

CASE STUDY

"SOCIO-ECOLOGICAL SYSTEMS IN THE BIOSPHERE RESERVE LUNGAU, SALZBURG" (AUSTRIA)

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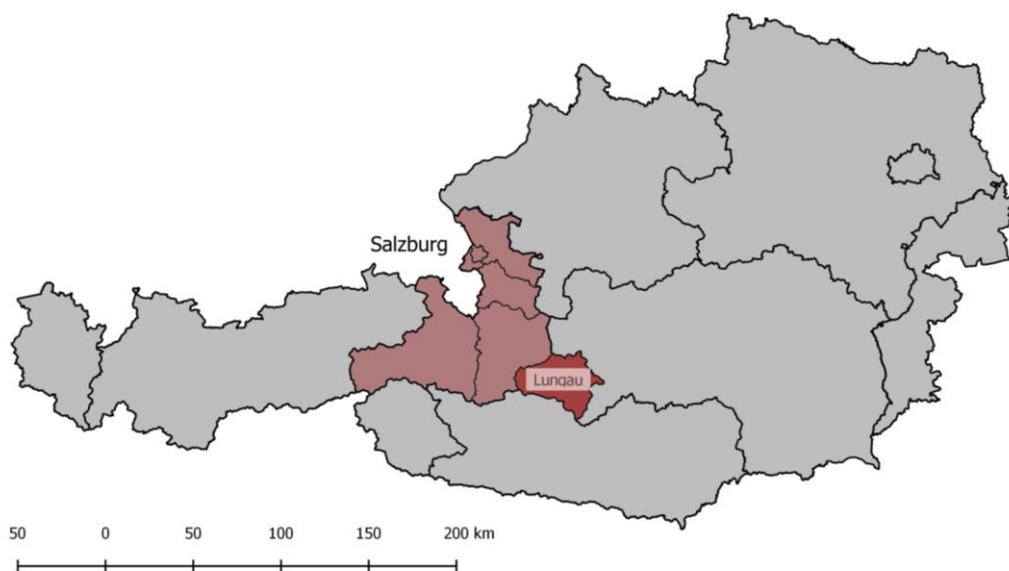
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1 Introduction

Biosphere reserves (BR) are an integral part of UNESCO’s Man and the Biosphere Programme (MAB) constituting an intergovernmental research effort launched in 1971. The fundamental idea is to study the biosphere (i.e. the geographically delineated living space), how this system is affected by the physical presence of humans and their actions and how these interventions and changes in turn affect humankind themselves (Batisse, 1982) . The aim of the MAB is to establish a world-wide network of protected areas in order to reconcile nature conservation, careful management and sustainable use of natural resources (Batisse, 1982; Schliep & Stoll-Kleemann, 2010). Institutions connected to Biosphere Reserves are outlined by the MAB Charta but remain under national sovereign jurisdiction¹.

