## Framework, Theory, or Model

<table>
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<tr>
<th>a model</th>
<th>A theory</th>
<th>A framework</th>
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<td>A theory and model have specific relationships among variables to predict and explain phenomena of interests.</td>
<td>&quot;A framework provides the most general list of variables that should be used to analyze different types of phenomena of interest and represent an effort to identify the universal elements that any theory related to these phenomena would need to include.&quot; (p.270)</td>
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The tragedy of the commons, the prisoner's dilemma, the logic of collective action (a limited set of variables that lead to the failure of individuals to cooperate to provide a collective benefit)

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<th>game theory (Prisoner's dilemma), microeconomic theory, transaction cost theory, and public goods/common-pool resource. Assumptions about individual choices based on game theory, neoclassical economic theory – involve extreme assumptions such as unlimited computational capability and full maximization of net benefits. Bounded rationality – Decisions based on incomplete information and chose decisions through satisfaction rather than perfect information processing. Evaluative criteria – an exchange economy – (those benefiting should bear the burden of financing it)</th>
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The IAD generates the useful knowledge of the logic, design, and performance of institutional arrangements in a various settings at diverse scales

| Phenomena of interest of policy makers and scholars: how different governance systems enable individuals to solve collective action issues democratically. Universal elements: physical/material conditions, action arena, interactions, evaluative criteria, outcomes. |

The Common Pool Resource (CPR) theory shows particular relationships among variables in the IAD. The CPR allows understanding why individuals participate in collective action arrangements to formulate institutions to deal with CPR issues and provides principles that lead the success of those institutions. (Ostrom, 1990, xv).

## Scope and Level of analysis

a. What phenomenon (types of questions) is the focus of the approach? Action Arena (scope of analysis), explain actions and results based on actors' decisions when having a shared problem.
b. At what level of analysis does the approach operate (e.g., individual, organization, situation, system)? Multiple levels of analysis (p.285 green book) Operational situations, collective choice situations, constitutional situations, metaconstitutional situations

## Assumptions

Objective: to explain how people use institutional arrangements to resolve collective action issues and produce common benefits

a. What are the assumptions of the approach?

1) Polycentric Public Industries – reject two optional organizational forms (market and single government unit) Considering only the market and the single government cannot explain diverse institutional arrangements where individuals such as citizens, local public entrepreneurs, and public officials manage public goods and common-pool resources at multiple scales and inverse ways. Thus, the IAD takes into account "polycentric" that many centers of decision making function as a system. The complexity of institutional arrangements are not the same as chaos. The complexity can produce public services well whereas chaos do not.

2) Four types of goods – reject two types of goods (public and private goods) Public VS private by excludability and rivalry but rivalry is replaced with substractability that enables find common-pool resources and toll goods
3) Diversity of Human Situations – reject one type of individuals in game theory (rational individuals)
The IAD assumes individuals who are affected by a set of variables called external variables in the figure 2. Individuals of diverse institutional arrangements interact within markets, private firms, families, community organizations, legislatures, and government agencies.

![Figure 2. A Framework for Institutional Analysis](image)

**Source:** Adapted from E. Ostrom 2005: 15.

4) Public agencies’ roles are to come up with effective and efficient decisions to allocate resources responding to different preferences of individuals while refusing the top-down approach.

"Public agencies are viewed as means for allocating decision-making capabilities in order to provide public goods and services responsive to the preferences of individuals in different social contexts." (Ostrom, Cox, and Schlager, 2014, p.268)

5) Resource users can resolve collective action issues and utilize their own governing systems found in Nepal Irrigation system case studies (Ostrom, Cox, and Schlager, 2014, p.288). Self-governance exists to prevent common tragedies rather than government interventions p.149

c. What assumptions are made about individuals (motivations, cognitive abilities, learning, decision-making calculus)?

See navel speech p.659

Those individuals are understood differently depending on assumptions humans by the analyst presented in the actor in the IAD. The assumptions of human behavior are not limited to either rational individuals or bounded-rational individuals but those whose decisions depend on interactions within diverse institutional arrangements.

Action situations:

External variables affect individuals’ decisions

- Rule in use: Individuals are affected by those rules
- Physical and material conditions: “Some individuals will be able to grab considerably more of the subtractive services than others, leading to noneconomic uses of the flow and high levels of conflict among users” p.281 “These conditions affect the incentives of participants” p.282 “Resource systems are characterized by a diversity of other attributions that affect how rules combine with physical and material conditions to generate positive or negative incentives” p.282
- Attributes of community: Attributes of the community: cultures are important elements that structure individuals decisions and actions.

