Building a rural future in Valparaíso, Chile, via "Participatory Innovation": Methodical governance of complexity as a seed for post-neoliberal policy

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***Abstract* – This paper describes a participatory experience in methodically building a rural future at the regional scale, carried out in Chile. Guidance and methodology are provided by Ceres, a research and innovation centre. Real-world complexity is respected and regarded as an asset. The experience has led to making social complexity understandable and governable under values and principles that differ from the dominant, neoliberal ones.[1]**

INTRODUCTION

How does one democratically approach building a rural future, with all the relevant actors, in a policy-making context that is dominated by concepts and methods coming from the neoliberal (Garretón 2012) worldview? How does one deal, in practice, with the *high complexity* of real-world problems, which involve many interacting and conflicting actors, issues, cultures, and bodies of knowledge? How does one simultaneously reach consensus, effectiveness, and legitimacy? What action-oriented approach could a progressive government apply, at the local, regional, or national scale, to design and implement an alternative rural development policy? On what bases could a rural social movement design a set of workable proposals to be put forward in the political arena?

These and similar questions underlie the experience of building rural futures at the regional scale, described herein. A new, action-oriented approach, based on the epistemology of social systems thinking (Ackoff 1981) or complex thinking (Morin 1990), – the Participatory Innovation (PI) Model (Del Valle et al. 2010) – is applied here. The experience, already four years old, is leading to results that may be significant for post-neoliberal policy making. The initiative and guidance are being provided by Ceres, a research and innovation centre created in 2011 by the Regional Government of Valparaíso and the Catholic University of Valparaíso.

Our aim has been to design and implement a multi-dimensional innovation system in Valparaíso's agriculture and rural territories through *strong participation* – or co-creation – of all relevant actors (i.e., public, private, citizen, and research actors), explicitly focused on the region's sustainability. We are aware of the economic and cultural dominance of neoliberal policies and values in Chile, and we are committed to a dialogical style of work.

The paper presents and discusses three initial results: (a) the ten-dimensional, content-rich *action map*: a consensus vision of the system's future that makes its complexity understandable and governable; (b) the *innovations portfolio*, involving 111 public-interest initiatives (so far); and (c), the specific initiative to build a regional, multi-actor *governance for water resources*, which seeks common-good objectives in a national context of privatised water rights and growing water conflict.

METHODOLOGY

The PI Model is a theory-based approach to the governance of high-complexity systems, developed in Chile by the author from 1980 onwards. Its theory, methods, and tools have been validated through some 80 projects in many fields. It has led to significant policy impacts, such as saving 10,000 lives from traffic accidents or keeping Santiago's air clean for more than two decades. PI regards social complexity as wealth, and, rather than simplifying it, works with all dimensions of reality, by applying Ashby's (1956) Law of Requisite Variety. It has five components: (a) The *complexity-participation principle* and the concept of *strong participation*; (b) the *action mapping* logic; (c) ten operational principles to generate working conditions; (d) three participatory tools, based on natural language; and (e) the eight-step PI process.

The first step sets up a multi-actor Group of Conveners that ensures the process's legitimacy and selects the participants. The results that follow belong to the second, third, and fourth steps, and are now described along with the relevant PI tools.

RESULTS

1. The Regional Innovation System's "action map"

The *action map* is an action-oriented description of a high-complexity system, built through a one-day workshop of around 25 participants, representative of all types of relevant actors. No preparatory documents are used and the map emerges as a consensus from the participants´ interaction. It describes the system through *basic and specific lines of action*, which are agreed-upon names of the actions that do take place or could take place in the system. Figure 1 shows the ten basic lines, or *dimensions*, that emerged in this particular case.

