

Institutions, government and extreme environmental events: comparison between actions taken to face drought in California (USA) and São Paulo (Brazil)

Theme: 2. *Natural resources, ecosystem services and environmental quality*

Subtheme: 2.2. Natural resources: management, use and conservation

Short Abstract

The year 2014 has exacerbated several problems relating to global warming phenomena. More sensitive to such changes, the hydrological cycle in some regions of the world has been affected more intensely. The abnormal period of drought and its intensity required from governments at different levels mitigation and prevention actions against these effects. This paper analyzes, under an institutional perspective, the roles of two state governments to face such crisis in California (USA) and Sao Paulo (Brazil). The comparison between the actions taken (and also those that were not) allows us to reflect on the degree of maturation of environmental policy in the wider policy of these different places.

Introduction

The world is facing in 2014 one of its most unusual years in climate. More severe winters in the northern hemisphere, more intense and dry summers in tropical countries with historical temperatures being achieved, shed light on climate change and governmental role to address such issues. In this sense, one of the most important and sensitive resource to these seasonality and extreme events is related to the water supply. Large urban areas have pushed more and more engineering to provide water solutions efficiently. However, the local and global ecological limits has been shown, in certain parts of the world, there are serious problems in dealing with the climate issue as predictable and regular pattern.

The aim of this article is to draw a comparison between two regions that are suffering greatly with this drought: the state of California, in the United States and the state of São Paulo, in Brazil. The economic importance of both states to national and global economy and severity of crisis presented in their territory gives us an opportunity to see how this crisis has been treated in an institutional perspective, focusing mainly on its environmental governance. We will also give some room to groundwater provision and management due to its great importance to California and its neglected use in São Paulo.

According to Hall et al (2014), the adaptation to hydrological variability involves three 'I's: institutions, infrastructure and information. Managing the risks of unpredictable events is deeply interconnected within those variables, with multiple roles each of them. Understanding linkages among them and the possible outcomes of a particular institutional arrangement is one requirement for a good governance. Vatn (2010) defines governance in setting goals, defining rules of how to achieve these goals and controlling outcomes.

A new policy instrument creates a new institutional arrangement, rising institutions and modifying old institutions. Institutions are rules governing what to do in a given situation (Ostrom, 1990). They act as filters guiding human action and act in a decisive way, shaping the way that nature and environment is perceived and handled (Young, 2002).

São Paulo: political issues affecting environmental crisis

The richest and most populous Brazilian state, São Paulo, is facing worst water crisis in its history. Responsible for 40% of GDP and home to 20 million people, the metropolitan region of São Paulo is supplied by three water producers systems: Cantareira, Alto-Tietê and Guarapiranga. The Cantareira System, the largest, consists of a set of four interconnected reservoirs and possessed a daily output of 33m³/s. All systems are now in lowest level since their construction, bringing up the possibility of collapse.

The state water management has several levels of governance, where watershed committee has a central role. However, in this case, SABESP (a public-private company) has the grants for such system, with government as its largest shareholder and the remaining offered on stock market. With this crisis, shed light to non-compliance of investment required to reduce the region's dependence of these sources at the same time that the company's profits increased significantly.

One aggravating issue during this crisis management was Brazil's election for governor and president, putting some veil on public management, which refused to acknowledge the gravity of crisis. Experts pointed the need for water rationing measures, which were summarily ignored by politicians fearing possible effects on the election. However, people suffered from a hidden rationing disguised as maintenance works by reducing water pressure. This crisis has raised debates on whether the private logic of maximizing shareholder value on such a vital resource is the best form of governance.

The main measures taken or announced included new reservoirs and transposition of other River to Cantareira System. Few institutional innovations were adopted and the emphasis remain on engineering issues not on informational or ecological restoration issues (there is huge need of restoration actions of riparian areas and land use change).

California

In contrast to surface water abundance in São Paulo, about 85% of the population in California depends directly on groundwater source. The regulation of groundwater extraction has long been among the weakest in the nation. Aquifer provides 30-40% of water supply in normal years but close to 60% in drought years.

California Central Valley consistently produce a hefty share of the nation's fruit and vegetable. Minimum of 25% of nation's food production comes from the Central Valley, which results in overexploitation of groundwater. The state of groundwater accounts are now seriously overdrawn. Over pumping in relatively shallow aquifers at Central Valley, municipal wells are running dry, forcing small towns to import water at excruciatingly high prices. Many groundwater surface streams has been depleted threatening the species that depend on them. With few exceptions, users are not required to report how much they pump, and public access to drilling records is highly restricted. Farmers are withdrawing groundwater faster than rain and snowmelt through soil and rock layers to recharge aquifers.

New law give local agencies the power to restrict groundwater pumping, shut down wells and impose fines and penalties on resistant landowners. However, the new law give local agencies five to seven years to develop those groundwater plans, and until 2040to implement them.

Brief conclusions

Comparing the actions taken by two states, we see different approach for the problem. We can argue that California put more emphasis on informational and institutional measures, taking an opportunity window to create more rules and trying to get more control on resource, mainly related to groundwater. In opposite way, Sao Paulo politicians focused more on infrastructure measures, treating the crisis as an engineering problem, nor ecological nor institutional problem. The delay in recognizing the seriousness of problem and political effervescent scenario during the elections, aggravated the arena for decision making.

References

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