Figure 1: Location of the case study region

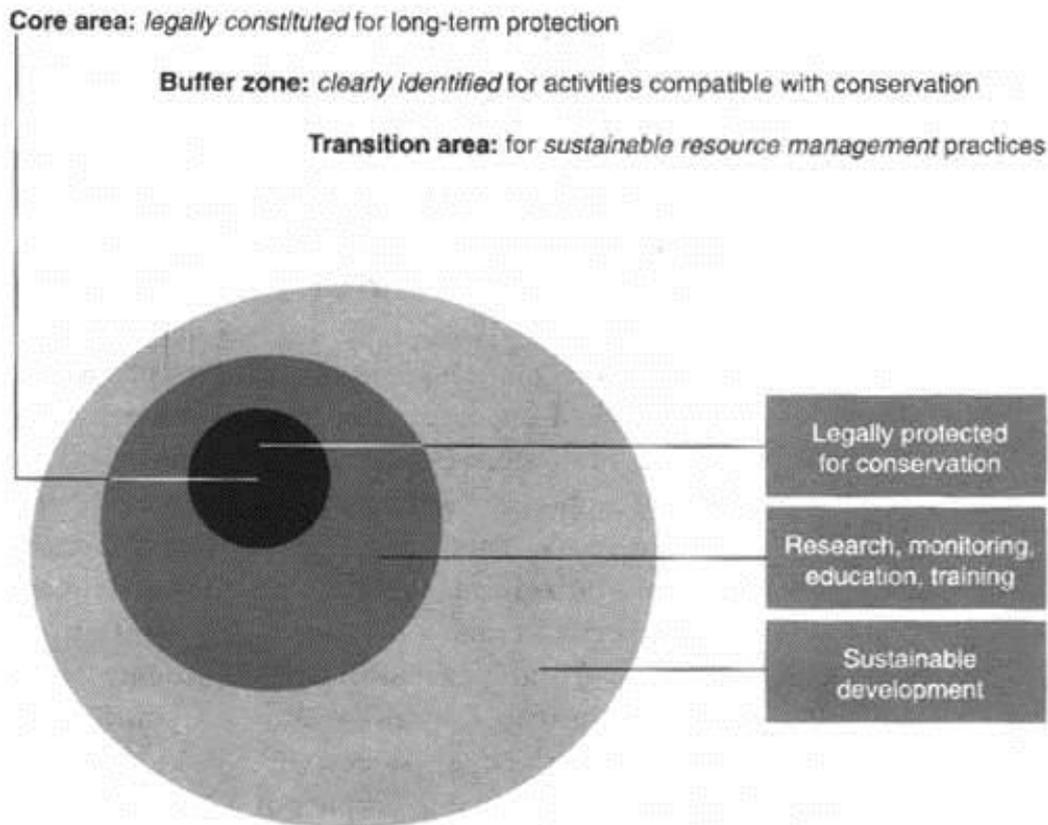


The Biosphere Reserve “Lungau & Kärntner Nockberge” covering the whole area of the case study was established in 2012. It is spread out over two federal states (Salzburg and Carinthia) and constitutes the largest of its kind in Austria. This research is limited to the Lungau part in the federal state of Salzburg. It is identical with the political district Tamsweg (NUTS 3 area AT321 Lungau). The region is a large, high plateau located in the southeast of the federal state of Salzburg and extends to just over 1,000 km² in area, at a minimum sea level of more than 1,000 meters and landlocked by the main ranges of the Central Alps. Only a very restricted share of 12% is classified as “permanent settlement area”, i.e. all areas comprising urban and built-up areas and areas considered as suitable for settlement purposes. The whole district is categorized as mountain area (as per Article 32(2) of Regulation (EU) No. 1305/2013) and almost 50% of all 786 farms (BMLFUW, 2014) are managed organically.

¹ For more information regarding UNESCO’s Biosphere Reserve please see <http://www.unesco.org/new/en/natural-sciences/environment/ecological-sciences/biosphere-reserves/>

According to the general concept of Biosphere Reserves they are divided into three inter-related “zones” (Figure 2)²: The core area is dedicated to the protection of the environment in which very restricted human intervention is permitted, the buffer zone in which sustainable land use management activities are authorized and the (mostly surrounding) transition area that entails economic zones, settlement and recreational areas (Lange, 2005; Price, 2002).