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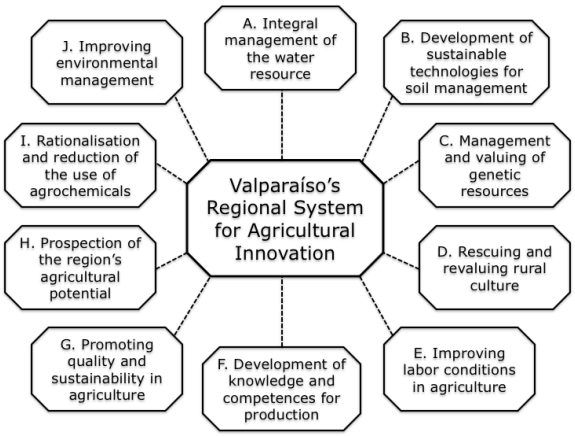

Figure 1. The dimensions of the Regional Innovation System that emerged from the "action mapping" step.

Table 1 shows (partially, due to space limitations) the specific lines of the water resources dimension. Two of these (A-5 and A-8) were considered by the participants to be *established*, i.e., having actors, activities, and impact; they are shown in upper-case letters. The remainder are *potential* lines of action.

Table 1. Specific lines of action in one dimension of Valparaíso's Regional Innovation System.

A. Integral management of the water resource	
A-1	Formulation of regional water policy
A-2	Improving the distribution of the water resource
A-3	Integrated basin management
A-4	Generating detailed knowledge about all relevant hydro variables (use, efficiency, distribution, quantification)
A-5	DEVELOPMENT OF RESERVOIR PROJECTS
A-6	Materialisation of reservoirs
A-7	Creating infiltration works: Injecting water to the underground in Winter
A-8	COATING OF CANALS

A-16	Revision of requirements for renters and small farmers to be eligible for hydro subsidies

The complete map details the whole action space in which the system could innovate, and its current level of development: 8 *established* lines out of 99.

2. The regional innovations portfolio

The action map offers guidance for identifying the specific innovations the system could undertake. This is done through a series of participatory workshops, which are carried out dimension by dimension with representative actors, and which also yield their proposals in consensus. Table 2 shows the number of innovations identified thus far.

Table 2. The current innovations portfolio: Progress in the participatory identification of regional innovations needed

System dimension	Number
A. Integral management of the water resource	12
B. Sustainable technologies for soil management	17
D. Rural culture and rural territory	19
E. Improvement of labour conditions	14
F-a. Developing knowledge in fruit production	17
F-b. Dev. knowledge in vegetable production	16
G. Reducing the use of agrochemicals	16
	111

3. The governance system for water resources

From the water dimension portfolio, the Group of Conveners prioritised the innovation, "building a regional governance system for water resources." A participatory workshop then prepared a conceptual design for this innovation, which includes a statement of the societal requirement to be met. Table 3 shows this, along with the actors who co-created it.

Table 3. Consensus statement of the societal requirement to be met by the Regional Water Governance System

Requirement: To have available an effective and coherent governance system, at both regional and river basin levels, with the capacity to: (a) protect the ecosystems upon which the resource depends; (b) know and prioritize needs, availabilities, qualities, and uses; (c) develop efficient systems for water accumulation, control, distribution, and use; (d) assure equitable participation in the benefits of water; and (e), raise the required awareness and commitment of the region's actors.
Regional actors who co-created it: (a) government: 5 at political level, 8 at technical level; (b) productive sector: 5 business-association chairmen, 9 other; (c) knowledge sector: 7 researchers; (d) NGOs: 2 professionals.

Discussion

Our conclusions follow, with reference to the basic postulates of neoliberalism (Garretón 2012).

1. There is a wide space for rural innovation that is invisible to neoliberal individualism, but valued and required by all the actors. It is considerably wider and richer than government priorities, focused for decades on facilitating fruit exports. Moreover, all specific innovations identified require multi-actor efforts; none of them could be undertaken purely as a private business venture.
2. Contrary to neoliberal market primacy, the actors' consensus called for building a water governance system with strong capacities in all domains.
3. As a potential extension to the societal scope, market and government decisions are not the only choices available for managing economic and social complexity. Methodical *strong participation* is also a choice – it works, and can lead to innovative, effective, and legitimate outcomes.
4. In synthesis, the PI Model can be considered a realistic seed for post-neoliberal policy making in today's *high-complexity* conditions.

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