



The social vulnerability approach for social impact assessment

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ABSTRACT

The Social Impact Assessment (SIA) literature has highlighted the need to focus attention on the most vulnerable groups to improve the management of socio-environmental risk. However, methodological proposals to introduce vulnerability in SIAs are still incipient. The aim of this article is to present a proposal to analyze the role of social vulnerability in the production of risks generated by large infrastructure projects. Taking the theoretical-methodological advances made from the social vulnerability and natural disasters approach, and from the social vulnerability, development and poverty approaches, we have designed a Social Vulnerability Approach (SVA) which we aim at incorporating into the SIA of large infrastructure projects. To illustrate our methodological proposal, the case of the socio-environmental conflict generated by the HydroAysen Project (which entailed the construction of a set of hydroelectric dams on the Baker and Pascua rivers in the Chilean Patagonia region) has been selected. Our proposal allows us to identify elements of vulnerability throughout the whole project cycle and, therefore, windows for intervention in order to reduce social vulnerability as well as other kind of hazards that large infrastructure projects may generate on affected populations.

1. Introduction

Projects involving the construction of large dams have triggered an intense debate in recent years (Ansar et al., 2014; Moore et al., 2010). While supporters have emphasized their contributions to human development (Schnitter, 2000), detractors have highlighted their social and environmental costs, which in many cases have been considered unacceptable (Fearnside, 2016; World Commission on Dams, 2000). The Social Impact Assessment (SIA) has been the main instrument used by environmental sociology to analyze social impacts caused by this kind of projects. SIA is defined as the process of managing social problems derived from development (Esteves et al., 2012) and has generated an extensive bibliography,¹ which is proof of the intrinsic complexity of these large infrastructure projects (LIPs from now on) and their implications at the socioeconomic (Strzepek et al., 2008), geopolitical (Jackson and Sleight, 2000), cultural (Hanna et al., 2016) and biophysical (Kibler and Tullos, 2013) levels, as well as on the physical (Lerer and Scudder, 1999) and psychological health (Scudder, 2012) of affected populations (Adams, 2000).

Although risks are apparently “democratic” at the territorial level (Beck, 2006), that is, they are equally distributed across rich regions as well as poor ones, in both developed and developing countries

(Vallejos-Romero, 2012), specialized research on the impacts of these large projects also points out how they are distributed unevenly among the affected human groups (Tilt et al., 2009). This uneven distribution is conditioned by several factors: a) the degree of exposure to the impact, understood as the location and proximity of the individual to a given risk (Centro Internacional para la Investigación del Fenómeno del Niño, 2017); b) the level of social vulnerability, which has been defined as the characteristics and circumstances of a population, system or asset that make it susceptible to the harmful impacts of a potential risk (UNISDR, 2009). Researchers highlight the need to place the focus on the most vulnerable social groups (Burdge et al., 2003; Esteves and Vanclay, 2009), since it is understood that these are more likely to be affected by negative impacts and, at the same time, those impacts would deepen the processes of production and reproduction of their social vulnerability.

As with other types of LIPs such as the construction of large mines and extensive transport infrastructure, the risks caused by the construction of large dams are, therefore, partially shaped and conditioned by the social vulnerability of affected populations. Thus, the potential socio-environmental risk in the construction of a dam of similar technical characteristics will be quite different in a region whose population has high levels of social capital, a solid welfare state, fair levels of socio-

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¹ For a systematic review of the literature on EIS and dams see Kirchner et al. (2016).

economic equality, an institutional apparatus ensuring a correct application of the Environmental Impact Assessment (EIA) and SIA and laws that protect the rights of minorities, than in a region with a socio-economic context marked by inequality, institutional weakness and social exclusion of certain minorities. In other words, in a region where the degree of social vulnerability of certain groups is very high, the socio-environmental risks caused by the same kind of dam construction project will be much greater and, in the same manner, the changes experienced by these groups as a consequence of the negative impacts of the dam can reinforce their level of social vulnerability.

Despite the relevance of social vulnerability in the production of social risks caused by large dams, the literature specialized in this issue is scarce, focusing mainly on the physical hazard of flooding (Zahran et al., 2008). It is worth mentioning the works of McNally et al. (2009) and Givental and Meredith (2016). The former have introduced the concepts of vulnerability and resilience within the theoretical framework of sustainability to deepen the understanding of hydro-political vulnerability, while the latter have made a proposal for the assessment of Vietnam's water vulnerabilities through a qualitative analysis of the ecosystem interactions (globalization and urbanization, rural-urban migration, climate change, flood control, etc.) at the global, regional and local scale.

Until recently, the limited use of social vulnerability in studies on the impacts of large dams was also a shortcoming shared by the SIA literature as a whole. Esteves and Vanclay (2009) were the first to directly draw attention to the importance of this variable in the SIA of infrastructure projects. In their study, they bring forward the work of Moser (1998) and the Sustainable Livelihoods Framework (DFID, 1999), proposing that vulnerability and resilience should be included in the profiling phase in order to map out the starting situation of the affected population before intervention is undertaken. Ortiz et al. (2015) present a methodological proposal that allows for the self- and co-assessment of vulnerability by using Multi-Criteria Decision Analysis to identify the most vulnerable stakeholders.