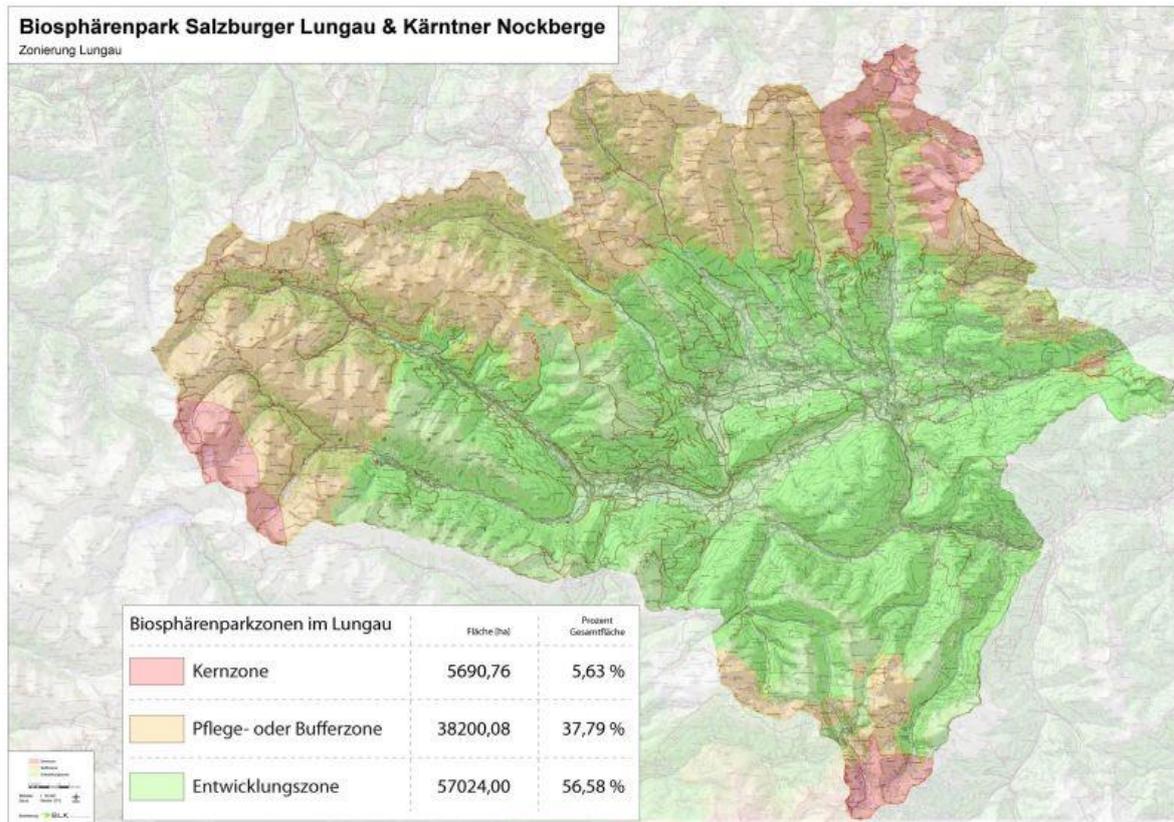
Figure 2: The Biosphere Reserve zonation system (Schaaf, n.a.)



In the case study region (i.e. Figure 3), 6% of the total area (56.91 km²) are dedicated core zones encompassing parts of the National Park *Hohe Tauern* (IUCN-category II) which includes partly Natura 2000 sites and in general comprises protected landscapes with corresponding protection regulation schemes (indicated in Figure 3 as red areas). Around 38% of the total area (382 km²) are buffer zones (yellow areas in Figure 3) while the remaining 56% of the total area (570.24 km²) are transition areas (green areas in Figure 3) (Regionalverband Lungau, 2014).

² For further information about the UNESCO’s Man and the Biosphere strategy please consult: http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/SC/pdf/MAB_Strategy_2015-2025_final_text.pdf

Figure 3: Zoning of the Biosphere Reserve Lungau



The Biosphere Reserve Lungau is a typical example of the development of specific Alpine cultural landscapes with a high environmental quality. What is particularly interesting is the large number of habitats, which have been established due to human activities along the altitudinal gradients. These cultural landscapes would inevitably disappear without the specific traditional land management systems. The mountain meadows are distinctive for this region, complemented by large areas of mostly extensively managed Alpine pastures and wetland meadows. Extensive grassland cultivation contributes to the particularly high biotope and species diversity of mountain areas (Bohner, 2010).

In the nomination document of the BR Lungau the proponents argue that *“the region has been an area of human settlement for thousands of years. The diverse structure and scenic beauty of this region are the main attractions for visitors from all over the world. The national and international interest in its distinctive cultural and natural landscape features constitutes a main economic asset of the region. The globally increasing demand for ecologically sustainable leisure time facilities and the chance to experience unaltered nature makes the region a model area for sustainable tourism, while at the same time contributes to conserving its characteristic regional features.”* (Regionalverband Lungau, 2011).

In its rationale for designating *Lungau & Kärntner Nockberge* as Biosphere Reserve UNESCO (2012) states that this region *“provides a representative example of inner-alpine landscapes with high mountains and deep valleys”*. It continues to refer to further aspects, particularly by highlighting its ecological specificity and diversity (in addition to the socio-economic features mentioned above by the nomination document): *“The site is extremely diverse: from marsh*

areas and alluvial forests in the valleys to cultivated meadows and woodland areas at intermediate altitudes, extending up to the glaciers of the Alpine summit regions". Mixed forests, a remarkable multiplicity of bogs (including Ramsar protected areas³) and the fact that it is a refuge area and habitat of diverse species (including different types of bats, many predators such as badgers, lynx and bears, bird species, etc.) all underline its ecological value.

