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Social Regeneration and Environmental Sustainability in Biosphere Reserves¹

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Introduction

The idea of social regeneration, as framed in this volume, highlights a dynamic or transformative element. Chapter one in this volume explains that regeneration is a development approach, which is directed towards embedding inclusive and cooperative relations, leading to shared understanding, decisions, and the mutual prosperity of people. In particular, the focus is on types of economic organising that reciprocate communities by reinvesting the surplus produced thanks to natural and community resources (Borzaga and Sacchetti in this volume). The present chapter complements this analysis by considering social regeneration within UNESCO designated biosphere reserves (BRs), and by combining social regeneration with natural justice. By natural justice we mean solutions that do not hamper the delicate equilibrium of the ecosystems and biodiversity that exist in BRs. In this sense, the UNESCO programme on BRs provides an excellent context to analyse the interaction between the social and the environmental dimensions of development.

BRs have been designated by UNESCO since the 1970s and are located across the globe. Across continents, the challenge of sustainability meets a variety of cultures, histories, natural settings and forms of economic organisations. Although the need for compatibility between

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human activities and BRs has been invoked at several policy levels, solutions on how to achieve this outcome have not been considered in the same detail. The chapter then identifies a number of ‘spaces’ or dimensions (without claiming to be exhaustive) that differentiate BRs, and the variety of organisational solutions that can be consistent with social regeneration and natural ‘justice’.

To this end, the chapter explores the practice-based approach applied on a number of BRs. Part of the issue is methodological, since BRs may have common aims, but greatly differ in terms of their contextual elements. To explore context, the chapter offers illustrations from BRs in Vietnam, Italy, Australia, and Zimbabwe. The analysis derives from a project undertaken by Assist Social Capital (ASC), a community interest company (CIC) based in Scotland that works to bridge the gap between academic evidence of social capital and its practical application.

Firstly, the chapter explains the nature of BRs as defined by UNESCO (Section 2). We then present description of case studies from a recently published special issue of the *Journal of Entrepreneurial and Organizational Diversity* on biosphere and community development, addressing cases of UNESCO designated BRs across the world: Cat Ba in Vietnam, Noosa in Australia, Appennino Tosco Emiliano in Italy and the Middle Zambezi Biosphere Reserve in Zimbabwe (Section 3). Following illustrations, we present the overall framework of analysis, and identify the multifaceted ‘spatial’ dimensions (physical, relational, policy, organisational), which may enable BRs communities to take ownership of their own needs, aims and solutions.

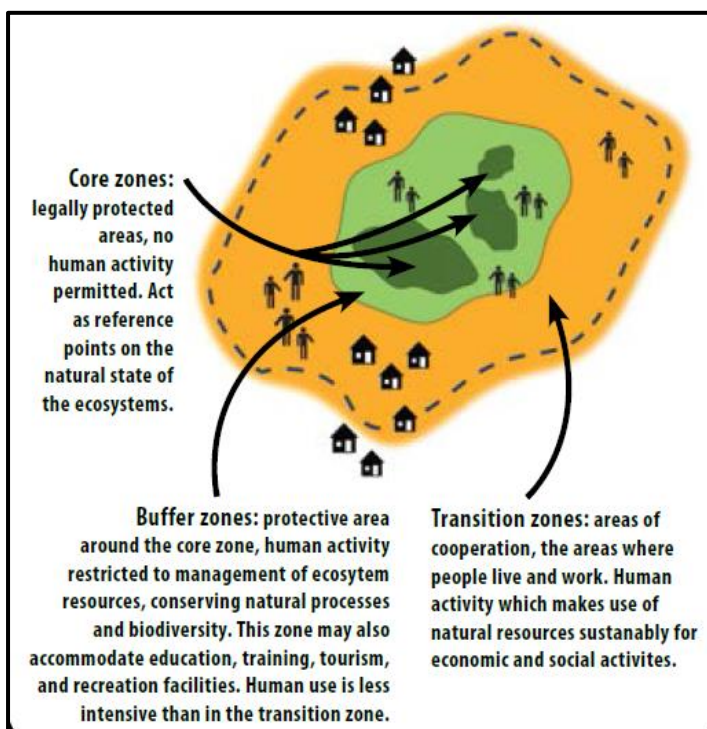
Biosphere reserves across the world – illustrations

Increasingly there is need to reconcile the natural environment with economic as well as social development. Within this context and with a particular focus on preservation and conservation, UNESCO launched the Man and Biosphere (MAB) programme in 1971 (Coetzer et al., 2014; Ishwaran et al., 2008). Out of this framework emerged the biosphere reserve (BR) concept for context-specific conservation in 1974 (Ishwaran et al., 2008), and two years later the World Network of Biosphere Reserves (WNBR) was born (Ishwaran, 2009).

The three main functions of a BR are (UNESCO, 1996; Ishwaran et al., 2008; Coetzer et al., 2014):

- (i) *Conservation* - preservation of ecosystems, landscape, species and genetic resources
- (ii) *Logistic support* - support projects, research and monitoring, environmental education
- (iii) *Development* - foster sustainable economic and human development

FIGURE 1: BIOSPHERE RESERVES – THREE ZONES



SOURCE: ASC (2013)

To translate the three roles into practice, UNESCO-MAB structured the zoning of the BRs into three: the core, buffer and transition zone (UNESCO, 1996; Ishwaran, 2009) (see Figure 1).

