



Analysis

Collective capability and collective agency for sustainability: A case study

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ABSTRACT

If the Capability Approach is to be a suitable framework for assessing sustainability, as is currently being discussed in Ecological Economics, it is crucial to grasp how the individual and collective levels are linked. The aim of this article is to investigate how individuals interact to create a collective actor. Thus, the article analyzes the process of setting up a grassroots organization that aims to make an active contribution to sustainability implementation in a given locality. The article specifically examines the process involved in the development of collective agency and collective capabilities and identifies the tensions between the individual and collective levels. The empirical analysis along with the theoretical discussion enables us to put the concepts of collective capability and agency in the context of Ecological Economics. Finally, this article opens up new areas of research to further our understanding of how the individual and collective levels can be linked with a view to sustainability implementation at the local scale.

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1. Introduction

In a recent paper, Griewald and Rauschmayer (2014) use the capability approach (CA) to analyze an environmental conflict between collective stakeholders. These authors conceptualize collective actors (organizations) as if they were individual stakeholders leaving aside the question of how individuals cooperate to create a collective organization. Finally, Griewald and Rauschmayer (2014) point out that the CA does not adequately take into account the articulation between the individual and collective levels (see Zimmermann, 2006 for further details) highlighting the fact that the individual level remains predominant among CA literature. However, some contributions (among others Evans, 2002; Ibrahim, 2006, 2013; Ballet et al., 2007; Dubois et al., 2008) have attempted to address this issue by introducing the notions of collective agency and collective capability. Nevertheless, there is no consensual definition of these concepts in the literature. Above all, there have been relatively few empirical studies on how collective agency and capabilities are generated by a group of individuals (see Kabeer, 2003; Ibrahim, 2006). If the CA is to become a

suitable framework for sustainability¹ assessment, as it is currently being discussed in Ecological Economics and Human Development fields² (see Ballet et al., 2011, 2013; Rauschmayer and Leßmann, 2011; Martins, 2011; Polishchuk and Rauschmayer, 2012; Scerri, 2012; Neumayer, 2012; Lessmann and Rauschmayer, 2013; Voget-Kleschin, 2013), understanding how individual and collective levels are linked is crucial. According to Rauschmayer et al. (2013), improving our understanding of and conceptualizing the interaction between the two levels are key issues in terms of a societal transition toward sustainability. Indeed, collective action can help establish social and environmental conversion factors and instrumental freedoms (e.g., access to social network, education, political decision making and ecological security, etc.), which are determining for sustainability implementation (Volkert, 2013). In addition, as demonstrated by Pelenc et al. (2013), collective action can alleviate the 'moral effort' that sustainability implementation requires (see Peeters et al., 2013; Lessmann and Rauschmayer, 2013), which cannot be assumed solely at the individual level.

¹ In this article, sustainability refers to sustainable human development, which is defined by Pelenc and Ballet (2015: 40) as: "The preservation, and when possible expansion, of the capabilities of the present generation – taking into account the intragenerational equitable distribution of these capabilities – which should occur without compromising the possibility of future generations to develop their own capabilities through an equitable transmission of freedom of choice across generations."

² See, particularly the special issue on 'Capability and Sustainability' of the Journal of Human Development and Capability, volume 14, 2013.

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Therefore, to complement the work of Griewald and Rauschmayer (2014), this article sets out to investigate how individuals interact to create a collective actor. Thus, the article analyzes the process involved in setting up a grassroots organization designed to make an active contribution to the transition toward sustainability at the local level. It specifically examines the process of developing collective agency and collective capabilities and identifies the tensions between the individual and collective levels. The conceptual and practical usefulness of the concepts of collective agency and capability can then be discussed in order to improve our understanding of the interactions between individual and collective levels in a sustainability perspective.

The article is structured as follows: Section 2 presents the theoretical background by showing how the CA differentiates between agency (process aspect of freedom) and capability (opportunity aspect of freedom). The pros and cons of collective agency and capability are discussed and the conclusion links them to collective action, empowerment and sustainability. Section 3 presents the context of the case study and methods for data collection. The results are presented in Section 4. The paper concludes with a discussion of the CA's potential to bring together the individual and collective levels (Section 5).

2. Discussing the concepts of capability and agency at the individual and collective levels

Capability and agency are two core concepts of Sen's approach to human well-being and development. Sen considers agency and capability to be two distinctive but equally important and interdependent aspects of human life (Crocker and Robeyns, 2010). This section sets out to clarify the differences between the two concepts and goes on to discuss the conceptualization of the collective dimension of agency and capability. The parameters that determine the agency of the individual and the group are identified. The section concludes by linking collective agency, collective capability, collective action, empowerment and sustainability.

2.1. Distinguishing Between Capability and Agency

Freedom is center-stage in Sen's conception of development. He defines development as 'a process of expanding the real freedom that people enjoy' (Sen, 1999: 3). He distinguishes between two aspects of freedom: *the opportunity aspect* (or well-being aspect) and *the process aspect*. On one hand, the opportunity aspect refers to people's ability to achieve the "beings" and "doings" that they have reason to value. On the other hand, the process aspect refers to people's capacity to change their own situation and, more broadly, to change the social environment that they live in, according to their goals and values (Sen, 1999; Alkire, 2008a; Crocker and Robeyns, 2010). In the CA, the concept of *capability* deals with the opportunity aspect of freedom and that of *agency* addresses the process aspect of freedom (Alkire and Deneulin, 2009). According to Alkire (2008a), human development should not only advance capabilities (opportunity freedoms) but also process freedom (agency). The normative goal of human development can be subsumed to the improvement of people's capabilities through the exercise of their agency. When people lack agency, i.e., when human development is blocked, empowerment is required to unlock the process aspect of freedom. So, the three concepts of capability, agency and empowerment are closely related. The following paragraphs explore the two concepts of agency and capability further in both their individual and collective dimensions.

2.1.1. Capability³

Capabilities correspond to the various functionings that a person can choose to adopt, according to his or her values in order to achieve the

expected lifestyles (Sen, 1999). To illustrate this, Polishchuk and Rauschmayer (2012: 106–107) stipulate that single freedoms, such as "being able to be well nourished", "being able to study" and "being able to express one's mind freely", etc., refer to capabilities and, when combined, they constitute the person's capability set. The capability set depends on the person's access to resources and on his/her conversion factors (i.e., personal characteristics and social and environmental conditions) (see Robeyns, 2005 for further information). It is important to note that, while capability is related to freedom of choice, achieved functionings are related to well-being achievements. Thus, the capability concept is linked to a notion of freedom (i.e., positive freedom), so it can encompass both potential and achieved choices (Robeyns, 2005; Sen, 1999).

2.1.2. Agency

Agency is the ability of a person to pursue goals and act in order to reach them in accordance with his/her values (Sen, 1999; Alkire and Deneulin, 2009). According to Sen (1999:19), the agent is "*someone who acts and brings about change*" and, therefore, agency is important "*in assessing what a person can do in line with his or her conception of the good*" (Sen, 1985: 206).⁴ Crocker and Robeyns (2010) explain that agency reflects the capacity of individuals and groups to shape their own destiny effectively and to help each other to be active participants in the process of change rather than being passive and docile recipients of instructions or assistance that is provided. In conclusion, through the concept of agency, Sen makes people the driving force of their own development. On the contrary, when people are unable to exert their agency, they may be alienated in their behavior, coerced or forced into a situation, oppressed or simply passive (Alkire and Deneulin, 2009; Alkire, 2008a).

It is important to note that Sen's concept of agency describes human motivation as often going beyond self-interest, even enlightened self-interest (Crocker and Robeyns, 2010). According to Crocker and Robeyns (2010: 76), Sen's concept of agency "*provides space for a conception of freedom and responsibility that breaks decisively with any egoism that claims that humans are no more than – and are bound to be – strict maximizers of a narrowly defined self-interest*". Thus, the CA extends motivational assumptions of human behavior by introducing the possibility of commitments to other-regarding goals. This extension of motivational assumptions is essential for grasping the full scope of the potential motives and actions required for acting sustainably (Volkert, 2013), especially when environmental psychology is taken into account (see Schöpke and Rauschmayer, 2014). In conclusion, the concept of agency does not simply refer to the capacity to act in order to achieve self-interested goals. It also refers to the capacity to achieve objectives that go beyond improving individual well-being and involve sympathy, generosity and commitment to others, such as taking part in community development, poverty reduction (Alkire and Deneulin, 2009), environmental protection (Sen, 2009) and local sustainable development (Pelenc et al., 2013).