This case study analyzes the ability of the Biosphere Reserve concept to contribute to the provision of high levels of (1) biodiversity (ESBO #11), (2) the protection of the prevailing Alpine and cultural landscape character (ESBO #14) and (3) its contribution to an active and socially resilient rural community (ESBO #19) in the case study area. Thereby, the analysis aims at understanding the ability of the Biosphere Reserve Charta to function as an Integrated Conservation and Development Project (ICDP) *"that aims to meet social development priorities and conservation goals"* (Hughes & Flintan, 2001; Worah, 2000).

³ The Ramsar Convention is an intergovernmental treaty that focuses on the conservation and wise use of wetlands and their resources. For more information, please see: <http://www.ramsar.org/about-the-ramsar-convention>



2 Definition of the social-ecological system (SES) studied

2.1 Figure of the SES

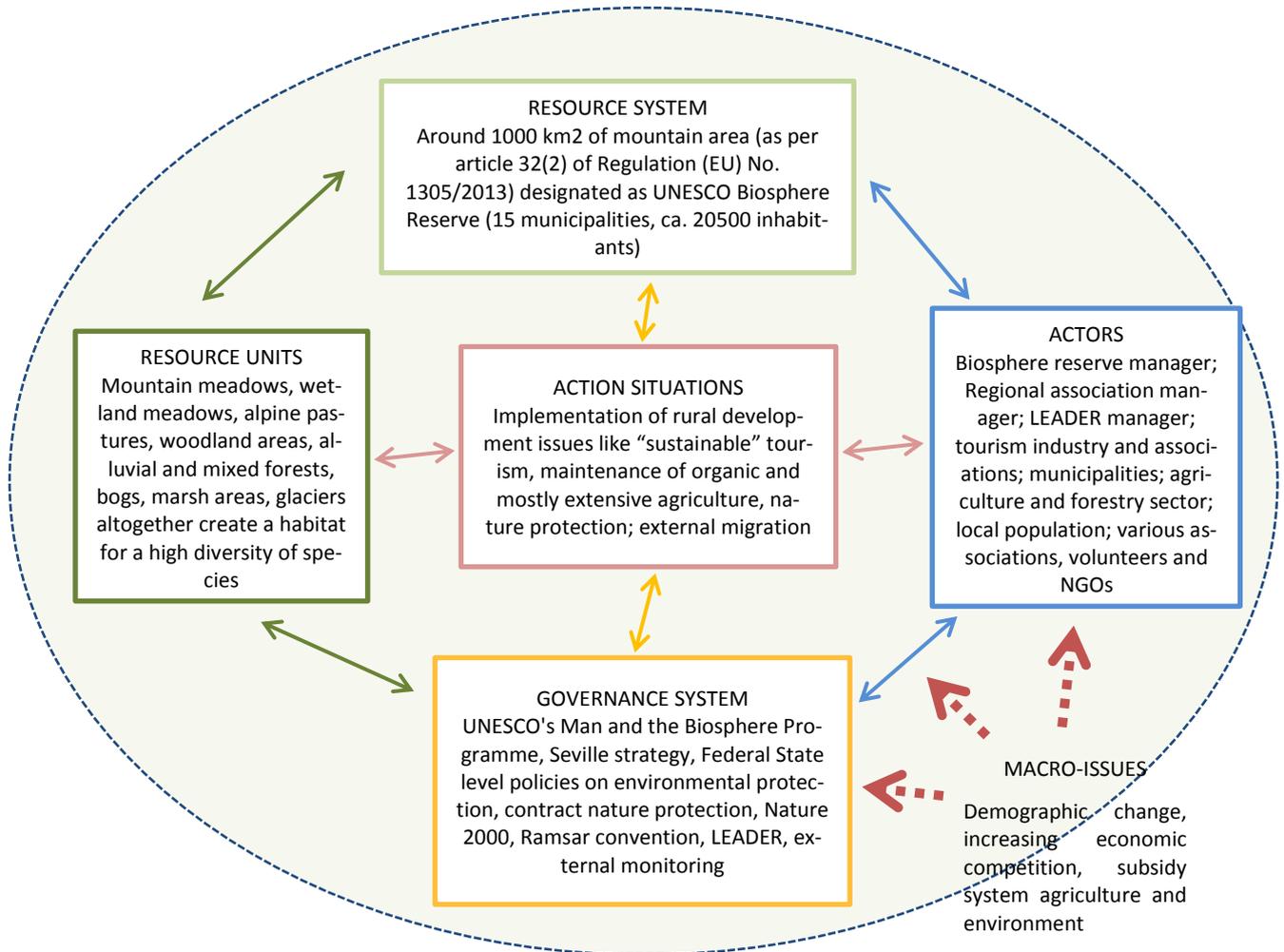


Figure 4: SES diagram of the Biosphere Reserve Lungau, Salzburg

2.2 Short characterisation of key drivers/motivations

The main drivers/motivations for the initiation and management of the Biosphere Reserve (BR) Lungau can be categorized into following groups and vary among stakeholders.

