



Developing adaptive responses to contextual changes for sustainable agricultural management: The role of social capital in the Arborea district (Sardinia, Italy)



Maria Laura Ruiu ^{a, *}, Giovanna Seddaiu ^b, Pier Paolo Roggero ^b

^a Northumbria University, 2 Ellison Pl, Newcastle Upon Tyne NE1 8ST, England

^b University of Sassari, Desertification Research Centre (NRD), Department of Agricultural Sciences, Viale Italia 39, Italy

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ABSTRACT

This article investigates the role played by social capital (in terms of bonding, bridging and linking social capital) in developing adaptive responses to contextual changes (environmental, social and economic) at the local scale. Three questions guided the research: can social capital produce resilience and collective action? Could environmental barriers be turned into opportunities? Can social capital contribute to long-term adaptation to change? Results obtained from a qualitative research conducted in the Arborea district (Sardinia, Italy) show how collective actions to adapt to contextual changes are both results and generators of robust social capital. On the one hand, social capital contributes towards increasing resilience by generating collective responses to contextual changes without compromising the structural functions of the system; on the other hand, the lack of a clear regulatory framework for facilitating the development of local collective adaptive responses, depresses foresight strategies.

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1. Introduction

The proposed paper starts from the hypothesis that small communities characterised by solid social capital are likely to adapt to contextual changes due to a systemic coordination and cooperation between local and external entities. In order to examine possible outcomes of social capital in terms of adaptive responses to change in agricultural systems, and consequently, in terms of economic growth and development of rural governance systems, this paper focuses on a rural case study represented by the Arborea district (Oristano, central Sardinia, Italy). Arborea constitutive features will be considered under the lens of three forms of social capital (bonding, bridging and linking social capital) as levers for producing collective actions, and consequently, adaptation strategies matched with economic development. Adaptive responses as related to climate, economic and social changes will be interpreted as an emergent property of social capital dynamics, leading ultimately into desirable transformations for responding to crisis.

According to Adger (2003) studying adaptive strategies to

change does not only mean to consider global environmental governance, but also the local level in which multiple actors act in order to achieve their goals (in terms of economic, well-being, health, and social benefits). This work aims to discuss the possibility that bonding, bridging (Putnam, 1995), and linking social capital (Leonardi, 1995; Pelling and High, 2005; Wolf et al., 2010) may contribute towards developing strategies of adaptation, by combining both governance systems and civil engagement. Here, we are adopting the definition of governance as those social and political processes that shape the management of farms, agro-food chains, and innovation system (Duru and Therond, 2015). As pointed out by Adger (2001), this means that a governance system should provide action at multiple scales from the bottom to higher levels. Thus, the role of public policy is to create the most favourable conditions to increase social engagement, and therefore participation in developing adaptation strategies to change. Following Manyena and Gordon (2015) social resilience derives from a combination of factors such as “capacity and resources, effective institutions and legitimacy”. All these elements are influenced by socio-political-economic processes that

operate simultaneously on different temporal and spatial scales. This means that an equilibrium between the society's expectations and State actions can be achieved only if spaces of dialogue are

* Corresponding author.

E-mail addresses: marialauraruiu@gmail.com, mlruiu@uniss.it (M.L. Ruiu), gseddaiu@uniss.it (G. Seddaiu), pproggero@uniss.it (P.P. Roggero).

provided. At the same time, some forms of civil engagement can spontaneously arise beyond the public policy thanks to a favourable socio-economic configuration. In this direction, as highlighted by Tolbert et al. (1998), when local economic organisations are embedded in the community they can play the same role of churches and associations, serving as forums for civil engagement. When this happens, new forms of adaptive strategies might be generated from the bottom (Koontz et al., 2015).

These considerations bring us to the following questions: Can social capital contribute towards producing both resilience and collective action? Could environmental barriers be turned into opportunities? Can social capital contribute to long-term adaptation to change?

The paper is organised as follows: the first paragraph refers to the definition of bonding, bridging and linking social capital; the second paragraph concerns the interconnections among institutions, social capital and economic growth; the third refers to the methodology used; the fourth presents the Arborea case study; the fifth refers to the environmental crisis as a catalyst for change in the Arborea district; the sixth discusses the results obtained. Finally, some conclusions will be drawn.

2. Social capital, resilience and adaptation outcomes

A large and sometimes contradictory number of definitions of social capital exist which may be summarised in terms of “bonding” (internal ties), “bridging” (external ties), and “linking” social capital (“institutional ties”) (Leonardi, 1995; Putnam, 1995; Wolf et al., 2010). Many authors applied the concept of social capital in theoretical construct and empirical research by focusing on the potential benefits of its application. Among a number of definitions, these benefits could be briefly described as: access to information, knowledge, and social control (see Bourdieu, 1986; Burt, 1987, 1992; 1997, 2002; Coleman, 1988; Granovetter, 1973; Lin and Dumin, 1986), solidarity and mutual support in particular in time of crisis at the social or ecological level (Adger, 2003; Adler and Kwon, 2002), engagement and civic sense (see Knack, 2002; Putnam, 1993), sharing of financial risk (Adger, 2003).

