## Rigidity or poverty traps

Poverty and rigidity traps are systemic conformations that control the dynamics of the social-ecological systems (SES) and the evolution of the adaptive cycles. In both cases, they hinder or interfere with the care and management of SES.



Photo by: Hugo Inda

The poverty trap is a configuration which is characterized by a lack of key actors or components and a very low connectivity. In this configuration, the potential for change and adaptation is very limited. In contrast, rigidity traps take place in systems with high connectivity, which can improve the rapid dispersion of disturbances (such as a disease), or the absence of a diversity of perspectives in the analysis of reality and associated decision-making processes.

Poverty traps are caused by the lack of connections or absence of components or actors within a system. This hinders or prevents the flow of resources and information required for its functioning. The lack of energy, goods and even ideas leads to positive feedback that improves the persistence of the trap over time. For instance, poverty leads to overexploitation of ecosystems and weakens their capacity of resilience, which eventually decreases harvests and increases poverty. Poverty traps result in the lack of solutions to the problems and challenges and, in many cases, tend to deepen the structural causes. Material needs increase the pressure on ecosystems and prevent their recovery. If we add ignorance about their functioning and conservation, all the conditions typical of the vicious circle of poverty are created.

## Key References

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Walker, B.H., y Salt, D. (2006). Resilience Thinking: Sustaining Ecosystems and People in a Changing World. Washington, D.C.: Island Press. Rigidity traps in SES occur when there is a high degree of connectivity between all system components. This configuration facilitates the spread of shocks or disturbances and promotes the absence of a diversity of perspectives or points of view. In this context, the inability to incorporate new information or experience is recurrent. System responses are rigid, which difficults adaptation, while increasing the effects of disturbances. In this configuration, the system lacks resilience, is not receptive to innovation and has no capacity for anticipation.

For instance, a mature forest, an ecosystem, dominated by few species, is very vulnerable to fire. Rigidity traps also occur in the social sphere when cultural or religious contexts do not allow the incorporation of new information that enables changes. The COVID-19 crisis provides numerous examples of religious communities that, in order to respect their traditions, maintain behaviors that threaten their health security.

In the economy we can find countless examples. The globalized system of production promoted a change of the production model, from Fordism (assembly lines are located in the same place) to another model with dispersed components, according to economic advantages. The appearance of COVID-19 caused the unexpected and sudden lack of some components and that triggered the collapse of production in some industries, or the lack of some products that are only produced in a certain place.

There are no easy answers to these traps. In any case, they imply a departure from the command and control paradigm, a deepening of the adaptive cycles of SES and an understanding of the key causal mechanisms of positive or negative resilience (in terms of the persistence of the system and its performance in the field of the well-being of human societies). This requires openness, learning and a flexible institutional design.

## Additional suggested reading

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