Public policy drivers:

- (i) Policies with direct impact on ESBO provision specifically include the agri-environmental measures of the RDP and Natura 2000 direct payments
- (ii) Policies with indirect focus on ESBO provision
 - 1) Article 31 “Payments to areas facing natural or other specific constraints” AND
 - 2) Article 32 “Designation of areas facing natural and other specific constraints” of the RDP

3) LEADER measures of the RDP programme

Market based mechanisms:

- (iii) Activities to meet the increasing demand for all-season domestic and sustainable tourism (FG 2-1; FG 2-2; I 2-8; I 2-9; Humer-Gruber, 2016)⁴
- (iv) Activities to meet the increasing demand for extensively and organically produced agricultural goods (e.g. strengthen distribution channels and marketing for organic meat products which is still in the process of establishing), regional product branding like for the local variety of potato “Lungauer Eachtling” (I 2-10; I 2-11; I 2-9; Humer-Gruber, 2016)
- (v) Potential for compensation for higher costs (e.g. premium prices, contract nature protection schemes) (FG 2-1; I 2-5; Humer-Gruber, 2016)
- (vi) Clear positioning and differentiation strategy through the Biosphere Reserve designation (FG 2-1; FG 2-2; Humer-Gruber, 2016)

Collective action based drivers:

- (vii) Strong regional identification and collective consciousness for natural conservation and the preservation of the typical landscapes among a significant number of stakeholders (FG 2-1; FG 2-2; FG 2-4; I 2-6; I 2-7; I 2-8, I 2-10; I 2-11, I 2-12). Yet, different and diverging views among actors concerning specific actions persist (I 2-12; FG 2-2; I 2-11; Humer-Gruber, 2016)
- (viii) Actions to make use of opportunities for scaling down the trend of out-migration of the young and reducing the risks of an aging society (FG 2-1; FG 2-2; FG 2-4; I 2-5; I 2-6; I 2-7; I 2-8, I 2-9; I 2-10; I 2-11, I 2-12)
- (ix) Actions aiming at altering the conception of a lagging region and creating momentum for positive regional change (FG 2-1; FG 2-2; FG 2-4; I 2-5; I 2-6; I 2-7; I 2-8, I 2-9; I 2-10; I 2-11, I 2-12)

2.3 Discussion of the SES

The provision of ESBOs in the case study Lungau is particularly shaped by the designation as UNESCO Biosphere Reserve (since 2012). Although this international recognition does not entail any (financial) support instrument (financial support has to come from various national authorities, e.g. municipalities or other regional development programmes, e.g. LEADER), an effective use of the BR concept requires particular management practices (e.g. zoning schemes, integrating cultural and biological diversity) that take account of the objectives of the BR and encourages an increased local involvement and engagement in scientific accompanying activities.

To enhance its goals, regional actors will continue to make use of the national framework of specific policy measures that are oriented towards “sustainable development” of land use management and regional development. The main policy instrument providing the largest share of financial support is the CAP. In particular, the high proportion of support for Austria’s

⁴ Codes refer to the origin of the information (i.e. interview, focus group, etc.) as listed in chapter 7.1

mountain areas under Pillar 2 (priorities for agri-environmental measures, continued support for organic farming, and the specific scheme for Areas of Natural Constraints (ANC) for mountain farmers) reveal the high commitment at national and regional level for securing the ESBOs linked to mountain farming and sustaining rural vitality (since long).

As the BR rationale addresses both ecological and socio-economic development targets, the local development measures that are enhanced specifically by the LEADER approach are of particular interest. Earlier focus of LEADER activities (of past programme periods, since 1995) can also be regarded as a useful background for the application and selection of the BR approach in the region. The local development strategy, now indicating its priorities under the label of the BR Lungau, thrives to combine the diverse dimensions of the BR and to address the different management opportunities in the varied zones. Participation in LEADER groups and activities in BR development are often overlapping. It should be noted that the roadmap and management plan for the BR has only been elaborated in 2012, due to lack of financial means and emerging challenges concerning consensus building among stakeholders which led to the establishment of a new BR management in 2015, implementation of specific actions are still in a starting process.

