

REFLECTIONS ON THE APPLICATION OF THE INSTITUTIONAL ANALYSIS AND DEVELOPMENT (IAD) FRAMEWORK TO ANALYZE THE UBATUBA OPEN SCIENCE PLATFORM

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Summary:

- Elinor Ostrom's Institutional Analysis and Development (IAD) Framework demonstrated that a community can self-organize in order to use and manage sustainably a common pool resource in its favor, countering the thesis that individuals tend to develop opportunistic behaviors that result in overexploitation (and ruin) of common resources.
- Using the IAD framework to analyze the possibilities and limits of open science in the context of the municipality of Ubatuba (<https://www.google.com/maps/place/Ubatuba+-+State+of+S%C3%A3o+Paulo,+Brazil/@-23.3975304,-45.285581,10z/data=!3m1!4m5!3m4!1s0x94cd52b4963b4e1d:0x96a1961c15dce516!8m2!3d-23.4336713!4d-45.0838529>), North Coast of the State of São Paulo, Brazil helped us to characterize an action arena as well as the exogenous variables that affect it.
- However, we found that the delimitation of a common pool resource system in Ubatuba is more complex than the framework predicted for three reasons: First, the local conflict / issue is not restricted to the management of a single resource of common use as assumed in the IAD framework; second, the IAD framework operates at a different scale than the Ubatuba case, making delimitation of a common pool resource system challenging; finally, IAD's local-scale approach does not lead to considerations about broader sociopolitical and economic relations, analysis of power relations, conflicts and inequalities among actors with different expectations, which are fundamental to understanding the broader socio-political and economic scenario of Ubatuba.
- Through this project and testing the application of the IAD framework in the case of Ubatuba, we found that common pool resources are not defined by their intrinsic characteristics. They are the result of collective decisions and actions that promote or hamper practices that ensure their equitable and sustainable management, maintaining community ties and dealing with conflicts.

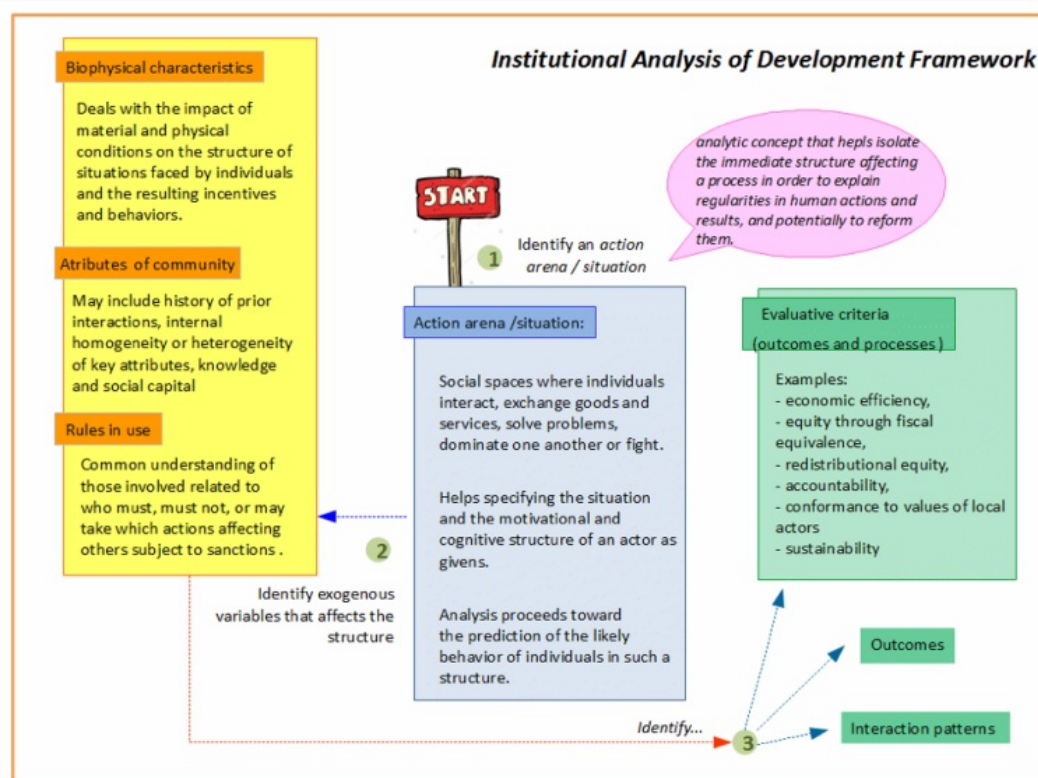
The Institutional Analysis and Development (<https://ocsdnet.org/about-ocsdnet/about-ocs/iad-framework/>)(IAD (<https://ocsdnet.org/about-ocsdnet/about-ocs/iad-framework/>)) (<https://ocsdnet.org/about-ocsdnet/about-ocs/iad-framework/>)Framework (<https://ocsdnet.org/about-ocsdnet/about-ocs/iad-framework/>) is a methodology developed by Elinor Ostrom with researchers from the Indiana School, based on empirical research on successful management of common pool resources (Ostrom, 2000). In 2009, Ostrom shared the Nobel Memorial Prize in Economic Sciences with Oliver E. Williamson for "her analysis of economic governance, especially the commons" (Wikipedia (https://en.wikipedia.org/wiki/Elinor_Ostrom)). These studies have demonstrated that a community can self-organize in order to use and manage sustainably a common pool resource in its favor. They countered the thesis that individuals tend to develop opportunistic behaviors that result in overexploitation (and ruin) of common resources, advocating limiting the access to them through their privatization or imposition of rules and sanctions by the State (Hardin, 1968; Dawes, 1973-1977; Olson, 1965).