However, exercising agency sometimes involves a reduction in well-being. For example, environmental or political activists risk going to jail when they protest against powerful companies, institutions or mega development projects (G20 or G8 counter summits, local protests against large infrastructure projects, etc., see Alkire and Deneulin, 2009: 38 for a detailed example). In other cases, people may starve to protest against injustice. In situations of this kind (starvation or imprisonment), the level of well-being is drastically reduced (as is the corresponding capability set) and people's lives may even be at risk. Some sustainable choices and behavior also involve a voluntary reduction of well-being (available choices) in order to limit the impact of one's lifestyle on the well-being of other people or that of future generations (see Pelenc et al., 2013). These examples illustrate the tension that exists between

³ As the capability approach has been previously discussed in this journal on several occasions, we do not present it here in detail. For further information on the CA and related concepts, see Robeyns (2005). For issues related to sustainability and the CA, see among others, the special issue of Journal of Human Development and Capability, volume 14, 2013.

⁴ Cited by Alkire and Deneulin, 2009, p. 37.

the “well-being assessment” oriented view of CA and the CA’s “agency oriented” view.

2.2. Collective Agency and Collective Capability

The importance of the collective dimension and assessing its contribution to quality of life are the focus of intense debate in the CA. As Zimmerman pointed out (2006), Sen’s concept of agency does not take social interactions into account sufficiently. As Evans (2002; 56) noted, Sen’s conception of the CA focuses primarily “on individuals and their relation to an overall social context, not on collectivities as the necessary link between the two”. As Rauschmayer et al. (2015) explain, CA does not account for how the interaction of individuals in groups generates capabilities that can enhance the fulfillment of each member in a way that could not have been achieved without the interaction. Lastly, according to Griewald and Rauschmayer (2014), there is no CA-based theory of society, institutions or organizations. The two following paragraphs present the pros and cons of collective agency and capability.

2.2.1. Individual Agency Versus Collective Agency

Rauschmayer et al. (2013) identify the concept of agency as a possible source of innovation in CA for examining the links between individual and collective levels. Indeed, as mentioned previously, the concept of agency includes the ability to pursue other-regarding goals. The capacity to include other-regarding goals depends on sympathy, generosity (Sen, 2009; Ibrahim, 2006) and responsibility (Ballet et al., 2007), which encourage people to make a commitment to others and behave pro-socially.⁵ Furthermore, when enhanced with concepts from environmental psychology, it offers a rich description of why humans engage in sustainable behavior (Schäpke and Rauschmayer, 2014). However, being able to pursue other-regarding goals rather than only self-interested goals does not wholly explain how collective agency can arise. According to Evans (2002), acts of collective agency are mainly determined by prevailing communal values and social structures. Indeed, it is not because each individual possesses freedoms and rights that he/she will automatically commit him/herself to working with others (Ballet et al., 2007). Instead, it is because, as a responsible person, his/her commitment is valued within a whole set of social interactions that give meaning to this responsibility (Ballet et al., 2007). In addition, Pahl-Wostl (2006) demonstrates that collective agency cannot be imposed; it has to emerge through a learning process. Here, the role of public discussion and social interactions is particularly important in terms of the emergence of shared values and commitments. Indeed, social interactions, such as group discussions, community meetings, participatory workshops or informal conversations provide the opportunity for people to share their representation of the “common good” and well-being with others. In contrast to individual agency, in which a person “individually” pursues his/her own perception of the “good”, in the case of collective agency an individual can pursue this perception of “good” collectively, by participating in a group with similar goals (Ibrahim, 2006). However, public discussion and social interactions do not automatically lead to the convergence of motivations, values and a shared sense of responsibility to others. Sometimes differences arise (divergence) between the individuals during the confrontation of their values, interest, motivations and sense of responsibility. In this case, further interactions may not be possible and conflicts may occur (Cleaver, 1999).

Fig. 1 below is an attempt to summarize the different steps that characterize the emergence of collective agency.⁶

⁵ According to Schäpke and Rauschmayer (2014: 36): “to take responsibility for, to bear the related individual costs of, and to act in coherence with the common good can be called pro-social behavior”.

⁶ This attempt to capture the crucial steps in constructing collective agency is only based on the CA literature. We acknowledge that it could be developed further with insights from other bodies of literature such as psycho-sociology or social movements. However, this goes beyond the scope and aim of this paper. It could be the subject for future research.

Fig. 1 shows that by building on the capacity of individuals’ agency to take into account other-regarding goals, public discussion and social interactions can lead to the convergence of individuals’ values, interests, motivations and sense of responsibility. This shared set of representations is a specific resource for individual members in terms of orienting and coordinating their actions. In addition, it facilitates communication by providing a more or less common set of shared ideas (Buijs et al., 2011). This convergence could help define the group’s common goals and objectives, which can then be pursued via collective action. On the contrary, if public discussions and interactions lead to divergent points of view, further interactions may not be possible.

In short, collective agency represents the finalized and autonomous capacity for the collective action of a specific group. Through the exercise of collective agency, a group will obtain collective capabilities (Panet and Duray-Soundron, 2008). If collective agency seems able to reflect the collective dimension of process-freedom, collective capability should reflect the collective dimension of opportunity-freedom.

2.2.2. Collective Capability Versus Individual Capability

While Sen (2009)⁷ now seems to recognize the existence of collective capabilities, he rejects the possibility of well-being assessment at the collective level. This is essentially due to the fact that it is difficult to measure the impact of collective capabilities on individual well-being. He mainly invokes the argument of ethical individualism.⁸ For some time, Sen has preferred to talk about socially-dependent capability, a concept that accounts for individual capabilities that depend on the social environment (Sen, 2002). However, it could be argued that the concept of conversion factors already reflects the “social dependence” of individual capabilities on the social context (Ibrahim, 2009). Moreover, the concept of socially-dependent capabilities does not make it possible to address capabilities that can only be achieved through group action (Panet and Duray-Soundron, 2008).⁹ According to Ballet et al. (2007) collective capabilities allow the interacting group of people to carry out actions and achieve states of being that would be impossible if individuals acted alone. Collective capabilities are specific to a particular group of individuals. They can only be obtained through participating in a group (Panet and Duray-Soundron, 2008).

Sen is not the only one to reject the concept of collective capability. Several other authors have criticized the concept, particularly Alkire (2008b) and, more recently, Volkert (2013). According to Ibrahim (2009), Alkire’s critique is based on three main arguments: (i) collective capabilities might not be valued by some individuals; (ii) they might not be equally distributed among the group and (iii) they can sometimes be harmful to others. Volkert’s arguments are similar to the second and third points argued by Alkire. The first point can be countered by specifying that collective capabilities should be generated through the free and voluntary (as opposed to forced) involvement of individuals in collective action (Ibrahim, 2009). Several case studies (Ibrahim, 2006, 2008; Kabeer, 2003) and the work presented in this paper demonstrate that different individuals actually value their involvement in a group for specific reasons. As far as the second point is concerned, Volkert agrees with Alkire, suggesting that even if groups are highly important for human development they do not provide a common collective capability for all the members. Ibrahim (2006, 2013) recognizes that collective capabilities provided by individual involvement in collective actions might not be shared equally between the different members of the group and that not all members are able to use these new capabilities equally effective. One could say that this is inherent to personal heterogeneity. However, Ibrahim (2006) argues that, in general, each group member enjoys a wider

⁷ For further details see Sen (2009: 244–245).

⁸ Ethical individualism argues for the individual to be the main unit of moral concern. Any evaluative exercise of human well-being should, therefore, focus on the direct and indirect effects of social affairs on individual welfare (Ibrahim, 2009).

⁹ For a complete review and critique of the socially-dependent capability and other similar concepts see Ibrahim (2009).