2.4 Common aims, conflicting interests and goals

Initially there was an opposition from land owners against the initiation of a Biosphere Reserve area as they saw this potentially as a mode to impinge land use rights or even expropriation (FG 2-1; FG 2-2; I 2-10; I 2-11). In particular, apprehension came from the cable car providers who perceived limitations in investment opportunities negatively impacting competitiveness as a winter sport region. Such issues were solved by excluding affected skiing areas from core and transition zones (e.g. Obertauern). All skiing areas are now located within economic zones and thus not subject to restrictions. Yet, some substantial worries with regard to the implementation of the BR concept persist. In terms of agriculture, most farmers perceive the BR as an opportunity (e.g. opportunities for regional branding, strengthening value chains, maintaining cultural landscapes, etc.) and most concerns could be refuted meanwhile through active public relations and contract nature protection schemes (e.g. core zones dispose of a premium scheme of paying 6€ per ha per annum, financed by the municipalities within the BR) (FG 2-1; FG 2-4). There are also farmers who perceive the BR as insignificant for agriculture and rather relevant for tourism and environmental conservation (Humer-Gruber, 2016).

In general, however, most stakeholders agree that there is a high level of acceptance and positive association towards the BR and its goals. This positive assessment is not shared by a small group who are seen primarily as “observers” of the BR implementation process (Schmidjell, 2014; FG 2-1; I 2-10; I 2-11; I 2-12).

With regards to the implementation of projects originating from personal involvement, stakeholders often report the lack of financial support, of risk sharing instruments and network coordination. *“This [financing opportunities] was always difficult, this is where I failed completely”* (I 2-11). The lack in financial support is perceived as a major obstacle in the realization process often leading to frustration among participants and stagnation (I 2-10; I 2-11; I 2-12).

Some stakeholders argue that the integration of the BR management into the regional association (i.e. an organizational structure of the municipalities within the BR dealing with all BR



related matters) concentrates decision making power (e.g. of mayors) fostering a strong perception of a top-down approach. Since this is a common issue, it is currently debated to separate the two management organisations and to establish an autonomous limited liability company (Schmidjell, 2014; FG 2-2; I 2-10; I 2-11; I 2-12).

3 Status of the SES and potentials

3.1 Description of the SES

There is a strong link between mountain farmers and the preservation of the natural and cultural landscape and tourism. In particular, summer tourism depends on a cultivated and high aesthetic value of diverse landscapes. A successful tourism destination increases employment opportunities and creates spill-over effects (e.g. regional building industry, reinforcement of regional supply chains, advertising and selling regional products, a process that has already started with the opening of specific shops in the district capital).

Thus, it is important to emphasize that, because of its peripherality and history, social and economic subsystems of the BR Lungau strongly rely on natural resources and heavily depend on the maintenance of good environmental conditions.

There are tensions between professional associations like the Regional Association and the Chamber of Agriculture or the Chamber of Commerce which pursue their particular (sector or spatial) interests and represent the official part of the district of Lungau and a small group of active NGOs (representing social actors as well as dedicated farmers) which aim for an alternative way of life within Lungau. Some of these NGOs have played a crucial role in proposing the concept of the BR in the region and their views on regional development options are very much in line with the official objectives of the BR.

3.2 Relationships between farming and forestry, and the quantity and quality of ESBOs

In the case study region, most farms are diversified including management of diverse parts of agricultural areas, pastures and forestry areas (see Table 1). The contribution of farming and forestry to the provision of ESBOs (e.g. biodiversity, cultural landscape, rural vitality) is significant especially since 50% of all 786 farms within the region are managed organically (BMLFUW, 2014) and given that, well managed extensive farming activities on grassland, meadows and pastures (e.g. grazing) are necessary for the maintenance of typical Alpine and cultural landscapes with a small structured mosaic of habitats and an abundance of species (Pötsch et al., 2012). For example, one study shows that, due to farm abandonment in the region, the number of species decreased within 9 years from 48 to 23 species reducing the level of biodiversity dramatically (Buchgraber et al., 2010). Hence, a small structured, well maintained and versatile cultural landscape is an important asset that reflects the rural identity and feeds into other rural sectors (e.g. tourism) (Strasser, 2014). Therefore, it is in the interest of society at large to support extensive, site-specific agricultural practices in mountainous areas in order to maintain the non-replaceable public good “typical Alpine and cultural landscape”, high levels of biodiversity as well as an intact environment that permits the production of high quality foodstuffs (Buchgraber et al., 2010).