The MAB programme aims at turning BRs into ‘*training grounds*’ that develop sustainable development principles translated

into local contexts (Ishwaran, 2009: 3). This site-specific application of an international principle is reflected in the recent emphasis on BRs as Learning Laboratories (LLabs) for Sustainable Development to address gaps in implementation of the MAB programme such as ensuring that the space under consideration includes all three zones of a BR; the core, buffer and transition areas and that conservation and development are accepted as interdependent and applicable to all three zones (Ishwaran et al., 2008).

World Network of Biosphere Reserves requires BRs (WNBR) to submit periodic review every 10 years, to ensure that they are compliant with the Seville Strategy and the Statutory Framework (UNESCO, 1996), which formalizes the requirements of UNESCO's designation for BRs. The report produced for the review process is then scrutinized by the Advisory Committee for BRs for recommendation to International Coordinating Council (ICC). The objective of the 10-year review is to ensure BRs are functioning as sites for testing and demonstrating approaches to sustainable development, to report on progress being made and identify any changes required (UNESCO, Periodic Review Process). The review process was introduced as part of the Seville Strategy (UNESCO, 1996), which places a strong emphasis on the importance of BRs for sustainable development and conservation. The Statutory Framework of the WNBR requires BRs to “strive to be sites of excellence to explore and demonstrate approaches to conservation and sustainable development at a regional scale”. If the ICC finds that a BR does not satisfy the criteria, it can notify the Director-General of UNESCO that this area will no longer be referred to as “a biosphere reserve”. If a State recognizes that a BR under its authority does not satisfy these criteria, it can notify the MAB Secretariat that it will be removed from the WNBR.

The Periodic Review process is therefore designed to provide evidence that the requirements of the UNESCO designation continue to be met. In this way, it is possible for the ICC to

substantiate and endorse the contributions of BRs being managed locally, while ensuring the value and coherence of the network globally. The periodic review also acts as useful methodology to deepen shared understanding of the role of BRs with their stakeholders. As noted by Reed and Egunyū “*Beyond meeting statutory requirements, the periodic review process can also be considered an opportunity for learning within and beyond the national and international networks.*” (July 2013), thus emphasizing opportunities to increase shared understanding locally and globally.

Despite continuous challenges in the current 669 BRs in 120 countries worldwide (UNESCO, WNBR 2016), emanating mainly from the implementation of the BR Framework in diverse local settings, the adapted approach for BRs as LLabs provides an opportunity to learn from their own experiences as well as each other’s practices which, in turn, can enable and inform BR management and other stakeholders to develop improved and more balanced strategies and policies (Ishwaran et al., 2008).

After some 40 years in existence the MAB programme continues to be highly relevant to current global challenges. On the 25th of September 2015 at the seventieth anniversary of the United Nations in New York, member states agreed on new global Sustainable Development Goals (SDGs). There are 17 SDGs and 169 targets for 2030. In March 2016, the 4th World Congress of Biosphere Reserves in Lima, Peru, set out a new vision for MAB for the decade 2016-2025, which mainstreams UNESCO BRs as models for national/regional demonstration of sustainable development within national and global agendas for the 2030 SDGs.

The Cat Ba Biosphere Reserve in Vietnam

Cat Ba Archipelago Biosphere Reserve (CBBR) is one of 8 BRs in Vietnam. It has been part of the UNESCO Man and Biosphere Reserves Programme since 2004. The CBBR archipelago lies 150 kilometres southeast of Hanoi and is made up of 366 islands and islets

covering an area of 26,241 ha, 65% (17,000 ha) terrestrial and around 35% (9,200 ha) marine. CBBR is home to some 2,320 different types of fauna and flora. In the region 60 of CBBR's species are endangered. There are around 6,000 inhabitants on the island. Main income streams are; tourism, fisheries, agriculture, forestry and service delivery. Unemployment in the Haiphong province is around 4%. The BR connects to Ha Long Bay World Heritage Site (UNESCO World Heritage Centre), one of the seven new natural wonders of the world, and 40 km to the west is Haiphong City with a population of around 2 million. CBBR hosts several globally important habitats such as coral reefs, mangroves, sea grass beds and tropical limestone forests that are under threat due to pressure from surrounding and visiting populations (UNESCO MAB, 2007). The BR is also home to the Cat Ba langur (*Trachypithecus poliocephalus*) a critically endangered primate found only in CBBR.