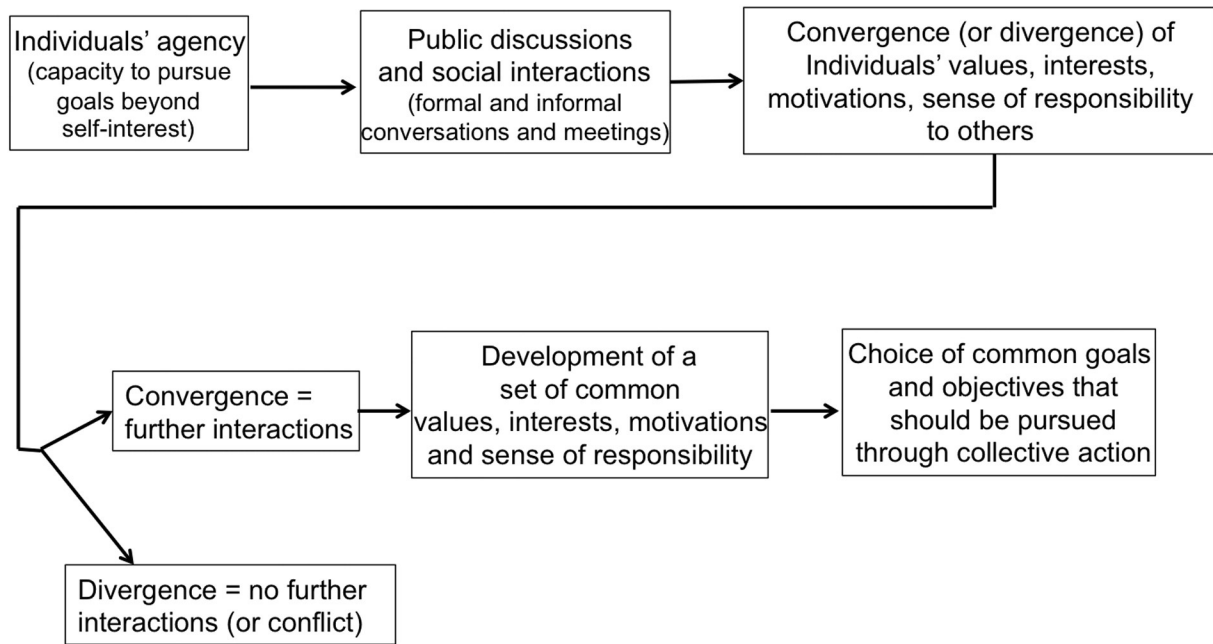


Fig. 1. Crucial steps in constructing collective agency.

range of “choices” as a result of his/her involvement in collective action. Lastly, according to Ibrahim (2009), the third point about the harmful effects of collective capabilities is one that has been directed against all forms of collective actions, especially when groups are violent, unequal and repressive. Once again, proponents of collective capability (Mahieu, 2008; Ibrahim, 2013) do not deny this aspect and acknowledge the fact that collective capabilities are not always “good”. However, any form of capability can be harmful or useful (Ibrahim, 2009). An individual can use his/her own individual capabilities to harm others (for example, by misusing one’s freedom to restrict or violate the freedoms of others) or future generations, as illustrated by the discussion on sustainable development (see Lessmann and Rauschmayer, 2013). Hence, it is clear that this criticism has nothing to do with the concept of collective capabilities, but to the type of capabilities that are generated and the aims of the group itself (Ibrahim, 2009).

Despite this ongoing debate, we can state that collective capabilities differ from individual capabilities by the process used to generate them i.e., free and voluntarily individual involvement in collective action. We do not seek to end the debate, but to present the current state of discussion and to recognize and stress the importance of furthering our understanding of how human capabilities are generated at the individual and collective levels and how to assess their impact (positively, negatively or neutral) on the well-being of individuals and the wider community (Ibrahim, 2013).

2.3. Linking the Individual and Collective Level in the CA

According to Evans, collective action is required to create the collectivities that will, in turn, make it possible to foster individual and collective freedoms by establishing the link between the individual and the social level: “Organized collectivities are fundamental to people’s capabilities to choose the lives they have reason to value. They provide an arena for formulating shared values and preferences, and instruments for pursuing them, even in the face of powerful opposition” (Evans, 2002: 56). However, Panet and Duray-Soundron (2008) note that although collective action can enhance individual freedoms, it can also restrict them to a certain extent. Indeed, they explain that participating in a group represents a new social embeddedness (for the individuals who participate in a group), which can act as a source of new freedoms but also as a source

of constraints (obligations). Finally, Comeau (2010: 3) defines collective action as “a situation where the interests of several social actors converge, thus leading to a voluntary engagement in a shared project in favor of a chosen cause”. This definition is close to that of agency. Comeau (2010) stresses that two specific dimensions underpin environmental collective actions: a sense of belonging to a community or place (for example, a territorial identity and feeling rooted in a place, etc.) and the existence of formal and informal associations.

Before going any further, it is important to identify where the definitions of collective agency, collective capability and collective action overlap so that the concepts are quite clear. In our framework, collective agency encompasses the capacity of the group to define common goals and the freedom to act to reach the chosen goals. The notion of collective action is restricted to the effective actions of the group. This means that the notion of collective agency is wider than that of collective action. The notion of collective capability refers to the real opportunities available to a group of interacting people to achieve a set of functionings that is defined collectively as valuable. This set of functionings should be consistent with the goal set through the process of collective agency. Fig. 2 summarizes our proposal to link individual and collective agency and capability to reflect both aspects of freedom (opportunity and process aspects).

Primarily, Fig. 2 illustrates the fact that agency and capability are two faces of the same coin i.e., freedom. More precisely this diagram shows that building collective agency requires both an “intangible” and material basis. The intangible basis is constructed through a process of interaction between individual agencies, which is described in Fig. 1. The outcome of this process is the definition of a common goal and a set of shared representations. It is then possible for the group to coordinate the pooling of certain elements of individual capabilities, such as resources (time, money, goods, services, etc.) and conversion factors (personal skills, networks, etc.). This pooling results in a common set that represents the “material” basis for collective agency. Once the collective agency of the group is built up, the group is granted with its first set of collective capabilities. By undertaking collective action the group will achieve these collective capabilities. The result of collective action corresponds to the set of achieved functionings. The figure also shows dotted feedback arrows that go from collective action to collective agency and individual agency. Indeed, we can put forward the hypothesis that

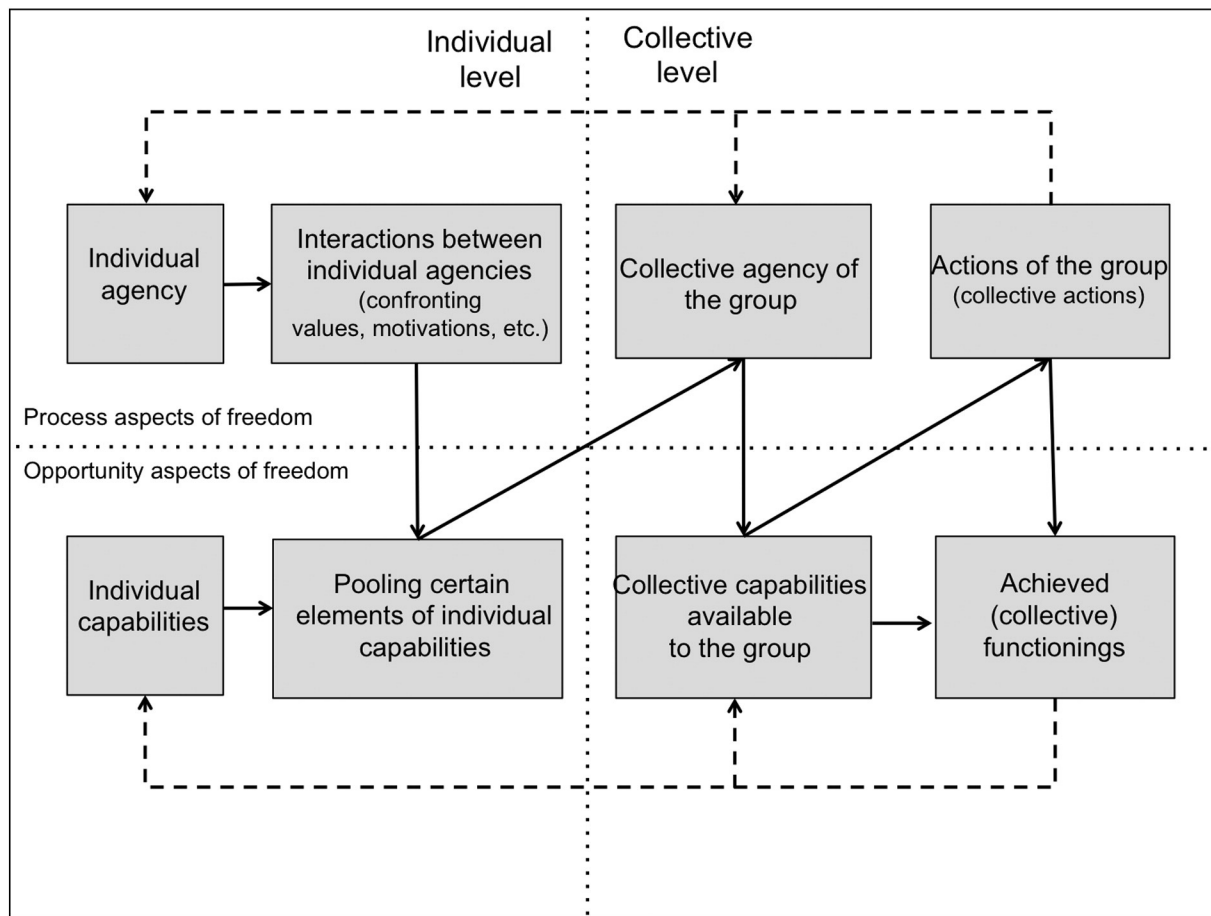


Fig. 2. Conceptualizing interactions between the individual and collective levels in the CA.

depending on the result of collective action (failure or success), there will be a positive or negative impact on the collective agency and to a certain extent on the agency of the individual members. The same hypothesis can be applied to the opportunity aspect of freedom (bottom of the figure). Thus, the framework is dynamic. These aspects will be discussed in Section 5.1.