Table 1: Agricultural and forestry area (ha) in Lungau (BMLFUW, 2014)

	Number of farm units	UAA (excluding alpine pastures) (ha)	Alpine pastures (ha)	Forest area (ha)
Forestry enterprises	130	1120	2219	6429
Conventional	70	385	1701	3283
Organic	60	735	518	3146
Animal husbandry	570	7933	5225	9646
Conventional	250	2879	935	3059
Organic	320	5054	4290	6587
Mixed farms	12	97	111	123
Conventional	9	55	86	60
Organic	3	42	25	62
Horticulture farms	73	192	4509	247
Conventional	66	52	4509	242
Organic	7	140	0	5
Processing enterprises	1	10	0	16
Conventional	0	0	0	0
Organic	1	10	0	16
Total	786	9352	12064	16461
Conventional	395	3371	7231	6644
Organic	391	5980	4833	9817

3.3 Key motivational, institutional and socio-economic factors

BR Lungau is an area with a declining population facing in particular out-migration of young people. Due to a high birth rate, for a long time the highly positive natural balance compensated for losses of population numbers and resulted in an increase of the total population until 2001 (Dax et al., 2016, 23). Only since then the strong out-migration (and reduced natural balances) also lead to a decreasing total population in this region. It was often mentioned by stakeholders that the officials of the region have to act now to work against demographic change and this unfavourable development (FG 2-1; FG 2-2; I 2-5; I 2-6; I 2-7; I 2-8; I 2-9; I 2-10; I 2-11; I 2-12). Lungau has no heavy industries, employment opportunities are mainly in the service sector, small and medium enterprises and farming (FG 2-1, FG 2-2: I 2-5; I 2-9). The development trajectory of the region according to the aims of the BR provides an opportunity to the region to create a spirit of optimism and to strengthen regional identity. Moreover, the presentation as a BR also reinforces its unique characteristics.

The main challenge of the BR is to bring together the diverse interests of different stakeholders and start a more open communication. The BR is in need of small-scaled actions, which nevertheless are of specific value for the local population and refer to the objectives and development perspectives of the BR.

3.4 Levels of provision, trends and determinants

In order to better understand the impact of human intervention on the environment, it is necessary to look back at fundamental aims and concepts and make use of reliable indicators. For this reason, the Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management published a report summarizing a vast array of various biodiversity indicators applicable to Austria (BMLFUW, 2010). Prior to use, each of the indicators needs to be thoroughly tested for site-specific relevance, applicability, sensitivity and plausibility.

Such an assessment has already been done in the part of the BR Lungau & Carinthian Nockberge which is situated in Carinthia. The methods applied there constitute a useful attempt to develop a bundle of indicators for monitoring purposes (e.g. societal developments, economic development, ecological developments and management activities) that could be applied to the BR Lungau context as well (Köstl & Jungmeier, 2012). This provides insights into following questions:

- What is a useful level(s) of ESBO provision, assessment of land management state, social aspects and trends to make significant judgements on the present state of provision and conclusions for future changes?
- How to achieve substantiated judgement on the appreciation and demand side of ESBO provision: assess the appreciation and, as far as meaningful, the value of ESBOs; link measurement of value to different groups (e.g. producers, agri-business, tourism operators, community, users, wider society)?
- How to identify the main determinants for improvements in ESBO provision and key limitation factors.

3.5 Relevant governance arrangements and institutional frameworks

Relevant governance arrangements can be identified on a global, European, national, Federal State, district and local level. The different levels are of diverse influence, but should be kept in mind when analysing the arrangements of governance and the implications on ESBOs provision as only the complex mix of all actors allows capturing the whole range of relevant influences.