Since 2007, CBBR has been using engagement initiatives focusing on; local community professions (i.e. farming, fisheries, forestry, tourism), young people, school students and teachers as well as all seven village Community Learning Centres on Cat Ba Island. In particular, the model implemented by Assist Social Capital, called the *Social Enterprise and Biosphere Reserve Development Framework*, aimed to “support BRs and their communities to become economically resilient while at the same time maintaining the natural environment in a manner that is appropriate to local strengths, resources and cultural characteristics” (Assist Social Capital, 2013). Facing a risk of overexploitation of the natural asset by tourism, the development model focused on activities designated to promote social capital and place awareness, with the aim to match community needs and the biosphere main functions. The model adopted the OECD's definition of social capital (OECD, 2001), which defines social capital as “*networks, together with shared norms, values and understanding which facilitate cooperation within and among groups.*” Social capital was deemed as key to maximising a community's potential as it is assumed to enable stakeholders to become actors

for sustainable development. Further, ASC's project focused on specific organisational solutions, namely social enterprises. These were identified as a sustainable, not-for-private-profit business model achieved through an asset lock, which strives to be financially independent of grants and have primary objectives to achieve social and/or environmental benefit. This case and the development approach adopted to promote social capital and social enterprise at CBBR have been illustrated in detail in a recent article (Campbell and Sacchetti, 2017), where it is emphasised that further research needs to be done to determine whether this model creates a lasting and sustainable environment. In the meantime, CBBR's approach was identified as a national example of good practice in combining conservation and development for sustainable development at the UN Conference on Sustainable Development, Rio+20 in June 2012.

The Noosa Biosphere Reserve in Australia

The case of Noosa region in Queensland has been analysed in Barclay (2017), on which we build this section. Barclay notices that The Noosa region in Queensland, Australia is recognised for its rich biodiversity and features one of Australia's most visited national parks. The Noosa Biosphere Reserve, designated by UNESCO in 2007, hosts over 44% of Australia's bird species, 1,365 species of plants, 711 species of native fauna and 60 distinct ecosystems. Noosa is a popular holiday destination with an active tourism industry and a diversity of local businesses and social enterprises with aspirations to operate ethically and sustainably.

In this work, Barclay explains that the strategy to develop Noosa Biosphere Reserve came about through community partnership with local government. The result was a diverse community governance structure which set up the board of Noosa Biosphere Limited in order to manage the activities of the BR. The Board comprised of representatives from community-based organisations working in culture, economic development, environment, social

engagement, education and research together with representation from the local tourism industry and regional political representatives.

To promote a balanced relationship between human interaction and the environment the BR undertook community engagement, supported innovative projects as well as research and learning. As part of this process Noosa Biosphere Limited ran a partnership programme that invited applications from social enterprises, environment and community groups, universities, educational institutions and business that wished to be recognised for their efforts to promote BR principles.

Community participation in Noosa BR was recognised and valued with the BR being seen as a learning laboratory for collaboration and interdisciplinary thinking. This led to innovative projects and actions that worked for a healthy society, economy, environment and place. Gaps and opportunities were targeted where innovative projects might act as a catalyst to inspire others. The community engagement and learning aspects were maximised and documented for the benefit of local, national and international communities.

Consistently with Sacchetti et al. (2009), Barclay identified creativity and culture as being instrumental in the development of social capital and community engagement in the Noosa BR. Creative collaborations and cultural engagement with a multi-stakeholder approach enabled many of the most valuable projects via the social, cultural, environmental and economic sector boards. A key aim of these projects was to encourage awareness and engagement around BR principles, forming the foundation for social and cultural capital in the Noosa BR community.

According to Barclay, during the first five years of operation from 2008 – 2013, Noosa Biosphere Limited produced a broad range of initiatives that had a significant impact within the local community and attracted national and international interest. While they vary in

scope and cover a diversity of themes and market sectors, these initiatives have all been critical in underpinning the UNESCO BR framework as interconnected learning laboratories for community-based interdisciplinary collaborations.

The Appennino Tosco-Emiliano UNESCO Biosphere Reserve in Italy

This case of Appennino Tosco-Emiliano in Italy has been developed in Taneggi and Zandonai (2017), on which we build this section. As Taneggi and Zandonai explain, the Appennino Tosco-Emiliano Biosphere Reserve is located in the Tuscany and Emilia Romagna regions of north-central Italy. It covers the Tuscan-Emilian Apennine ridge from Passo della Cisa to Passo delle Forbici, which marks the geographical and climatic boundary between continental and Mediterranean Europe. The area contains nearly 70% of all species present in Italy including 122 species of birds, amphibians, reptiles, mammals and fish, as well as a wide variety of flora comprising at least 260 aquatic and terrestrial plant species.

The main economic activities are tourism, agriculture, craftsmanship and the processing of high-quality foods such as Parmigiano Reggiano cheese, Prosciutto di Parma, olive oil, honey and spelt. Leisure activities and tourism also represent important economic assets for the 100,000 local inhabitants. Some 68,500 tourists and second-home owners represent seasonal boosts to the population. The Appennino Tosco-Emiliano UNESCO BR includes many villages, such as Succiso, Cerreto, Corniglio, Sologno and Apella that are highly enterprising and cooperative. In their case studies, the authors emphasise that the cooperatives that have been set up have revitalised public places by turning private businesses on the verge of closure into productive businesses. In some instances local communities have championed short supply chains through networks of local production companies offering products characteristic of the local culture. In others small social market economy districts encourage business and non-profit organisations. Cultural initiatives re-forge relationships and revitalise

intangible resources and strengths introducing a new enterprising spirit and a fresh sense of opportunity.