The following paragraph concludes this conceptual section by exploring the parameters that condition individual and collective agency.

2.4. Agency, Empowerment and Sustainable Behavior

In the field of human development, agency is closely related to empowerment. According to Ibrahim and Alkire (2007), empowerment can be defined as the improvement of agency. This definition encompasses the institutional environment that offers people the opportunity to exercise their agency successfully (Ibrahim and Alkire, 2007). According to Drydyk (2008), people are durably empowered¹⁰ when they exercise enhanced decision-making and can influence strategic life-choices and overcome barriers to agency and well-being freedom. When people lack agency, it is because the process aspect of freedom is blocked. It is, thus, important to identify which parameters agency depends on.

The Table 1 below presents the parameters that condition people's agency. The parameters were identified after a review of the relevant literature.

¹⁰ There is also intense debate on the possible links and conflict between individual and collective empowerment. However, this paper does not discuss the issue (for further information, see Hyung Hur, 2006).

In general, in the literature on CA, capabilities and agency rely on the agent's resources (both material and non-material goods and services, human capital, etc.), and on his/her internal conversion factors (i.e., the agent's own characteristics)¹¹ and external conversion factors (i.e., the context within which the agent operates). We also decided to stress the importance of social capital because it is required for reciprocity and trust. In addition, it encourages cooperation between individuals, limits opportunistic strategies and, therefore, contributes directly to the development of collective agency (Panet and Duray-Soundron, 2008). As we have seen, values, motivations and responsibility play a crucial role in shaping the agency of individuals. Rauschmayer et al. (2011a) highlight the crucial roles of individuals' values and strategies with regard to sustainability issues. They explain that values provide direction in our life and give it meaning. Caring for oneself and for others (present and future generations) is the most basic motivation for adopting sustainable development as a value (Rauschmayer et al., 2011a). Indeed, according to Lessmann and Rauschmayer (2013), adopting sustainable behavior implies taking into consideration other people's needs (future generations or people who live far away) in decision-making. Consequently, they stress the importance of paying attention to the impacts of our individual and collective behaviors on the material and social bases of other people's lives. Regarding this last point, Ballet et al. (2007) and Pelenc et al. (2013) highlight the importance of ex-ante

¹¹ We refer to "personal conversion factors" when analyzing individual agency and of "organizational conversion factors", adopting the term introduced by Griewald and Rauschmayer (2014), when analyzing the agency of a collective actor.

Table 1

Proposed list of parameters that determine the agency of an individual or collective agent.

Parameter	Example	References
Resources (material and non-material goods and services)	–All kinds of goods and services that are of interest to people, e.g., commodities, income, tools, manufactured and financial capital, loans and time –Human capital, personal experience, know-how, etc. –Social capital.	Sen (1999), Robeyns (2005) and Bonvin and Farvaque (2008). Lehtonen (2004) and Ballet et al. (2005).
Internal conversion factors to the agent under consideration (individual or collective)	–Health and psychological conditions, personal skills, gender, disability, etc. –Organizational skills (for collective actors).	Sen (1999), Robeyns (2005), Dubois and Trani (2009) and Pick and Sirkin (2010).
External conversion factors to the agent under consideration	–Social, political/institutional, cultural, economic contexts (public infrastructures, public policies, institutions, markets, social and religious norms and customs, discriminating practices, gender roles, societal hierarchies, power relationships, etc.). –Environmental conditions.	Sen (1999), Robeyns (2005), Bonvin and Farvaque (2008) and Griewald and Rauschmayer (2014). Sen (1999) and Polishchuk and Rauschmayer (2012).
Values, motivations, ethical norms, etc.	–Ethics and responsibility for the well-being of others. –Social influences on decision making and personal history and psychology. –Values, strategies (especially regarding sustainable development). –Personal and social norms	Ballet et al. (2005, 2007, 2014) and Pelenc et al. (2013) Robeyns (2005). Rauschmayer et al. (2011a) Schäpke and Rauschmayer (2014)

responsibility for taking into account the potential irreversible consequences of achieving a particular choice (or a particular set of capabilities) on other people's well-being or/and on the natural environment. Finally, Schäpke and Rauschmayer (2014) use some insights from the field of environmental psychology to explain how, in certain situations, Sustainable Development (SD) norms can be activated and manifested in personal responsibility, which ultimately leads to pro-social behavior in favor of sustainability. In this view, pursuing sustainable development can be seen as a strategy that enables people to develop their capabilities to meet their needs, not only by caring for themselves but also by caring for other people and the natural environment. This is a strategy where self-regarding and other-regarding goals converge. Therefore, CA provides an opportunity for empowering people to “live the life one has reason to value”, including altruistic reasons for behaving sustainably (Schäpke and Rauschmayer, 2014).

The parameters listed in the above table (resources, internal and external conversion factors, values) will help us to better understand the formation of collective agency and capabilities in our case study.

3. Material and methods

This section presents the context for the study and the methodological options that we chose.

3.1. Context of the Study

Our study of the process of creating a new grassroots organization was conducted in the *Campana-Peñuelas Biosphere Reserve (CPBR)* in central Chile. This biosphere reserve (BR)¹² was created in 1984 (17,095 ha) and radically extended in 2009 (238,216 ha) to cover a buffer and transition zone that includes human activities, as recommended by the Seville Strategy (UNESCO, 1996). Despite constituting a regional “green lung” and hotspot of biodiversity, this BR is subject to severe environmental degradation due to its central location between Chile's two biggest cities: Santiago (80 km away, 7 million inhabitants) and Valparaíso (10 km away, 1 million inhabitants). The National Forestry Corporation (CONAF) is responsible for the governance of the BR. During the extension process, CONAF created a management committee. It currently includes conventional public actors, representing existing institutions in the BR (regional administration, local, provincial, regional authorities, etc.), as well as major regional actors in the private sector (Regional Chamber of Commerce and Industries of Valparaíso, Casablanca Association of Vineyard Owners, Quillota Association of Agricultural Landowners, etc.). These stakeholders are powerful, well organized groups. Despite UNESCO's (1996, 2008) recommendations on participative governance, the local population was not really involved in the establishment and extension of the La Campana-Peñuelas BR. Despite recent decentralization measures, it is important to note that Chile remains highly centralized (Boisier, 2004). The country's former dictatorship and colonial history have left a heritage of very strict laws limiting the free association of people (De La Maza, 2003). The combination of these factors means that it is quite difficult for civil society to organize itself and exercise any influence over the state and, more broadly, over development processes. Lastly, it should be noted that individuals and informal associations are excluded from the BR management board because only officially recognized legal entities are allowed to be board members.

3.2. Methods

3.2.1. Participatory Action-Research and the Capability Approach

We have adopted a special epistemological position, i.e., participatory action-research (Kindon et al., 2009). In participatory action-research, the people affected by a particular problem work closely with academic researchers to find a solution (Kindon et al., 2009). The aim is to democratize the production of knowledge and facilitate the empowerment of those involved (Kindon et al., 2009). This calls into question the particular role of scientists involved in this kind of action-research because the latter are not neutral with regard to the social system under observation.¹³ Participatory approaches are often criticized especially regarding the choice of participants, how the conversations are structured, how the analyses of different groups are combined and what tone is set (Kindon et al., 2009; Alkire, 2006). They are often criticized for reproducing the inequalities and power imbalances

¹² Biosphere reserves are not protected areas in the strict sense. Their goal is not limited to environmental protection. They aim to focus on the territorial implementation and experimentation of sustainability through participatory governance and to combine environmental conservation and human development by supporting different sustainable human activities, practices and behavior (Unesco, 1996, 2008).