The social capital concept has been applied to contextual change-related issues, in particular referring to the capacity of public and private bodies to produce desirable resilience, and then adaptive responses, based on trust, reputation, and reciprocal exchange (Adger, 2003). Tompkins and Adger (2004) argue that both bonding and bridging networks produce greater resilience and ability to adapt. On the one hand, resilience is defined as the capacity of a system to absorb disturbance, buffer change, learn, innovate without changing overall system function (Adger et al., 2011; Folke et al., 2002; Maleksaeidi et al., 2015); on the other hand adaptive capacity concerns the ability of a system to adapt to these disturbances (Armitage, 2005). Hence, social capital might contribute towards generating resilience, which in turn produces adaptive responses to change. As argued by Carpenter et al. (2001) three properties characterise resilience: (i) the amount of change the system can sustain without being compromised in its structure and function; (ii) the degree to which the system is capable of self-organisation; and (iii) the degree to which the system is capable to learn and adapt. These three properties are also strongly connected to social capital. In fact, as underlined by Scheffer et al. (2000) social networks can play a decisive role in preventing or solving environmental issues if they represent repositories of social capital that can be mobilised. Social networks are supposed to facilitate informal exchange of information, materials and resources (Bernier and Meinen-Dick, 2014). In this sense, social capital might become a tool for resilience-building in social-ecological systems. In fact, some scholars refer to social capital as the star around which the

collective management of resources revolves (Pretty and Smith, 2004): it includes the set of common rules and sanctions, networks and relations of trust, reciprocity and exchanges (Pretty, 2003; Pretty and Ward, 2001). This means that social capital requires and facilitates “a social context with flexible and open institutions and multi-level governance systems” (Folke et al., 2002). The case of Khao Lak in Thailand (affected by the 2004 Indian Ocean tsunami) described by Calgaro and Lloyd (2008) demonstrates how the bonding social capital of the local community was able to produce adaptive responses to change despite a limited governmental capacity to cope with disasters. In fact, the formalisation of local groups in associations allowed the creation of a stronger network of socio-political and financial supports. Social capital has also been applied in studying individuals and community reactions during and after catastrophe. Literature shows how bonding social capital plays a primary role in supporting people affected from disasters, in terms of providing disaster preparation, warnings, supplies, recovery assistance (Aldrich and Meyer, 2015; Hawkins and Maurer, 2010; Heller et al., 2005; Norris et al., 2002). Moreover, bridging social capital might contribute towards providing support through institutional channels (e.g. charitable action from associations or church) (Aldrich and Meyer, 2015). If bonding and bridging social capital may be outcomes of both internal cohesion and connection with the outside, linking social capital is related to the ability of developing connections with institutions (such as e.g. local governments, agencies, banks, service organisations, higher educational institutions), which may facilitate groups both to achieve their goals and to access to power structures. As highlighted by Karn (2004), groups with higher degrees of social capital are characterised by a capacity to provide by themselves a safe, democratic and “healthy” environment through a mutual support system, which simultaneously promotes all forms of social capital (bridging, bonding and linking).

Some authors also demonstrated the role of social capital in producing positive effects on the environmental awareness of farmers (Getz, 2008; Munasib and Jeffrey, 2011). By contrast, Smith et al. (2012) findings show a negative relationship between bonding ties and individuals' willingness to learn about impacts of climate change at the local scale, and positive relationships between weak ties and individuals' willingness to seek information about impacts of climate change.

Only few scholars discussed the role of Governments in creating social capital (Bebbington and Perreault, 1999; Warner, 1999). Macias (2016) refers to trust in government, local and national, as the principal predictor of support for implementing new policies. However, the author underlines that the reinforcement of trust in government is directly connected to the promotion of a greater participation in local decision-making. Pelling et al. (2015) underline the role played by decision-making in determining mode for adaptation, and selecting objects for change. The decision-making process is seen as a result of the individual, technology, livelihoods, discourse, behaviour, the environment and institutions (see also O'Brien, 2015). The interactions among these elements contribute towards defining priorities and an agenda for climate change adaptation. In this direction, following Cox (1998), it is useful to distinguish two kinds of spaces: spaces of dependence and spaces of engagement. The firsts consist of those spaces upon which people and organisations depend for achieving their goals; the seconds are defined by those spaces in which people act for maintaining their advantages. In this, spaces of dependence might limit stakeholders' spaces of engagement due to the difficulty to deal with bureaucratic constraints. In the context here analysed, we contend that social capital plays a primary role, together with natural, economic, human and cultural capitals, in developing collective actions and adaptation outcomes. At the same time, if

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