Teneggi and Zandonai also highlight that the Appennino Tosco-Emiliano BR most important output is trust, which is created and circulated on a daily basis by the experiences outlined above. They are “*factories of social cohesion*” (ibid) that keep up the quality of life in the territory. Initiatives that are started by local inhabitants are complemented by people returning to the area or additionally by those from outside the community. The really crucial factor in ensuring these activities are productive for the community and the economy lies in a social contract to take ownership and responsibility and to make the community a home. Rather than simply living in the area, people who make it their home build deep and lasting relationships with the other inhabitants and the place. The same holds true for businesses and companies in the area that incorporate it into their production and/or supply chains. This social contract generates a profound sense of relationship that establishes collective destinies. Similar to life in rural and mountain communities in times gone by, people and their families are bound together by similar activities, not merely for the pursuit of profit but through a feeling of shared future.

As a result, the authors demonstrate, enterprising communities salvage neglected physical spaces, making them into sites for living, interacting and working once again. Trust, ownership, relationships and local stakeholders are the assets responsible for the protection and competitiveness of the Appennino Tosco-Emiliano BR, which is acting as a model for similar rural areas in Italy. The Italian Ministry of Economic Development has selected the area as a model site for further experimentation. This process will see strategic programmes established, focusing in particular on health, transport and school, as well as economic development.

The Middle Zambezi Biosphere Reserve in Zimbabwe

As set out by Mbereko et al. (2017), the number of protected areas globally, where humans are excluded by law, has grown significantly since the first national park in 1872, particularly in developing countries where biodiversity is at its greatest. Research supports the theory that if fauna and flora is not protected, it degrades at a fast pace (Cf. also Naughton-Treves et al., 2005).

Mbereko et al. (2017) explain that in the late 1980s, a paradigm shift took place from protection and exclusion to involvement and inclusion of humans in national parks management and the sustainable use of natural resources (Stoll-Kleemann, De la Vega-Leinert and Schultz, 2010). As a result international conservation initiatives now advocate the use of resource management approaches that centre more on human livelihoods, and BRs are a means to achieve this, under the UNESCO's MAB programme to promote sustainable development based on local community efforts and sound science (Pool-Stanvlie and Clusener-Godt, 2013).

The Middle Zambezi BR became a member of the UNESCO BR network on June 5th 2010. The only BR in Zimbabwe, the Middle Zambezi extends from Lake Kariba and the Matusadona National Park through various National Park and Safari Areas adjacent to the Zambezi River, including Mana Pools National Park and Sapi and Chewore Safari Areas that are already designated as a UNESCO World Heritage Site. Zimbabwe's Middle Zambezi BR covers some 40,000 sq. km in the Zambezi valley. It includes riverine and terrestrial ecosystems unique to the subcontinent, including one of its largest man-made reservoirs, Lake Kariba. The area also contains towns and villages, including Kariba, which depends largely on fishing in Lake Kariba for protein and income.

Research in the Middle Zambezi BR sought to analyse the livelihoods and the conservation issues of natural resources used by farmers bordering the BR, where there is a high inter-dependence between the natural environment and local communities. Evidence suggests that when communities realise economic benefits from wildlife, conservation efforts are aided (Getz et al., 1999; Jones and Weaver, 2009; Ostrom, 2015). Mbereko et al. (2017) highlight that in addition to economic benefit, social capital is fundamental to enabling collective conservation action and equality of shared benefits in communities (Ostrom, 2015; Sacchetti and Campbell, 2014).

A programme in the BR known as CAMPFIRE (Communal Areas Management Programme for Indigenous Resources) was initiated with the aim of creating economic and ownership incentives in the community. However, due to structural weaknesses and national economic crises, as well as over-exploitation of natural resources, either legally or illegally, CAMPFIRE has not benefitted the poor rural communities of the BR. Community members believe the CAMPFIRE programme had collapsed, citing for example the fact that they are not consulted when hunting licences are granted in the area, which they perceive to have negatively impacted their livelihoods. The outcome is therefore conflict between the local inhabitants and the authorities. There have been reports of livestock being left to roam into protected areas and of community members engaging in illegal gold panning in the major rivers using chemicals that kill animals that rely on the river systems downstream.

In an attempt to identify the causes of such failures, Mbereko et al. believe that a focus on support for business with a short-term profit motive (in the case of the Middle Zambezi game hunting) together with a lack of policy to enable local communities to benefit from the natural resources in the BR, results in failure to implement adaptive management strategies that can mitigate threats. Thus, the community uses subtle and illegal methods to benefit from natural resources as they fight to earn sustainable livelihoods. The paper suggests that the

CAMPFIRE model needs to be revised to ensure community benefit, increased accountability and ownership if the aims of the BR are to be assured.

Biosphere reserves and social regeneration: a policy approach

The illustrations reviewed point to a specific challenge that a worldwide programme aimed at BR sustainability faces: how to appreciate diversity of contexts and identify plural and flexible solutions which enable long-term sustainability (Ostrom, 1990). The issue left to be addressed is what elements should be taken into account in order to appreciate the contextual features of each BR and, on those features, design itineraries for social regeneration and natural justice.