¹³ We fully adopt this particular epistemological position. Action-research seems to correspond fairly well with the twofold goal of Ecological Economics, i.e., the study and management of sustainability (Costanza, 1992). As noted by Baumgärtner et al. (2008, p. 385) “This means in particular that EE is not only driven by a cognitive interest, i.e., an interest to understand and explain the world as it is, but also by an action interest, i.e., an interest to manage the world based on an idea of how it ought to be”. For further details on the role researchers can play as facilitator for sustainability transition see Rauschmayer et al. (2011b).

that they seek to overcome or for not attaching sufficient importance to the power structures that they intend to modify (for further details on power imbalances, see Alkire, 2006). However, according to Frediani (2006), the application of the CA through participatory methods aims to specifically address the limitations usually attributed to participatory methods. Participatory methods reinforce the CA and vice versa (Frediani, 2006). Indeed, the CA contributes to the participatory literature by providing a comprehensive, flexible and multidimensional theory of well-being. In addition, by making people the driving force for change in development processes (Frediani, 2006), the CA gives a crucial role to agency and empowerment. In turn, participatory methods contribute to the capability approach by offering a variety of tools and techniques that have been well developed and researched (Frediani, 2006) (for specific examples, see Alkire, 2006).

3.2.2. A Four Step Method

Our research method includes four key steps: (i) identification of individual actors involved in sustainable activities that show sustainable behavior (ii) participatory workshop to empower them (iii) latency time and going back to the field and (iv) observation of the process of setting up a formal organization (local NGO) by a small group of individuals who participated in the workshop. Table 2 presents an overview of the main characteristics of the different steps.

Below is a brief description of each step.

Step 1. Given that the BR's goal is to implement sustainability on its territory, we considered individual actors involved in sustainable activities that demonstrated sustainable behavior because they have the know-how, practical expertise, skills etc. required for sustainability implementation. A survey was conducted between June and August 2011 in La Campana-Penuelas BR in order to identify the actors of interest. A method known as “snowballing” enabled us to identify one actor after another (for further details, see Oppenheim, 2000). We identified individuals living or working within the BR that hold SD values (as described in Section 2.4), which they also put into practice through their activities/business/organization. They are managers of a small or individual businesses (e.g., organic farming and eco-tourism, etc.) or community organizations (neighborhood association, rural school, etc.) working to set up or demonstrate alternative modes of production, consumption, distribution, education, construction, waste processing, etc. Twenty-two of the 40 people we met corresponded to these criteria. Appendix A presents a list of categories of participants. The interviews that we conducted with each individual revealed that they face several barriers that hinder their agency from developing sustainable lifestyles. Most of the barriers concern external conversion factors and include: absence of support, competition with conventional agribusiness and mass tourism, production standards that are unsuitable for small-scale activities and sustainability requirements, lack of legitimacy in the eyes of the general public and conventional institutions (including the BR) and lack of participation in decision making. They expressed interest in participating in a workshop that brought together their peers because they were not sharing any social

structures, such as networks or associations. Consequently, they are not represented on the BR management committee and their voices are not heard alongside those of powerful institutions and interest groups. They are unable to participate in the BR governance despite the fact that they actively contribute to sustainability in the field. At this stage of research, two reasons were identified that justify an empowerment process:

- facilitating the emergence of a self-organized group to overcome the obstacles faced by individual members;
- facilitating the formal establishment and official recognition of the group so it can participate in the governance of the BR.

Step 2. As seen in Section 2.3, Comeau (2010) stresses the importance of having a sense of belonging to a community or place (for example, a territorial identity and feeling rooted in a place). It increases the likelihood of collective environmental action. Evans (2002) underlines the importance of prevailing common values in the emergence of collective agency. Both authors also emphasize the crucial importance of social structures for developing collective agency and collective action. In our specific case, the sustainable individual actors that we worked with did not share social structures. However, a hypothesis could be put forward that they do share a territory (sense of belonging) and common values, i.e., the SD values. We consciously designed the workshop on these two dimensions in order to encourage the emergence of a group of individuals motivated by collective action. The method designed for the workshop is presented in Appendix B. The workshop took place on 29th August 2011.

Step 3. In March and April 2012, 6 months after the workshop, we went back to the field to investigate the impact of the workshop on the participants. We conducted interviews, made phone calls and exchanged e-mails with the participants.

Step 4. Finally, after the workshop a few participants set up a formal organization. We monitored its development via e-mail and phone calls.

The next section presents the results obtained thanks to the four step method.

4. Results

First, we present the different types of empowerment that were identified after the workshop. Then, we present the motivations and tensions of the small group of participants that decided to create an organization after the workshop. The third sub-section investigates how the participants cooperate in order to create the new organization. Lastly, we examine the capabilities of the new collective actor.

4.1. Results of the Workshop: Different Types of Empowerment

This section presents how the workshop affected the participants in terms of whether or not they still wished to continue with the idea of developing some kind of association (i.e., build a social structure). We

Table 2
Overview of the research method.

	Step 1	Step 2	Step 3	Step 4
Goal	Identification of the individual actors involved in sustainable activities	Empowerment of the individual actors	Analysis of the influence of the workshop on the participants	Follow-up of the creation of a formal NGO by some workshop participants
Method	Interviews and visits	Participatory workshop	Interviews, e-mail exchanges and phone calls	Interviews, e-mail exchanges and phone calls
Time period	3 months (June–August 2011)	One day; on 08/29/2011	1.5 months (March–April 2012)	2 years and 1 month (March 2012 to April 2014)

identify four types of response (none of the response types were mutually exclusive: actors could belong to several different categories):

- Increased legitimacy of individual practices: most participants felt that his/her existing practice/activity had gained in legitimacy after the workshop, thanks to the meeting with peers, international researchers and the BR coordinator.
- Individual development of new practices: during the workshop some actors became aware of their action potential and were inspired by their peers' practice. As a result, they went on to develop new practices individually.
- Periodic, informal association around a project limited in time: having met other people with similar values, some participants formed small groups. The aim of these new, informal partnerships is to come together from time to time in order to work on specific projects, such as organizing barter fairs and organizing market of organic products, etc.
- Formal association on a societal project: a small number of participants finally decided to make a formal commitment by creating a non-profit organization, i.e., local grassroots NGO. The NGO aims to initiate and support community processes and projects that intend to improve people's quality of life in a sustainable human development perspective within the BR territory. The organization intends to achieve its goal by implementing projects, such as an agricultural cooperative, environmental education, environmental and cultural conservation, etc.

In conclusion, not all workshop participants were equally empowered. However, our hypothesis is partially validated because at least a small number of participants decided to pursue their association and work toward the creation of an NGO. The workshop helped the participants realize that they do share some common features: SD values, a territory, sustainable practices, common problems, etc. Nonetheless, not all participants were subsequently prepared to make a commitment to set up an organization with other people. We have seen that collective agency cannot be imposed. The different types of empowerment that resulted from the workshop illustrate this clearly. It is difficult to explain exactly why only some participants decided to become involved in the creation of the NGO. However, several interviewees gave at least one main reason: *"engaging in a formal association appears to be too premature for me, time of formal association will come by itself at the appropriate moment"*. This aspect requires further in-depth investigation. However, our field experience suggests that personal trajectory (age, professional and family situation, previous involvement in collective projects, social mobilization, etc.) plays an important role in the possibility of and the will to make a commitment to others in a long-term formal association. We also noticed that despite the fact that interpretations of SD values can be revealed and aligned during the workshop, in a real life situation, divergence can make cooperation difficult. The situation described here corresponds to Fig. 1 where individuals acting as agents confront their values, motivations and views of responsibility.

The next three sections analyze the process of setting up and running the new grassroots NGO.

4.2. Examining Motivations and Tensions Between the Individual and Collective Levels for Generating Collective Agency

This section investigates the motivations of the founders of the NGO and the tensions that arose between the individual and collective levels during the creation process. Table 3 presents the motivations of the founding members and differentiates between self-regarding goals and other-regarding goals.

The table shows that motivations are clearly oriented to empowering the local community, improving the community's quality of life and

Table 3

The motivations of the founding members to create the NGO.^a

Self-regarding goals	Other-regarding goals (Local community/BR territory)
–Have meaningful work.	–Empower local community so people can make their own decisions. –Make CPBR a sustainable territory. –Influence planning decisions in the BR. –Make CPBR territory become an example for other territories.
–Develop the projects that he/she has always wanted to develop. –Because he/she is part of the territory. –Have meaningful work.	–Empower the local community for life improvement. –Support the community with BR initiatives. –Raise traditional and environmental awareness.
–Have meaningful work.	–Support communities to stand up for what they value. –Increase awareness about community and environmental needs. –Generate a development alternative in the BR territory.
–Develop the projects he/she has always wanted to develop (not possible when acting alone).	–Promote sustainable development. –Raise environmental awareness.
–Develop the projects he/she has always wanted to develop (not possible when acting alone).	–Support environment friendly and communitarian consequent planning processes. –Promote sustainable development
–Collaboration with other actors in the territory.	–Increase environmental awareness. –Help change tourist attitudes toward the environment.
–Develop the projects he/she has always wanted to develop (not possible when acting alone).	–Enhance material and immaterial heritage (local knowledge). –Gear education to sustainability.