Ostrom's institutionalist approach emphasizes rules-in-use – those practiced by actors – and "invisible" institutions – widely recognized sets of rules-in-use. This approach contributes to identify incentives, benefits, and costs of community self-organization processes for common use resource management, especially at times of institutional change. Its initial focus was on natural commons (Ostrom, 2000), then further expanding the analysis to knowledge commons (Ostrom, Hess, 2007). In this approach, resources are defined as a "common good" due to two characteristics: a high capacity of resource units subtraction and great difficulty in excluding free riders.

An important contribution of IAD methodology is that its meta-theoretical language recognizes a set of heterogeneous variables that can be combined and mobilized for the analysis of institutional arrangements from multidisciplinary perspectives. In addition, it highlights the importance of information and communication within the community as a way to improve collective understanding of the use of common resources, collectively elaborating norms on rights and duties in resource management and evaluating the cost-benefits of collectively agreed rules.

Utility of the IAD Framework for Ubatuba Case

Using the IAD framework to analyze the possibilities and limits of open science in the context of the municipality of Ubatuba (<https://www.google.com/maps/place/Ubatuba+-+State+of+S%C3%A3o+Paulo,+Brazil/@-23.3975304,-45.285581,10z/data=!3m1!4m5!3m4!1s0x94cd52b4963b4e1d:0x96a1961c15dce516!8m2!3d-23.4336713!4d-45.0838529>), North Coast of the State of São Paulo, Brazil – the focus of our action-research project on open science in development – helped us to characterize an action arena (see Figure 1 below), as well as the exogenous variables that affect it. It has been observed that, when analyzing an action situation, one must consider both natural and knowledge commons since the collective and sustainable management of a territory demands information and knowledge sharing as well as the co-production of knowledge between scientists and non-scientists. Also, the production of knowledge commons involves the social appropriation of the territory, as well as a common material base, composed of natural and artificial goods that support life in common.



(<https://i0.wp.com/ocsdnet.org/wp-content/uploads/2017/06/IAD.png?ssl=1>)

Complexities of Applying IAD to Ubatuba Case

On the other hand, the delimitation of a common pool resource system in Ubatuba is more complex than the framework predicted, since the local conflict / issue is not restricted to the management of a single resource of common use as assumed in the IAD framework, but refers to a medley of resources. It is also important to remember that IAD encompasses small-scale resource systems, usually involving communities with about 50 to 15,000 people who depend heavily on resources for their livelihoods. The Ubatuba case covers a population of about 80,000 inhabitants, in a heterogeneous composition with diverse interests and conflicts: indigenous communities, fishermen, caiçaras, quilombolas and a multitude of floating residents and seasonal tourists, etc. Finally, IAD's local-scale approach facilitates the analysis of "invisible institutions" that act locally in favor of or against common pool resources' permanence over time. But it does not lead to considerations about broader sociopolitical and economic relations, analysis of power relations, conflicts and inequalities among actors with different expectations (VIEIRA, 2014), elements that we consider fundamental to understanding the socio-political and economic scenario of Ubatuba.

In this sense, we emphasize that common pool resources are not defined by their intrinsic characteristics. They are the result of collective decisions and actions that promote or hamper practices that ensure their equitable and sustainable management, maintaining community ties and dealing with conflicts.

Featured image caption: Economic-Ecological Zoning of São Paulo Northern Coast (ZEE-LN) Draft Law Voting and Zoning Maps, 1 September 2016 (by Tami Albuquerque).

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