In previous work we had suggested a model of ‘community ownership’, which identifies the features enabling the promotion of participation and development within social organisations, as well as more broadly within and across communities (Sacchetti and Campbell, 2014). In this work the ‘community ownership’ model is compared with one of ‘community failure’, where development goals are defined by restricted groups and do not match the needs of specific publics and communities more broadly (Cf. Sacchetti and Sugden, 2010; Cf. Dewey 1927 on “publics”). Community ownership identifies a model of development where socio-economic actions are based on pro-social values defined by cooperation, reciprocity, trust and networking which enable individuals to exert their voice and creativity in deliberative spaces (Cf. Sacchetti et al., 2009; on participatory deliberation see also Lewanski in this volume).

The expected outcomes of promoting a community ownership model is embedding cooperative behaviours, creative deliberative processes and responsibility, leading to innovative activities and the satisfaction of community needs. Differently, community failure is a model biased towards self-oriented behaviours, consumerism, and the organisation of socio-economic activities by means of exclusive and constraining spaces, where only specific

interests are reflected. As a result, the community failure model prevents participation of publics and their capability to bring their experience and knowledge in the deliberative process. It is therefore more likely to disregard community needs, to foster inequality, disillusion, mistrust and conflict (Sacchetti and Sugden, 2010; Sacchetti and Campbell, 2014: 34-35; Borzaga and Sacchetti, 2015).

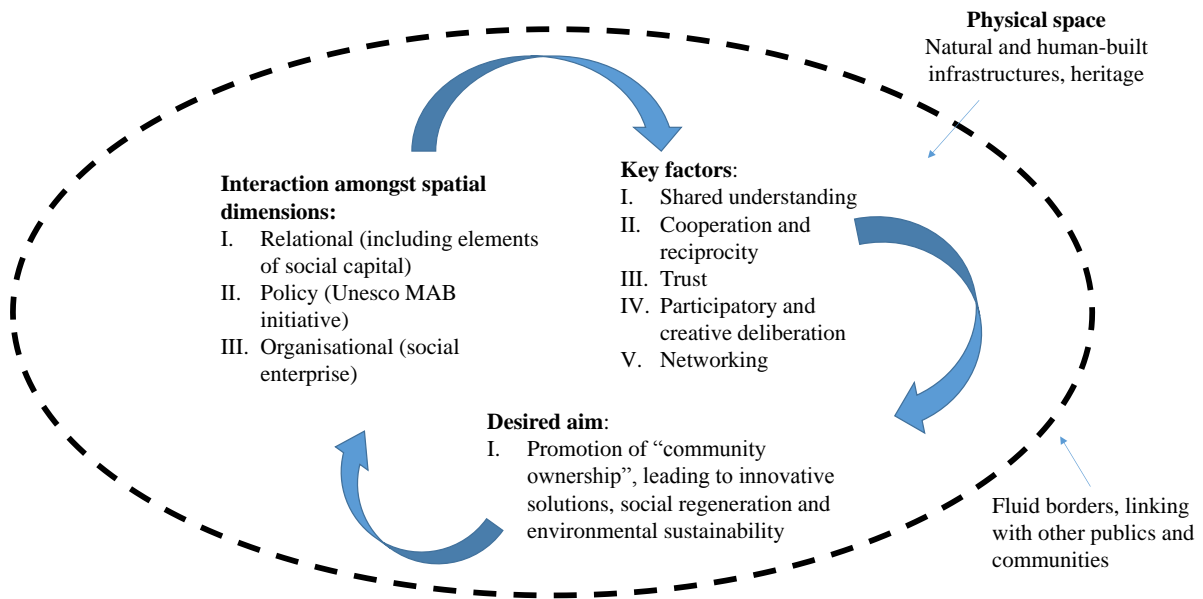
Table 1. Community failures vs. Community ownership

	Community failures	Community ownership
Values and Behaviours	Individuals as passive isolated recipients / direction, competition and consumerism	Shared pro-social values, trust, reciprocity, cooperation, networking and deliberation
Context	Exclusive and constraining spaces	Inclusive and creative spaces
Needs/Outcomes	Community deficits	Satisfaction of community needs across publics
Impacts	Conflict, disillusion and mistrust, inequality	Social regeneration, environmental sustainability leading to community resilience

Source: adapted from Sacchetti and Campbell, 2014

Enabling communities in BRs, therefore, consistently point towards a development model embedded in community ownership, leading to a discovery and an appreciation of diversity of conditions and needs across contexts. This approach requires expanding the analysis beyond the particularities of the morphology and natural elements of a territory. Diversity of situational contexts is appreciated by integrating different but complementary levels of analysis, which are relevant for moving towards community resilience. Figure 2 summarises the approach. Note that the features of a multi-dimensional, enabling space are all interconnected, pointing to the fact that physical spatiality influences and is in turn influenced by all the other dimensions. The same is true for each and every dimension depicted in Figure 2. The dimensions of Figure 2 are described in more detail below.

