



Four conceptual issues to consider in integrating social and environmental factors in risk and impact assessments[☆]



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ABSTRACT

In the last twenty years, both the increase in academic production and the expansion of professional involvement in Environmental Impact Assessment (EIA) and Social Impact Assessment (SIA) have evidenced growing scientific and business interest in risk and impact analysis. However, this growth has not brought with it parallel progress in addressing the main shortcomings of EIA/SIA, i.e. insufficient integration of environmental and social factors into development project analyses and, in cases where the social aspects are considered, technical-methodological failings in their analysis and assessment. It is clear that these weaknesses carry with them substantial threats to the sustainability (social, environmental and economic) of projects which impact on the environment, and consequently to the local contexts where they are carried out and to the delicate balance of the global ecosystem. This paper argues that, in a sociological context of complexity and dynamism, four conceptual elements should underpin approaches to socio-environmental risk and impact assessment in development projects: a theoretical base in actor-network theory; an ethical grounding in values which are internationally recognized (though not always fulfilled in practice); a (new) epistemological-scientific base; and a methodological foundation in social participation.

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1. Introduction and objectives

In recent years the growth in academic production and professional application of Environmental Impact Assessment (EIA) and Social Impact Assessment (SIA) have indicated increasing interest in risk and impact analysis on the part of the scientific and business communities (Voyer et al., 2012; Smith et al., 2011; Rowan and Streater, 2011; Tajziehchi, 2011; Dreyer et al., 2010). However, this growth has not yet translated into comparable advances in the main areas of weakness detailed below (Esteves et al., 2012): i.e. deficiencies in the integration of environmental and social analysis of development projects, and, in those cases where the social aspect is taken into account, weaknesses in technical and methodological analysis and assessment. See Fig. 1

This paper examines the main reasons why these weaknesses remain. It argues that science, as a social institution, has entered a crisis of utility. In a context of social complexity, the classical mode of knowledge production (identified by Gibbons, 1994, as “Mode 1”), does not adequately address this. Also, the theoretical frameworks for explaining social reality need to address this complexity more effectively. Traditional theories of the “risk society” can be combined with more

holistic and dynamic explanations, for example Actor Network Theory (ANT). The latter is in our view the theoretical framework which can shed most light on the socio-environmental relationships created by large-scale development projects. From the axiological point of view, we argue for the need to take into account ethical and political diversity in the socio-environmental context of projects, consistent with the diversity of information sources that are relevant to their sustainability. From the methodological point of view, we advocate social participation as a transversal strategy in the planning and carrying out of SIA, and as a crucial prerequisite for sustainability (including economic sustainability). Lastly, we discuss to what extent these theoretical, epistemological, ethical-political and methodological elements can be considered the bases for a greater integration of SIA in EIA, and which approach, in practice, would most improve the practice of SIA in development projects.¹

2. Literature and history review on social risk and impact assessment

Risk and impact assessment of projects impacting on the environment, embracing the various dimensions (environmental, economic and social) that are acknowledged to be important for sustainable

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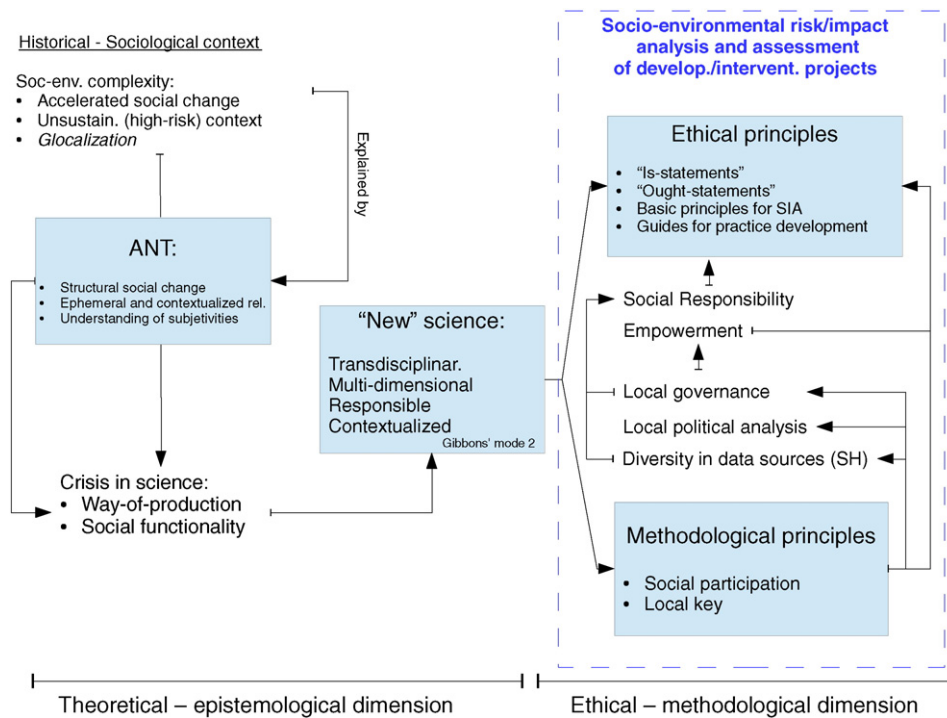