In a more recent article, Smyth and Vanclay (2017) rely on several of the direct sources that have nurtured the development of social vulnerability analysis to build the so called Social Framework for Projects, which aims at improving the management of social problems derived from LIPs. Specifically, they refer, as a starting point, to Sen's (1985, 1987) approach which influenced the development of the Sustainable Livelihoods Approach (SLA) and the Asset Based Community Development (ABCD) (Kretzmann and McKnight, 1996), two theoretical approaches which offer tools for the identification of weaknesses (hindering) and strengths (contributing to) the achievement of adequate living standards and better coping with adverse situations within a given population.

This paper continues this line of research by proposing to incorporate the Social Vulnerability Approach (SVA) to SIA in the analysis of LIPs. To achieve this objective, we will be using, on the one hand, an adaptation of the Disaster Pressure and Release Model developed by Blaikie et al. (1994) for the study of vulnerability and natural disasters and, on the other hand, the inroads made by the studies on social vulnerability, development and poverty, specifically taking into account the frameworks and approaches based on capital or community assets (Bebbington, 1999; Chambers, 1987; Kaztman, 1999; Kretzmann and McKnight, 1996; Moser, 1998; Scoones, 1998).

2. Theory

2.1. The social vulnerability and natural disasters approach

There is an extensive literature on vulnerability to climate change (Ge et al., 2017) and to water disasters due to droughts (Iglesias et al., 2009) and floods (Cannon, 2000). In this line, the concept of vulnerability as elaborated by studies on natural disasters since the 1980s

(Adger, 2006; Birkmann and Wisner, 2006; Quarantelli (1998)) is fundamental. The theoretical, conceptual and methodological developments in this field of environmental risk are very valuable and must be incorporated into the analysis of social risk caused by LIPs. From this perspective, the concept of vulnerability has been used to claim the importance of the role of social facts in the study of phenomena with a non-social origin (Maskrey, 1993; Oliver-Smith, 1996).

Following the work of Blaikie et al. (1994), vulnerability is understood as “the characteristics of a person or group and their situation that influence their capacity to anticipate, cope with, resist and recover from the impact of a natural hazard (an extreme natural event or process)” (Blaikie et al., 1994: 11). This group of researchers understands the risk of suffering a natural disaster as the intersection between the set of social, economic and political factors characterizing a certain social group and the exposure of that group to a natural event. The interaction between a particular “hazard” and a particular “vulnerability” generates the conditions for a “disaster”, which can be catastrophic or chronic (Pelling, 2003). This approach distinguishes three components on the social side of the equation: deep causes, dynamic pressures and unsafe conditions; and a component on the non-social side: natural hazards. The root causes are the economic, demographic and political processes impinging upon the allocation and distribution of resources among different groups of people. Dynamic pressures translate more encompassing economic and political processes into particular local circumstances. Unsafe conditions are the specific ways in which vulnerability is expressed in time and space, such as those induced by the physical environment, the local economy or social relationships (Blaikie et al., 1994).

2.2. The social vulnerability, development and poverty approach

Besides the theoretical and methodological tools provided by the disciplines that study the relationship between vulnerability and natural disasters, our proposal also draws on studies that have addressed the relationship between vulnerability, development and poverty (Buchanan-Smith and Maxwell, 1994; Chambers, 1989; Longhurst, 1994). These works emphasize social vulnerability as a phenomenon that underlies the configuration of contemporary societies, which are increasingly characterized by a greater degree of socioeconomic insecurity and a lesser role of the State as protector and guarantor of social rights (Castel, 1995). This approach focuses on the capability of individuals and social groups to face the multiple risks generated by the social and natural environment (Chambers, 2006) as well as their ability to adapt to the materialization of these risks (ECLAC, 2002). Its origin goes back to the Capability Approach proposed by the economist Amartya Sen (1985, 1987). Sen understood development as the enhancing of the capability and freedom of people so that they are able to fully develop their means of life, with its ultimate goal akin to the fulfillment of the different dimensions of human rights. This approach exerted a notable influence on the United Nations Development Program, enabling a transition from a purely economic development approach based on the Gross Domestic Product to a multidimensional approach based on the Human Development Index.

Influenced by the Capabilities Approach, various other frameworks have been developed, all of them aiming at explaining the phenomenon of social vulnerability. Among these frameworks the following are worth mentioning: the SLA (Carney et al., 1999), which has the support of the British Department for International Development and whose origins go back to the Rural Livelihoods (Chambers and Conway, 1992; Scoones, 1998), the Asset Vulnerability Framework (Moser, 1998), the AVEO (Asset Vulnerability and Opportunity Structure) approach in the Latin American context (Kaztman, 1999) and the ABCD methodology for the sustainable development of populations (Kretzmann and McKnight, 1996).

These frameworks are based on a series of premises that strengthen

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