Figure 2: Overview of the development approach



Source: Authors

Physical space

These are the elements of the situational context defined by the physical spatiality of a locality, and the socio-demographic and health features of the population. One of the first questions policy makers ask when approaching common resources is where to put boundaries on the map. In the case of biosphere reserves (BR), the issue is to identify the three boundaries of the BR defined by the core, buffer and transition zones. Within the zones, physical space is made of natural resources and built spaces, including natural and cultural heritage sites and built infrastructures, all of which can provide services to communities and ensure long term prosperity under sustainability use (Millennium Ecosystem Assessment, 2005).

Relational space

These are the elements of a situational context defined by the quality of relations amongst people, organisations, and groups located within the physical space, as well as beyond it. Relational spaces include elements of positive ‘social capital’, or by those relations, cultures and related behavioural norms that enable cooperation amongst multiple and diverse actors. Woolcock (2001, 13) suggests that “social capital refers to the norms and networks that facilitate collective action.” Such norms have been associated with cooperation, trust, and reciprocity of behaviours. In this sense, a social capital approach contributes to understanding how the relational space may enhance the potential for social regeneration and natural justice by creating a sense of ownership for the members of the community. It is argued that this enables them to become agents for sustainable development themselves (Roseland, 2000). Therefore, social capital has been identified as a crucial aspect to sustainability (see, for example, Barnes-Mauthe et al., 2014).

Organisational space

Another question to be addressed in response to the effort to deliver on BRs as models of social and environmental sustainability is what type of organisation shows features consistent with the development of BRs. These are informal as well as organisational solutions and models of enterprise which build on pro-social values and social capital to create participatory governance solutions. Consistently with the participatory nature of solutions, the assets generated by the organisation, such as the provision of innovative social services, relations, jobs, financial resources, cultural resources, and knowledge, are shared with the community (Sacchetti, 2016). At a system level, this identifies a re-investment model aimed at reinforcing the role of economic activities in acting for natural justice and diffused community prosperity. Sacchetti and Tortia (2016) offer an overview of social responsibility

across different organisational models². Here we consider, amongst alternatives, the Social Enterprise (SE).

SE is a fairly recent term and many types exist internationally and continue to evolve. However the core principle that SEs should work for the common good, runs throughout and bridges variants on its definition. Broadly, SEs are businesses which have an explicit social and/or environmental aim and include in their statutory requirements a commitment to reinvest surplus to achieve this (Borzaga and Tortia, 2010 amongst others). In particular, because they tend to address unresolved community needs, SEs often originate from community publics and are collectively managed by them. More broadly, SEs are characterised by a variety of distinguishing factors, such as the ability to provide innovative services, use specific governance models and foster social capital (Sacchetti, 2016). SEs are present in almost all economic sectors including manufacturing, tourism, recreational and professional services, agriculture, educational, health and social services. SEs are distinct from non-profit organisations (NPOs) in that they strive to be independent of grants and donations. They aim to be economically self-sustainable whilst delivering and reinvesting their surpluses into the business to bring about social and environmental benefits for the wider community, whilst also providing space for the development of cooperative relations and increasing community ownership. Reinvestment in the community is a clear feature of SEs, albeit the debate on whether SEs should be able to distribute at least part of the surplus is still open (Galera and Borzaga, 2009). Italy for example has recently approved a law to allow more flexibility towards the distribution of produced surplus, mostly to reward and attract financial resources. The aim, as a recent EU/OECD report emphasises, is not to use

² The authors, in particular, address social responsibility in traditional corporations, cooperative firms, social enterprises, charities.

financial resources to increase scale and profits for investors, but – given the nature of SEs – to scale up their social impacts. This of course does not necessarily overlap with growth in their size, and can occur via other strategies such as building collaborative partnerships and knowledge sharing (EU/OECD, 2016).

The organisational space also includes supporting financial elements such as social impact investment. The rise and interest in social impact investment is strictly tied to the emergence and growing importance of SEs, as a reply to the social and environmental challenges of communities (Galera and Borzaga, 2009). Social investment is the provision of finance to address social needs with the expectation of a social, as well as financial, return. Unlike grants and donations, social investments are loans, used to create measurable social impact with the aim of the investment being paid back (OECD 2015). Social investors attribute different values to the mix of social and financial returns they expect, for example it includes the offer of capital at rates of return that are lower than the market rate. In fact, it is argued that – besides the aims of the investment – a lower rate of return is a necessary condition to discriminate between standard for-profit loans and social impact investments (ibid.). Such a model is aimed at increasing scaling and financial resilience in SEs.

More broadly, at community level, organisational strategies can be more coherently focused on scaling social impact rather than organisational size by means of participatory and inclusive forms of networking and knowledge sharing (EU/OECD, 2016; Sacchetti and Sugden, 2003). Scaling social impact, in particular, supports linking social capital and brings the attention to the need of taking into account the interaction between multiple coexisting actors and their interests (Borzaga and Sacchetti, 2015).