Fig. 1. Conceptual map: theoretical, epistemological, axiological and methodological aspects of socio-environmental integration in risk/impact studies of development projects. Source: created by the authors.

development, has been a focus of academic, scientific and political interest for several decades. The first environmental impact assessments were officially recognized at the beginning of the 70s, when the National Environmental Policy Act (NEPA) was passed in the United States. Since that time, and especially since the idea of sustainable development surfaced on the global agenda at the 1992 Rio Summit, the pace of the institutionalization of EIA and Economic Impact Assessment has quickened.

The most commonly cited general studies of EIA highlight the need for integrated assessment methods which would embrace the social dimension and take into account the distinctive features of affected communities (Bartlett, 1993; Baines and Morgan, 2009; Macklin and Hartog, 2004; Sloopweg et al., 2001; Mahmoudi et al., 2013). These social and cultural factors are acknowledged to be critical for the success of development projects in infrastructure, public policy, and so on (Du Pisani and Sandham, 2006; Torriti, 2011). But despite calling attention to the importance of territorial, socioeconomic, legal, cultural and public health issues, analysis in EIA does not normally go into sufficient depth to tackle adequately the complexity of the issues involved (Albergaria and Fidelis, 2006; Canelas et al., 2005), or only serves to fulfil the legal formalities for the approval and implementation of the project (Esteves et al., 2012).

The specific study of social risks and impacts emerged as a discipline within the framework of EIA. Catton and Dunlap (1978) focus their attention on the social dimension of the environmental crisis of the end of the 20th century. Finsterbusch's study (Finsterbusch and Wolf, 1977) can be considered the first theoretical and methodological systematization of SIA; while Freudenburg (Freudenburg, 1986) gives a thorough overview of SIA since the mid-1980s. Two common themes of these first studies, as in the case of the EIA, is the difficulty of integrating SIA in EIA, and the flaws of “social accounting” in development projects. The discipline also exercises its own self-criticism, highlighting the need for theory building and greater methodological clarity (Lockie, 2001). International regulatory development in EIA has boosted SIA, and since the 1980s this has become a prolific area of study (Finsterbusch and Wolf, 1981; Soderstrom, 1981; Burdge, 1994; Becker, 2001; Barrow, 1997), especially in Anglo-Saxon countries

and those with the tightest legislation on development projects. The International Association for Impact Assessment has developed a new guide for SIA, dealing with the key aspects of practice and debate in the field (Vanclay et al., 2015).

3. Social complexity, the dysfunctionality of traditional science, and development projects

The complexity of social reality is a recurrent theme in the social sciences. Since the 1990s it has been located at the core of the most important sociological theories, in the work of Giddens (1998); Beck et al. (1997) and Bauman (2001). “Theories of modernity and postmodernity” (Giddens, 2002; Bauman, 2004) are closely linked to “risk theory” (Beck and Ritter, 1992), since in dynamic and complex social contexts, uncertainty, and therefore real and perceived risks, soar. What most interests us in this study is that these factors share the global scene with social dynamism and the troubled and unsustainable relationship between society and the environment. The current world situation, thus shaped, is reflected on the local level and, reciprocally, the latter defines the process of “globalization”: in other words, the whole set of social, economic, political and cultural processes that inform globalization are embodied in local contexts, in such a way that these become fundamental to analysing and understanding it (Featherstone et al., 1995).

Also the traditional, natural environmental sciences have shown some concern with the complexity of their fields of theorization and application. From the theoretical point of view complexity has been addressed by reformulating concepts (“chaos theory,” “theories of nonlinearity”), and on the methodological level through promoting systems theory (Stewart, 2001). Briefly, the reaction of the traditional sciences to complexity has been to concentrate on creating models to explain real phenomena. This, however, is a simplistic response to complex contexts and realities (Casti and Karlqvist, 1996) which demand integrated and complex analysis and explanation. In social science, on the other hand, concern for the effects of complexity in its objects of study is intertwined with the very nature and evolution of the discipline. Some authors have argued that the development of the social sciences can be

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