Causal Process

a. What is the causal process that describes or explains the phenomenon of the approach (think of the relations among the independent and dependent variables in a flow diagram)?

Explain how Institutional arrangements affect individuals' solving collective action problems.

b. To what extent is the causal process described clearly and explicitly?
c. What are the focal dependent and independent variables (if any)?
Dependent variables: The action situation (The development of the decision situation)
Independent variables: External variables
- Attributes of a community
  - the history of prior interactions,
  - internal homogeneity or heterogeneity of key attributes,
  - the knowledge and social capital of those who may participate or be affected by others
- Biophysical conditions: one of the four types of goods defined in figure one above
- rules-in-use: common understanding

Possible to see this way? Dependent variables: outcomes / independent variables: external variables, action area, interaction, evaluative criteria

d. To what extent are these dependent and independent variables conceptually defined and are they defined in such a way as to aid in consistent measurement?
Except for the dependent variable and one independent variable of the rules, the remaining independent variables' operationalization is subject to researcher.?
The dependent variable of the action situations (Elinor, Cox, and Schlager, 2014, p. 272)
The independent variable of the rule-in-use (Elinor, Cox, and Schlager, 2014, p. 279)

Revisions and Empirical Support

a. What revisions and adaptations have been made over time for the approach?
- The tragedy of the commons asserts that self-interest comes ahead of collective interest. (Garrett Hardin 1968)
- Australian fishers have avoided a tragedy of the commons through community norms, rules, and public enforcement (Schlager 2004, p.146)
- Vincent and Elinor Ostrom (1971) started developing a systematic way of analyzing institutional arrangements to understand how political science paradigms impacted the way of conceptualizing public administration and metropolitan organizations. In response to the efforts for this, the IAD was developed based on the following concepts (p.268).
  a. the model of the individual as a decision maker
  b. The world of events: the production and consumption of different types of good (four types of goods, public, private, toll, and common pool),
  c. Decision-making arrangement
  d. Evaluative criteria applied to outcomes

- The Workshop in Political Theory and Policy Analysis applied the framework to understand a large number of empirical studies of police service delivery in metropolitan areas.
- This led the publish of Public Goods and Public Choice (Vincent and Elinor Ostrom 1977) further developing the world of events that explain the production and consumption of different types of goods (public, private, toll, and common pool). This typology is used to the basis for the physical and material conditions in the IAD.

- The Three Worlds of Action: A Metatheoretical Synthesis of Institutional Approaches (Kiser and Ostrom 1982) developed the action situation by integrating diverse disciplines to explain incentives and deterrent for individual behavior at three levels – operational, collective choice, and constitutional choice.
Later, the IAD was further extended to include governance, labeled the Social-Ecological System (SES) Framework.

b. How much empirical support has there been for the approach?

The IAD has been supported largely by but not limited to the studies of common-pool resources. The IAD has been continuously developed because of the accumulated useful knowledge through the consistent well defined variables and data gathering. (p.289) the National Research Council (1986) established a research panel on common-pool resources studies. The Workshop in Political Theory and Policy Analysis produced a bibliography of common-pool resources governance at a local level.

As theoretical work, Rules, Games, and Common-Pool Resources (1994) introduced “the effect of communication and rule-violation sanctioning on the harvesting choices of individuals.” (p.286) Juan-Camilo Cardenas (2000) conducted field experiments that find individuals overharvest even at the presence of the imposed rules.

The crowding out of cooperative action has been found in field experimemnts (Volla 2008), (Lopez et al. 2011) and (Poteete, Janssen, and Ostrom 2010)

B. Meta-Analyses of Common-Pool Resource Cases in the mid-1980s at the Workshop

The IAD framework became the foundation for designing a coding manual that was used to record a consistent set of variables for each common-pool resource study especially in irrigation systems.

The International Forestry Resources and Institutions (IFRI) program focuses on the interactions among common-pool resource, institutional arrangements, and individuals though multidisciplinary approaches at a global level. This research initiative have encouraged studies of collective action at a local level.

c. How strong is the empirical support? –

“The IAD framework is well developed, stable, and embedded in ongoing research.” (p.298)

“The IAD generates the useful knowledge of the logic, design, and performance of institutional arrangements in a various settings at diverse scales” (p.270)

| Strategies for Influencing Change | a. What practical strategies or insights can be learned from the approach and/or its empirical applications for influencing the policy process? |