^a The NGO coordinator granted us permission to use and quote the material available in e-mail conversations about the creation of the NGO and the motivations of founding members.

environmental conservation. Apparently, self- and other-regarding goals are complementary. The interested actors started working together to create the NGO in March 2012. The workshop established a basis of trust that enabled the small group to meet and start working toward forming an organization. However, initially the specific common goals that this type of organization might represent or how it could be administered were unclear. From March 2012 to February 2013, a long process of iterative discussions and meetings took place to discuss these issues and establish the NGO's statutes. During the process, tensions inevitably arose. Table 4 shows several elements drawn from an e-mail received during the process of creating the NGO.

Table 4

Tensions between the individual and collective levels.

Individual level	Collective level
–It is difficult to commit oneself –Each of us is involved in his or her own work and there is a personal and family cost to finding time to attend meetings and work together –We do not know each other well enough.	–It is easy to pool our visions (no particular costs) –What facilitates each meeting is the feeling, which becomes stronger at each working session, that what we are doing is increasingly meaningful. –What is reassuring is that we are developing slowly but continually toward the final goal that in the end, no one will be indifferent to the existence of the Biosphere Reserve.

The column on the left lists the elements that make individual commitment to the collective project difficult. The column on the right lists elements that promote individual commitment to the collective project. The table illustrates “tensions” between the individual and collective levels. Finally, an e-mail received during the process of creating the association demonstrates that the members had succeeded in realizing their potential for collective action: “*Seeing that in Chile the declaration of a territory as a biosphere reserve has no practical or political implications, it is up to us to develop the biosphere reserve, we are the ones called on to build this sustainable lifestyle by interacting together.*” In reference to Fig. 2, this subsection illustrates the difficulties that can arise during the construction of the “intangible” basis required to develop the collective agency of the group.

We will now analyze the cooperation process, which took place between the individual founders and led to the creation of the NGO.

4.3. Analysis of the Process of Generating Initial Collective Capability

In this section, we present the ingredients required for the successful creation of the NGO by the group of motivated individuals.

Each of the individual actors decided to pool some of his/her resources. For instance, all members had to invest a considerable amount of time (meetings and drafting statutes are very time consuming). Some founding members also contributed material goods, such as working facilities (e.g., office or work room, now the official meeting places for NGO members), shared computers and cars, etc. The founders also had to pool some of their individual human and social capital. For instance, some founding members had previous experience as NGO managers and, therefore, knew about compiling the statutes, dealing with authorities, applying for grants, etc. Other founders had considerable field experience, skills in community tourism, agriculture, etc. In terms of social capital, some were part of a network of regional researchers, others had close relationships with indigenous and farming communities, political representatives or activists or even local businesses (for further details on the contribution of each members see Appendix C). The institutional context played a crucial role here as an external conversion factor. Indeed, it is important to remember the lasting impact of the restrictions imposed on civil society organizations under the dictatorship (1973–1989) in Chile. Fortunately, a new law (No. 20.500) was promulgated in February 2012, which empowered municipalities to receive, analyze and approve the legal statutes of local NGOs. The NGO's statutes were submitted to the municipal authorities on the 18th of February 2013. However, none of the municipalities to which the NGO submitted its statutes knew that they had acquired this new authority, nor were they aware of the procedures to follow. The statutes were approved on the 19th of July 2013. It, therefore, took almost 5 months for the NGO to have its legal statutes accepted and to be attributed a legal identity. Finally, the NGO waited almost a year before being assigned a registration number (received on the 8th of April 2014). The entire process lasted over two and a half years. Without the promulgation of the new law in February 2012, obtaining legal recognition for the NGO would have been impossible. If the process to extend the biosphere reserve in 2009 had not occurred and if there had not been any Unesco documents promoting participative governance, the other stakeholders would not have considered the desire to create an organization as relevant. As far as the environmental conversion factors are concerned, the area is a biodiversity hotspot subject to environmental degradation. This situation increases the need, relevance and urgency of the NGO's actions, projects and claims to implement sustainability. In addition, the NGO founders attached particular importance to having at least one member to represent each geographical sector within the biosphere reserve. This is very important for territorial representation when dealing with the biosphere reserve board and other organizations.

In reference to Fig. 2, the cooperation process described above helps to establish the “material basis” which is required to pursue the goal collectively defined. The combination of pooling individual resources and

human and social capital within the social and environmental context resulted in the first collective capability of the group: being able to set up a legally-recognized organization. Finally, the achieved functioning of the group, obtained through collective action, was the creation of the NGO.

4.4. Investigating the Capabilities of this New Collective Actor

Here, in accordance with the work done by Griewald and Rauschmayer (2014), we analyze the NGO as a collective actor. We do not consider the potential impacts on individual capabilities. We will return to this aspect in the Discussion section (Section 5.1). Fig. 3 shows the NGO's capability sequence.

The NGO's resources include the goods and services, as well as the human and social capital that members have pooled. The organization now has its own organizational conversion factors. For instance, the “statutes” define the goals, mission, values and organizational structure of the NGO (composition of the board of management, decision-making methods, etc.). Lastly, the “know-how” and experience gained during the lengthy process involved in setting up the organization (which could be considered as a cultural background shared by the members) serves as an organizational conversion factor by reducing internal transaction costs. In terms of social conversion factors, the organization has already established partnerships with other organizations operating within the biosphere reserve, as well as those outside its perimeter. From the outset, setting up the NGO was a joint learning process involving CONAF and representatives of the BR management board. After 18 months of on-going communication, the NGO members were informed that they will be included in the new BR management board to be established in 2015. The combination of resources and conversion factors has resulted in the development of two new capabilities, i.e., being able to participate in the BR board and being able to implement SD projects at the local/regional scale. Finally, as achieved functionalities the NGO has been granted membership of the BR management board. As far as the implementation of SD projects is concerned, it is too soon to talk about achievements. However, the new NGO may provide some responses to overcoming the barriers to developing sustainable lifestyles that were identified by participants during the workshop (see Appendix D). As a conclusion, being board member of the biosphere reserve is typically a collective capability (individuals are simply excluded from the board). It represents an opportunity that is beyond the grasp of any individual that is not involved in an organization.

The next section, discusses the possible feedback from collective agency and collective capabilities on the individual level (feedback arrows in Fig. 2).

5. Discussion

This last section discusses the dynamic approach to agency and capability presented in Section 2.3 (particularly in Fig. 2) and concludes with a discussion of the possibility of linking individual and collective well-being assessment.

5.1. Possible Feedbacks from Collective Agency and Collective Capabilities on the Individual Level

The NGO's agency may increase or decrease depending on whether it can successfully obtain funding, establish a relationship of trust with the other members of the BR board (and more broadly from other stakeholders in the territory) and implement relevant SD projects. As a result, the NGO could see its resources and conversion factors enhanced or restricted. If the NGO is successful, the group may obtain new collective capabilities, such as being identified as an important stakeholder with regard to SD implementation at the local/community level and being able to influence the development processes that affect the area, etc. Potentially, the feedback mechanisms could also have an impact on the individual level. Indeed, if the NGO comes into conflict with other BR