Policy Space

A policy space reflects the ability of a community, through public administrations, to transform its norms and values into policy aims, formal rules and legal frameworks for governing the allocation and distribution of different resources. Likewise it reflects the capacity of institutions to implement and monitor the implementation of such rules. A policy space is inclusive when the interests of multiple publics and community long-term development goals are promoted through the values of cooperation and deliberation. Differently an exclusive policy space is defined by lack of deliberation and perspective on broad community interests, typically with a top-down approach (Sacchetti, 2014).

Key elements

The key elements of these multiple spaces can be identified in:

- a. shared understanding,
- b. participatory and creative deliberation,
- c. trust,
- d. cooperation and reciprocity,
- e. networks.

Each of these elements is analysed below.

Shared Understanding – describes common standards, expectations and beliefs which are based on shared values and norms. Shared understanding has been argued to be based on proximity of specific values, based on communication, mutual respect, and deliberation: what Sacchetti and Sugden (2009) call ‘mental proximity’. Proximity of values, therefore, is not necessarily defined by co-existence within the same physical space, or spatial proximity within the same community (Sacchetti and Sugden, 2009). Shared values and understanding based on inclusive principles contrast with spaces where relations are characterised by power

unbalance. This would occur for example when the strategic direction of activities within the locality, or more specifically within the BR, are dominated by concentrated interests (Cowling et al. 2009).

Participatory and creative deliberation – relational space forms a discursive platform, a place of transformation, where communication and deliberation engender critical reflection over interacting beliefs, choices and outcomes. Participatory and creative deliberation is a feature of inclusive relational spaces. It is, in other words, the space of curiosity, enquiry and discovery, where individuals actively use their creative intelligence to make sense of interactions, understand their needs and shape their aims and existence (Cf. Dewey, 1934; Halsall, 2012; Latour and Weibel, 2005). Creative responses elaborated in this way express what citizens and publics have “reason to value” (Sen, 1999). These solutions represent an innovative benchmark for the ideation and realisation of new courses of economic initiatives, social activities and policies (Sacchetti, 2013).

Cooperation, reciprocity and trust –cooperation refers to the community members’ willingness to support one another (cooperation) and the collectivity, and to offer support with the confidence that it will be returned in the future (reciprocity). Both cooperation and reciprocity need trust, or the expectation that other members of the community will not act to the detriment of others. Cooperation occurs when actors are in a relation of mutual dependence, and encompass the interests of multiple interconnected actors (Sacchetti and Sugden, 2003). Reciprocity differs from exchange in important ways. In fact, whilst exchange asks for an equivalence between the goods exchanged between actor A and actor B, reciprocity follows a principle of equity and does not necessarily occur between two actors (say A, the giver and B, the receiver) but it could involve a third actor, C, who could receive from B as an act of reciprocity of B towards A (Polanyi, 1944).

Networks – Trust, cooperation and reciprocity facilitate the development of a "dense knit" of production interconnections (Camagni and Capello, 2002). In social capital literature networks describe how people and/or groups are linked through different types of ties; bonding (close strong ties within the community), bridging (horizontal ties across communities) and linking ties (vertical ties between communities with differing power and authority) (Szreter and Woolcock 2004, 655).

Interactions amongst spatial dimensions and shared definition of rules

Institutional economists and political scientists have long studied how norms of cooperation and trust amongst individuals, groups and organisations are a pre-condition for the management of natural commons and the resilience of the communities living within them. Specifically, Ostrom (1990) argued in favour of self-defined rules by which the community of users and beneficiaries understands the common advantages of cooperating and sharing their knowledge to define and enforce common rules for the use of common natural resources. These are natural resources with clearly identifiable borders which, if left to opportunistic and short-term actions, run the risk of being destroyed. The implication of natural resource abuse is that the livelihood of communities that rely on the common is also compromised. The requirement is, therefore, to find rules of accessing and using the resources that support sustainability of both natural resources and human livelihood, encompassing policy and organisational dimensions. The question, for Ostrom, was what rules would be the most appropriate.

From her work we learn that there is not one best way that fits all situational contexts and that top-down policy approaches do not always produce the best results. Specifically, top down approaches would represent a workable solution when: 1) local communities do not have any prior experience of self-management and participation; 2) conflict is high; and 3) individuals

are rational opportunists and do not acknowledge reciprocal interdependence in their decision-making (Sacchetti, 2015). Likewise market solutions will not work if short-term profit maximisation does not also produce also shared long-term benefits (Ostrom, 1990; Sacchetti, 2015; Sacconi and Degli Antoni, 2008). For example, the activities of organisations that do not share principles of social and natural justice and do not have representation of those interests in their governing bodies may be argued to have no incentives towards BR sustainability.

Besides top-down solutions and private market solution, the theory of commons identifies a third way to solve collective challenges, which relies on collective community management.

In our case, self-management in BRs can be argued to require:

- a.** binding agreements and awareness of environmental issues,
- b.** collectively defined rules,
- c.** rules on how to access natural resources,
- d.** compliance with the rules (mediated through reciprocity).

The requirements of community management are argued to be underpinned by trust, cooperation and reciprocity of behaviours, and that overall collective action can be best activated through the mobilisation of multiple actors, through social capital and deliberative practices.

Because each BR offers a specific situational context, the unilateral definition of rules from a super-national authority on how to access and use natural resources may have limited effects.

