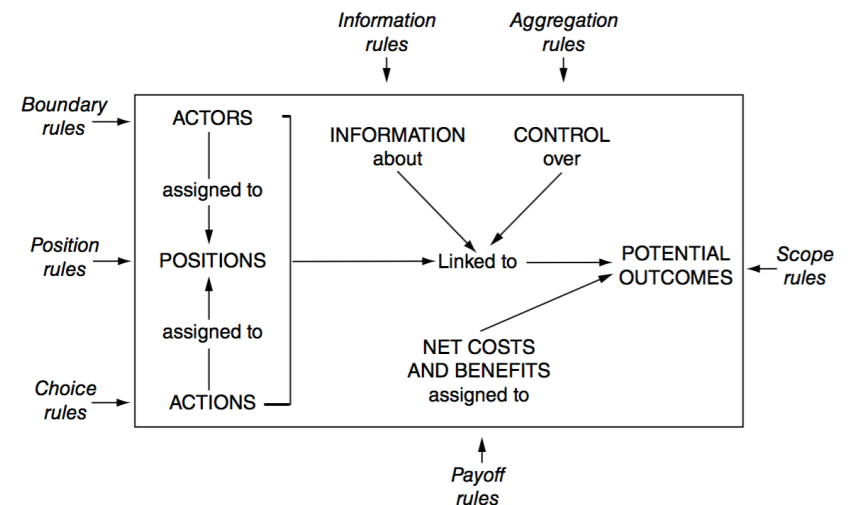
Ostrom 2010

# IAD framework



Ostrom 2010

# IAD framework



Ostrom 2010

# Seven types of rules

- (i) **Boundary rules** that specify how actors were to be chosen to enter or leave these positions;
- (ii) **Position rules** that specify a set of positions and how many actors hold each one;
- (iii) **Choice rules** that specify which actions are assigned to an actor in a position;
- (iv) **Information rules** that specify channels of communication among actors and what information must, may, or must not be shared;
- (v) **Scope rules** that specify the outcomes that could be affected;
- (vi) **Aggregation rules** (such as majority or unanimity rules) that specify how the decisions of actors at a node were to be mapped to intermediate or final outcomes; and
- (vii) **Payoff rules** that specify how benefits and costs were to be distributed to actors in positions (Crawford and E. Ostrom 2005).

Ostrom 2010

# The Design Principles

- 1A. *user Boundaries*: Clear and locally understood boundaries between legitimate users and nonusers are present.
- 1B. *Resource Boundaries*: Clear boundaries that separate a specific common-pool resource from a larger social-ecological system are present.
- 2A. *Congruence with Local Conditions*: Appropriation and provision rules are congruent with local social and environmental conditions.
- 2B. *Appropriation and Provision*: Appropriation rules are congruent with provision rules; the distribution of costs is proportional to the distribution of benefits.

Ostrom 2010

# The Design Principles

- 3. *Collective Choice Arrangements*: Most individuals affected by a resource regime are authorized to participate in making and modifying its rules.
- 4A. *Monitoring users*: Individuals who are accountable to or are the users monitor the appropriation and provision levels of the users.
- 4B. *Monitoring the Resource*: Individuals who are accountable to or are the users monitor the condition of the resource.
- 5. *Graduated sanctions*: Sanctions for rule violations start very low but become stronger if a user repeatedly violates a rule.

Ostrom 2010

# The Design Principles

- 66. *Conflict Resolution Mechanisms*: Rapid, low cost, local arenas exist for resolving conflicts among users or with officials.
- 7. *Minimal Recognition of Rights*: The rights of local users to make their own rules are recognized by the government.
- 8. *nested Enterprises*: When a common-pool resource is closely connected to a larger social-ecological system, governance activities are organized in multiple nested layers.

Ostrom 2010

# Some experiment findings

- In collective action situation, there are multiple types of players
  - Rational egoists
  - Conditional cooperators
  - Norm-using (willing punishers and rewarders)

Ostrom 2000

## Other topics in the studies of the commons

- Based on sectors of resources
  - Agriculture
  - Fisheries
  - Forestry
  - Global Commons
  - Grazing
  - Land Tenure
  - Urban Commons
  - Water Resource and Irrigation
  - Wildlife
  - New commons

# Some experiment findings

- A noteworthy finding
  - “Externally imposed rules tend to “crowd out” endogenous cooperative behavior.”
  - The greater cooperation that had occurred due to the exogenously created incentive-compatible mechanism appeared to be transient. As the authors put it (p. 180), the removal of the external mechanism “seemed to undermine subsequent cooperation and leave the group worse off than those in the control group who had played a regular ...prisoner's dilemma.”

Ostrom 2000

## Other topics in the studies of the commons

- Other topics
  - Institutional sustainability
  - Heterogeneity
  - Factors influencing cooperation
  - Privatization and commons management
  - Institutional interplay and cross-scale linkages
  - Complex system
  - Evolutionary theory

# Communities and Websites

- The International Association for the Study of the Commons (IASC) <http://www.iasc-commons.org>
- Digital Library of the Commons <http://dlc.dlib.indiana.edu/dlc/>
- International Journal of the Commons <http://www.thecommonsjournal.org/index.php/ijc>

# References

## Articles

- Ostrom, E. (1990). Governing the Commons. Cambridge University Press.
- Ostrom, E. (2000). Collective action and the evolution of social norms. The Journal of Economic Perspectives. <http://doi.org/10.2307/2646923>
- Ostrom, E. (2010). Beyond Markets and States: Polycentric Governance of Complex Economic Systems. American Economic Review, 100(3), 641–672. <http://doi.org/10.1257/aer.100.3.641>
- Ostrom, E., Dietz, T., Dolsak, N., Stern, P. C., Stonich, S., & Weber, E. U. (2005). The Drama of the Commons, 1–534.

## Websites

- [http://www.nobelprize.org/nobel\\_prizes/economic-sciences/laureates/2009/press.html](http://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/2009/press.html)
- <http://dlc.dlib.indiana.edu/dlc/>