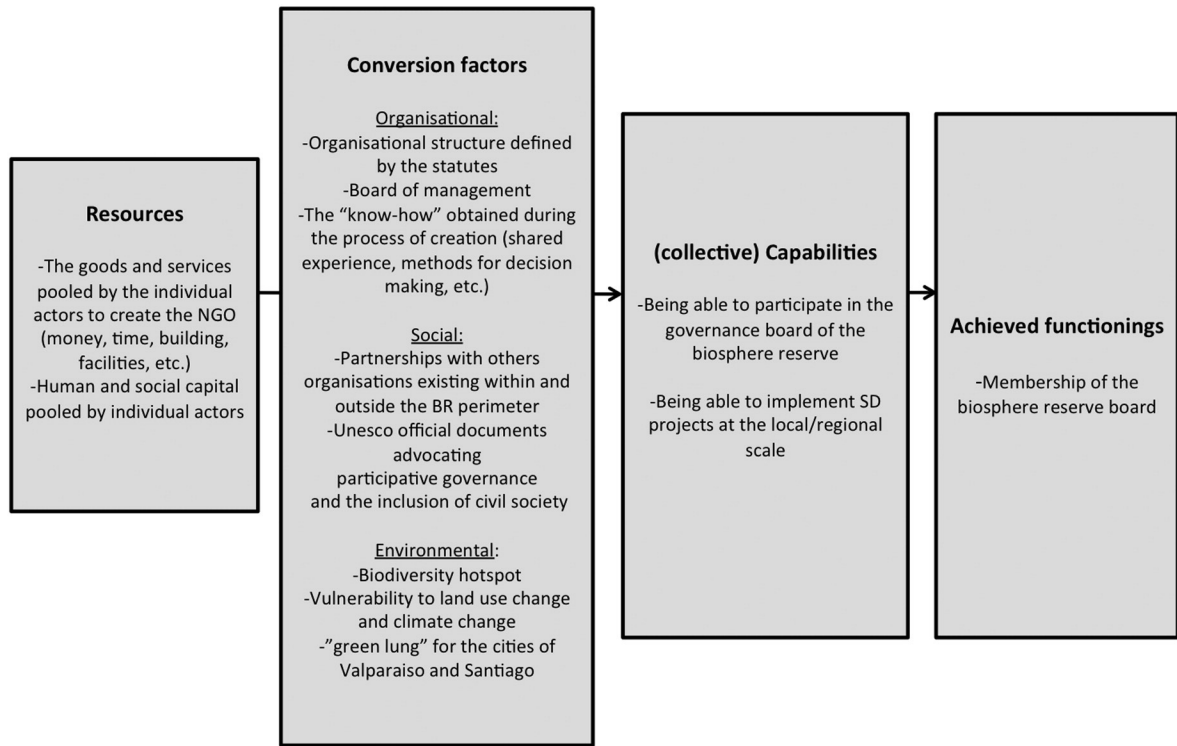


Fig. 3. The NGO's capability sequence.

stakeholders or if divergences arise among the NGO members leading to conflict, there could be a negative impact on the individuals' capabilities. This could restrict their freedom to achieve a sustainable lifestyle. For example, the failure of some actions of the NGO could lead to a loss of motivation to act for SD or even involve individual financial or legal liabilities, etc. However, if the organization succeeds in increasing its agency and collective capabilities, it is likely that some positive feedback effects will be seen in terms of the individual capabilities of members who belong to the organization, for example: being able to secure sustainable lifestyles, being able to secure and disseminate ecological or/and social innovations, being able to share and disseminate SD values and being able to exercise social and environmental responsibility at a local/regional scale, not only on an individual level, etc.

5.2. Possibility of Assessing Well-Being at the Individual and Collective Levels

Being able to participate in society is an individual capability if it involves voting, for example (it may correspond to what Sen calls socially-dependent capability). However, being able to participate in the local community and influence local development processes by being involved in a group, which aims to implement sustainability for the benefits of all, is typically a collective capability. It is a potential choice, which is only accessible via active participation in a group. Indeed, in our case study, the founding members of the NGO freely and voluntarily took part in a process of collective agency that resulted in the emergence of a new organization. Considering the founding members' motivations and the NGO's objective, improving the individual capabilities of NGO members will also presumably contribute to the community's general well-being, notably by improving the living conditions of other individuals (for example, facilitating access to local organic products). In addition, the NGO aims to foster environmental conservation¹⁴ and

material/immaterial heritage conservation.¹⁵ The local environment and material/immaterial heritage are intrinsically collective dimensions of the community well-being. Therefore, the impact of their conservation (or destruction) cannot be assessed solely in terms of individual capabilities. It has to be considered in terms of its contribution to maintaining/enhancing collective identities (sense of belonging, etc.) and so to overall community well-being.

Finally, this case study shows that there are situations where self- and other-regarding goals converge. In these situations, an improvement in individual and collective capabilities can be seen as mutually reinforcing, thereby, increasing overall well-being.

6. Overview/Conclusion

This article set out to clearly define and link the related concepts of collective agency, collective capability and collective action in the context of sustainability implementation. We have developed a framework that enabled us to analyze the emergence of a new grassroots organization. The following figure (Fig. 4) gives an overview of our case study by applying the conceptual framework we developed to analyze the articulation between individual and collective levels through the lens of the CA.

Fig. 4 shows that cooperation between individual sustainable actors enabled them to develop a collective agency that granted the group with collective capabilities. The achievement of these capabilities resulted in the creation of a new social organization. This organization helps to bridge gaps between different levels. First, instead of acting alone the organization fosters the cooperation between individual sustainable actors. Second, by participating in the BR management board (where there are many other social organizations representing different kinds of actors and interests), the NGO helps

¹⁴ The NGO aims to reach this goal by implementing sustainable projects, as well as by taking part in decision-making that concerns land planning on the BR board and/or organizing social action against threats to the natural environment.

¹⁵ The NGO seeks to obtain this goal by creating a museum and developing a project that enhances the value of rural identity, for example.

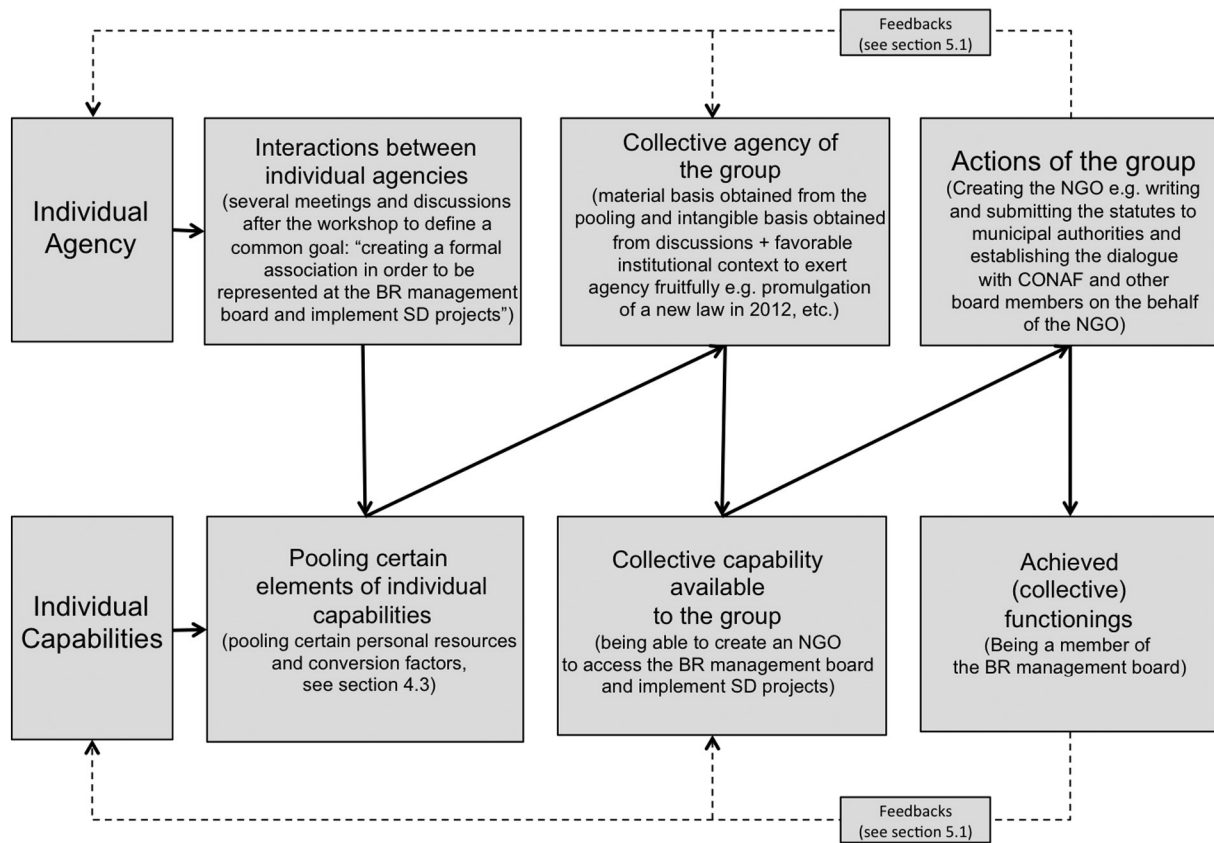


Fig. 4. Overview of our case study: analyzing the emergence of a new grassroots organization.

to bridge the gap between the group of sustainable individual actors operating at the local level and the regional level. Third, depending on the success of the NGO in gaining legitimacy, the organization could help to bridge the gap between the local population and regional level, for example by coordinating social mobilizations to foster the transition toward sustainability. So we can conclude that collective agency and capability and collective action help to bridge the gap between the individual and collective levels notably by enabling individuals to create of new social organizations as it is demonstrated by our case study.