It is not a desirable process either, because it limits the knowledge and experience utilised to standardised models, reducing the validity of the cognitive framework used to address local needs. This is because, where communitarian traditions are strong, disconnecting rules from

the locality, from public participation and understanding is likely to generate “community failure” (Sacchetti and Campbell, 2014). Community management and participatory solutions, moreover, support the building of deliberative skills and social capital, and are more promptly respected and enforced by communities.

The overall community resilience, however, can benefit from being positioned in a broader framework. In the case of BRs, the UNESCO MAB framework had the benefit of allowing the recognition of BRs. In the first place, the designation of a site as a BR can raise awareness amongst the local people, citizens and government authorities on environmental and development issues. Designation becomes a tool protect communities from being taken over by community failure approaches and, more positively to activate debate and therefore multiple lines of connection which can enable the development of appropriate rules, whose impacts are evaluated every ten years. Because of the three-zone scale of a BR defined in the MAB programme (Figure 1), rule definition and implementation requires governance at system level, so that multiple actors across the three different zones can coordinate and align their activities. The objective here is to align behaviours and economic activity with the values of local livelihood while protecting natural resources.

What the UNESCO MAB approach did was to provide a framework and rationale, whilst avoiding the imposition of a standard legal framework on BRs: each BR has its own system of governance to ensure it meets its functions and objectives. This is because it is believed that the management system of a BR needs to be open, evolving and adaptive in order for the local community to better respond to external political, economic and social pressures, which would affect the ecological and cultural values of the area. The global remit of the MAB programme means that the flexibility of the governance model is critical to the success of the programme given the vast range of local contexts. In Vietnam, for example, BRs are 100% core funded by Local Government, while in other countries no public funding is available.

6 Implications and concluding remarks

The UNESCO Man and Biosphere approach provides a framework and rationale for creating itineraries of awareness and endogenous development across communities. This paper has focused on the diversity of contexts, as advocated by Ostrom. Our spaces framework reflects the value of considering multiple types of interacting spaces, i.e. evolving sets of material and immaterial conditions that can hamper or enable communities, their social and natural justice.

A pre-condition to community ownership (which was explained in Table 1) is, in this sense, social capital, or the supporting values and links that determine the ability of community members to engender multi-stakeholder, deliberative and cooperative processes in search of shared development aims. Promotion of social capital and deliberation seems therefore a first step towards the creation of place-awareness (e.g. being aware of living within a BR and a specific community), leading to the endogenous determination of sustainable development strategies for both people and the environment. In terms of *relational space*, our development approach requires forms of social capital and deliberative skills amongst community constituencies that are based on cooperation, shared decision making, and mutual respect for people and nature. Cases support the idea that taking responsibility or ‘ownership’ of innovation by all participants and partners should be encouraged to enhance the understanding of sustainability principles within a BR, whilst at the same time to actively encouraging sustainability practices. This brings the community together and acts as a catalyst for the community to learn more about the BR and explore ways to benefit from the natural resources through sustainability principles.

Within the physical space of a BR, *organisational spaces*, such as those defined by social enterprises, have been presented as possible ways to organise economic activities consistently

with social and natural justice. They do so when reinvesting their surplus, as a way to reciprocate communities with the surplus produced by using BR resources. In this respect, cases illustrate that reinvestment strategies enable fragile communities to become more resilient and even thrive. The Italian case demonstrates that community owned cooperatives have revitalised public spaces, turning businesses that were previously on the verge of closing into important spaces for the community. Short supply chains and networks of local producers offer added value through distinctive products and appeal. Reinvestment therefore sustains beneficial social capital maintaining quality of life.

Complementarily, in the *policy space*, resource integration processes must acknowledge the complexity of coordinating the three-zone scale of a BR, as defined in the MAB programme at a more formal level. In this sense, rule definition and implementation requires governance at system level, so that multiple actors across the three different zones can coordinate consistently with deliberative processes within and across communities. Designation under the broader UNESCO MAB framework becomes a tool to activate debate and connections and enable the development of appropriate rules and regulations to align behaviours and economic activity with the values of local livelihood. The global remit of the MAB programme and the 10-year review process means community participation and flexibility of the governance models adopted, and is critical to the success of the programme given the vast range of local contexts. The Space Framework is an open analytical tool for capturing the complexity of interactions across different contexts.

Biosphere reserves (BR) are the physical enabling space for social regeneration and overall community resilience. However effective and resilient communities only emerge when the relational, organisational and policy spaces align with the physical space. The social enterprise (SE) model can be considered an organisational tool that facilitates social

regeneration through cooperation and reinvestment in the community. The success of this organisational space is dependent upon the strength or size of the relational space. All elements must be in synergy in order to reach a sustainable and fully competent community.

The actual working of the proposed approach calls for investigation on:

- The physical space elements of a BR
- The policy space and management of the BR
- The state of social capital within the BR
- Tools for social capital mobilisation and community engagement to build a shared understanding on BRs
- How mobilisation of social capital underpins livelihood and sustainability of BRs
- Specific organisational solutions and enterprise models that are consistent with the development of community participation and BR sustainability.

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