

Can extractive cities become sustainable? Contribution for a policy making framework in Argentina, Brazil and Chile

Extractive landscapes are shaped by high levels of investments, incomes and revenues from mining, coal, oil and gas industries. These industries represent an important outcome for developing countries and their development can help reduce poverty. Also, they require a degree of urbanization to facilitate production and distribution. In this cities, any other sector of the economy lies under its influence and loose competitiveness. But these urban forms do not last forever. On the contrary, as they are dependent of non-renewal resources, the temporality of these cities is limited in terms of urban planning. Moreover, the diversity related to these urban forms reveals the existence of a gap between the development of this landscapes and the regulation of environmental impacts of these industries. The objective of this paper is to contribute on policy making framework and urban planning options when the core economy of this cities is no longer the extractive sector.

Starting with a comprehensive approach on urban planning, extractive cities are privileged areas of observation for researching purposes and designing public policies because they reveal how we deal with change on our built environment. International investments, national decisions, federal policies and urban governance can be observed as unique examples regarding the complexity of global and local sources interacting at the same time in these territories. The paper introduces alternative ways to guide the planning process attending to scales of time, closures and aspirational goals of urban policies by comparing different cities: Añelo in Argentina, Chuquicamata in Chile and Serra do Navio in Brazil. In the case of Argentina, this paper belongs to a larger research on extractive cities that I pursuit during ten years, before I became the responsible for urban planning in an oil company three years ago. In this opportunity, I look beyond regarding the discussion on *extractivism* in Latin America and by comparing with other well-known examples at a regional level where we have a vast data corpus.

This paper is organized in three parts. In the first part, I describe urban settings and the prospective challenges when resources are no longer the source of employment and living. I present the cases under study by a combination of different states of urban elements –land tenure, transportation and infrastructures- that configure different patterns of urbanity in these landscapes. On one extreme, a pattern of unreasonable sprawls that underlie on an architecture of trailers reveal a population that took roots and end up choosing temporal landscapes as permanent housing. On other extreme, solid and very well organized structures than are abandoned when mining industry move to another city and population is relocated.

In the second part, I focus on the limits of time and scales that can be taken into account in order to develop a better planning. Attending to the urban elements described above, I will analyze how closure or rebranding of these cities are as important as planning the development of them. Through these examples, I pose several questions regarding their future and I will argue that they illustrate different ways of dealing with urban change.

In fact, I will state that urban form can be explained by dichotomies as space-time, stability-change and permanent-provisional, rather than within isolate categories. I will argue that land-tenure requires special treatment regarding the expectations of migrant workers in order to decide if real estate should develop owner or rental housing. Services infrastructure can be temporal or replaceable, so they can demand more affordable costs incorporating new technologies and efficiency systems. Mobility and transportation are essential keys in order to set up the network of cities that can or might be connected on a metropolitan area that helps these cities to be re-branded, instead of closed.

Finally, in a certain way, in this paper I assume that planning is about administrating temporality so I will consider closure or rebranding of cities as two different options for urban governance. As Mazingo states change and temporality are beyond a fixed vision of landscape (1997). What should we do when time of extraction arrives to its end? As Felipe Vera and Rahul Mehrotra (2016) argue, we need to develop tools for thinking and intervening about non-permanent configurations as a legitimate category within the discourse of urbanism. As these architects have pointed out, ephemeral urban landscapes are growing in scale and challenging the city as a concept of permanence and stability. Moreover, can these cities be resilient? How can we link closure and our goals for developing countries based on sustainable and equitable policies? I will pose these questions regarding how can we develop knowledge that help us on policy making regarding centralization/decentralization, the diversification of the economy and public/private partnerships.