Appendix A. The List of Participants at the Workshop

Activity category	Number of participants
Sustainable development demonstration center (Eco-Aldea, integrated plots, Eco-construction, etc.)	5
Alternative agriculture (market gardening, livestock, alternative distribution in the form of baskets, cooperative)	5
Recycling (organization of sorting and transport)	1
Education (public and private schools that have integrated sustainable development within the structure of its curriculum and infrastructure)	3
Civil society (neighborhood associations, local associations or foundations)	4
Ecotourism (community tourism, agro-tourism, etc.)	3
Restaurant (local organic products and recipes/training in healthy cooking)	1
Total	22

Appendix B. Description of the Participatory Workshop

The workshop was carried out in a special working environment, i.e., a location that was politically and geographically neutral and accessible using public transport. The workshop lasted 1 day (29/08/2011) from 10:15 a.m. to 5:30 p.m. Invitations were sent by e-mail with individual follow-up calls as a reminder. The workshop was organized and conducted in order to foster social learning (Argyris and Schön, 2002; Coudel et al., 2011), to encourage individuals to express their values and recognize others as like-minded people. The workshop included five successive steps, each of which is necessary to achieve our ultimate goal, namely, to set up all the elements required to initiate the creation of an organization gathering the sustainable individual actors.

- Step 1. The objective of the first step was to reveal the common SD values held by the participants. We started with individual work, asking each of the participants to write their own definition of what a sustainable activity is. We then identified key words collectively and wrote a definition that everyone accepted. The participants developed the following definition: *"To create change alternatives in a way [that is] coherent with our conscience [and] generated through the heartfelt observation (of nature) and which contribute to the community of life."*
- Step 2. The objective of this step was to work collectively to identify problems encountered by the stakeholders in developing their sustainable lifestyle. Here, we moved from working individually to working in small groups of 3–5 people. Each group received three index cards on which they were asked to write one problem/barrier. Then we collectively sort the different problems identified by the sub-group according to the categories that define

agency (see Table 1). It is important to note that the problem categories were only defined once all of the sub-groups had finished writing in order to avoid inducing responses.
Constraints identified by sustainable individual actors

Problem category	Problems identified during the workshop
Natural resources	<ul style="list-style-type: none"> –Difficult access to organic seeds –Problem of waste management leading to different types of pollution –Unsustainable management of water supply leading to a severe lack of drinking and irrigation water
Economic or material resources	<ul style="list-style-type: none"> –Lack of physical space (impossible to buy land) –Lack of support (funding, etc.) for eco-friendly activities
Internal conversion factors	<ul style="list-style-type: none"> –Fear of bureaucracy –Lack of communication between innovative actors –Lack of knowledge about how to apply for grants/financial assistance –Lack of associative activity and trust between innovative actors –Change in individual habits required on the part of innovative actors (less defiance and more trust needed) –Difficulty for innovative actors to find places to hold meetings
External conversion factors	<ul style="list-style-type: none"> –Disinformation about the benefits of ecological modes of production –Prevailing socio-economic model makes it difficult to implement environmental actions –Lack of political will and support for sustainable activities –Excluding government policies –Water contamination –Drought
Values	<ul style="list-style-type: none"> –Change of social habits required –Lack of collective commitment –Lack of environmental culture and education in the population –Lack of environmental awareness

Step 3. The objective of the third step was to characterize the potential interactions between the BR as an institution and the contribution made by sustainable actors to the BR as a territory. The work continued in sub-groups of 3–5 people. Two sheets of different colored papers were distributed to participants. On one, they wrote what they could contribute to the BR; on the other, what they expected from the BR. In terms of contributions, the sustainable actors primarily proposed awareness raising actions through practical education. They also see themselves as vectors of knowledge and practices. Their ‘expectations’ of the BR as an institution largely concern their desire for recognition/legitimacy and support for their practices. They also expect to see concrete actions from the BR (i.e., not simply a label that exists on paper) and efforts to transmit their message of SD. At this stage of the workshop, individuals realized that they share the same values, problems and territory.

Step 4. This penultimate step aimed to encourage participants to realize that they had the capacity to work collectively to solve the problems identified in Step 2, on the condition that they pooled some of their goods/services/knowledge or skills. Participants were asked to sit in a circle on the ground. Three paper cards were distributed on which they were asked to write three proposals of goods/services/knowledge or skills they could contribute to solve the problems identified. This step helps participants realize two things, namely: that they have certain capacities in their own hands (what they are capable of) and that working together means that certain problems can be resolved. This step highlighted the potential of collective action to change their situation.

Step 5. The objective of the final step was to give the group the opportunity to name a representative or elect somebody to represent them at the meeting with the BR coordinator, and ultimately to join the management committee. Here, we stepped up the

social learning aspect of the workshop, inasmuch as after working together, the group was invited to make its first decision as a group. We let the group organize itself. We did not designate a representative or organize elections. The result was unexpected. The participants did not want to designate or elect one person at the end of the workshop. Instead, they preferred to take time to think about what would be the best form of organization to represent them on the BR board.

Appendix C. Examples of the Resources and Social and Human Capital Provided by the Members to Create the NGO

Resources	Social capital (Formal and informal relations)	Human capital (Skills, expertise, know-how, experiences, etc.)
<ul style="list-style-type: none"> –Working facilities, meeting place and equipment –Time 	<ul style="list-style-type: none"> –Network of NGOs –Network of scientists. 	<ul style="list-style-type: none"> –Organizational skills –Skills in ecology –Skills in community based development and tourism –Research skills –NGO administration experience. –Field experience –Skills in eco-agro tourism –Skills in fauna and flora –Skills in traditional knowledge/indigenous history and culture. –Community diagnostic and development techniques –Project management skills –Experience in grassroots movements. –Agricultural skills –Management and administration skills. –Geographic Information System (GIS) skills –Local government experience. –Management and administration skills and experience –Experience in tourism and tourist associations –Cultural management –Experience in organizing cultural events –Educational skills.
<ul style="list-style-type: none"> –Working facilities and meeting place –Time 	<ul style="list-style-type: none"> –Link with indigenous community –Link with local tourism association. 	
<ul style="list-style-type: none"> –Working facilities and meeting place –Time 	<ul style="list-style-type: none"> –Network of NGOs and grassroots movements. 	
<ul style="list-style-type: none"> –Time 	<ul style="list-style-type: none"> –Link with CEOs from companies and foundations. 	
<ul style="list-style-type: none"> –Time 	<ul style="list-style-type: none"> –Links with local governments –Rural organizations. 	
<ul style="list-style-type: none"> –Time 	<ul style="list-style-type: none"> –Links with local and regional tourism associations. 	
<ul style="list-style-type: none"> –Meeting place –Time 	<ul style="list-style-type: none"> –Links with NGOs working in local history and cultural heritage –Rural public school network –Links with local governments. 	

Appendix D. Responses/Solutions that the NGO can Contribute to the Problem Identified Collectively During the Workshop

Problem category	Problems identified during the workshop	Solutions provided by the creation of the NGO
Ecosystem services	<ul style="list-style-type: none"> –Unsustainable management of drinking and irrigation water supplies –Problem of waste management –Difficult access to organic seeds 	<ul style="list-style-type: none"> –Implementation of several SD projects –Implementation of several SD projects
Economic or material resources	<ul style="list-style-type: none"> –Lack of physical space (impossible to buy land) –Lack of support of ecological activities 	<ul style="list-style-type: none"> –The NGO can apply for funding to support ecological activities

(continued on next page)

(continued)

Problem category	Problems identified during the workshop	Solutions provided by the creation of the NGO
Internal conversion factors	<ul style="list-style-type: none"> –Fear of bureaucracy –Lack of communication between innovative actors –Lack of cooperation and trust between innovative actors –Lack of knowledge regarding how to apply for grants/economic assistance –Change in individual habits required (individual coherence and defiance) –Difficulty for innovative actors to find meeting places 	<ul style="list-style-type: none"> –The NGO acts as an interlocutor with the BR management committee and other local authorities –The NGO provides enhanced communication between actors and a platform to discuss their ideas –A group of people with experience in project application is available for passing on information and applying for funding –Promoting initiatives that can inspire others.
External conversion factors	<ul style="list-style-type: none"> –Disinformation on the benefits of ecological production methods –Prevailing socio-economic model renders environmental actions difficult to realize. –Lack of political will and support for sustainable activities –Exclusive government policies –Water contamination –Drought 	<ul style="list-style-type: none"> –Promoting initiatives that inspire others. –Maintaining a permanent dialogue with the BR management committee. –Maintaining a permanent dialogue with the BR management committee.
Values	<ul style="list-style-type: none"> –Change of social habits required –Lack of collective commitment –Lack of environmental culture and education in the population –Lack of environmental awareness 	<ul style="list-style-type: none"> –Talks at schools and local governments about BR and their role. –Talks at schools and local governments about BR and their role.

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