The overarching arrangement and framework levelling the playground is the UNESCO's MAB concept whose goal is to foster both environmental conservation and social development objectives (Batisse, 1982). Relevant policy instruments are CAP pillar 1, the Area of Natural Constraints Scheme (ANC), agri-environmental measures and LEADER measures of the CAP pillar 2 (RDP), Natura 2000 legislation, contract nature protection schemes and zoning arrangements. The substantial threat of farm abandonment in mountain areas has been addressed by some of the pillar 2 measures, however with limited effects. In the region (as in many mountain regions of Austria) the strong focus on agri-environmental support has to be regarded as most influential. For a detailed breakdown of the agri-environmental measures relevant in the case study region see the following Table 2. There are however concerns that



decreasing levels of funding for agri-environmental measures in Austria might pressurize farm management in mountainous areas and the provision of ESBOs (Pötsch et al., 2012) in regions like our case study.

Table 2: Agricultural Areas supported by agri-environmental measures in the study area (BMLFUW, 2014)

#	Measures	Number of farm units	Area (ha)	Percentage of relevant area*
1	Organic farming	384	5598	59,9
2	Environmental sound management of arable and grassland surfaces (UBAG)	281	2667	28,5
3	Renunciation of the use of yield-increasing inputs on arable land	89	69	0,7
4	Renunciation of the use of yield-increasing inputs on arable land dedicated to green forage and on grassland	256	2328	24,9
5	Abstention from the use of fungicides on grain-growing land	6	28	0,3
15	Mowing of steep surfaces	516	1497	16,0
16	Management of mountain meadows	16	23	0,2
17	Alpine pasture and shepherding	302	10639	88,2
19	Greening of arable surfaces	319	812	8,7
25	Low-loss application of liquid organic fertilizers and biogas manure	3	2056	22,0
28	Nature conservation measures	310	1429	15,3
*in relation to the total UAA (excluding alpine pastures). Except measure 17 which considers total alpine pastures (ha) as reference.				

The regional association, the BR manager and the LEADER manager play a central role in the governance of the BR Lungau. They decide on activities and coordinate them, distribute funds, apply LEADER measures and act as contact persons, internally and externally (FG 2-1; FG 2-2; I 2-10, I 2-11). Yet, the priming for the BR application process was initiated by a (small) local women's network (FG 2-2; I 2-10; I 2-11). Through significant volunteer work and public relation, they were able to convince a critical mass about the advantages of such a designation. The 14 municipal mayors of the district Lungau, at that time took up the initiative and set up a regional association entrusting it with the further development. While local volunteer organizations were initially excited they soon felt left out. This shift in decision making power reflects the changes in the responsibility for the preparation process when many local participatory action group members felt excluded and eventually resigned from further engagement in the regional discourse (FG 2-2; I 2-10; I 2-11; Humer-Gruber, 2016).

4 Conclusions derived from analysis in Steps 1 and 2

4.1 Key findings on the particular SES and its potentials

- The discussion on BR establishment focused on the quality of ESBO provision, and the reliance on a specific land management system as well as the economic benefits.
- There are divergent views on the role of the BR among actors as to what constitutes the main goals of the BR (conservation versus development).
- The contribution of farming to the provision of ESBOs (biodiversity, cultural landscape, rural vitality) is significant, taking into account the substantial role of organic farming in the region.
- The main challenge of the BR is to bring together the diverse interests of different stakeholders and start a more open communication and a more participatory process.
- The awareness on BR status is still limited within the local population, but it is a main goal of the BR-management to improve public relation and thereby increase the level of consciousness.
- As a result, appreciation of ESBOs in the region is varied between different stakeholders and is seen to hold a particular potential for health-related ESBOs (e.g. air quality, health and social inclusion) etc.
- While there is a lot of potential for participatory actions, funds are limited to put them into practice.
- So far indicators for the various ESBOs are not fully developed and will be improved over the next years due to an effort of the BR regional managers.

4.2 Governance arrangements and institutional frameworks

As outlined above, the region is a characteristic example of a mountain area, highly dependent on its natural resources and the recognition of natural amenities as a core asset for regional development. This is reflected since long in the elaboration of appropriate policy instruments and the use of national and (later) EU programmes to address the concerns of securing extensive land management systems in this environment.

The most enabling factors for the BR had been the initial engagement of local action groups. Through significant volunteer work and public relation, they were able to convince a critical mass about the advantages of the BR-designation. But there were some controversial discussions with the traditional elites of local politics (e.g. mayors and tourism managers) how these new ideas could be best integrated into local structures and the regional economy. While local action groups were initially excited, they soon felt left out. As a result, there was a shift in decision making power from locally engaged NGO-groups to traditional political structures which could be also interpreted as an adaption to the socio-political conditions in the region.

Strength:

Generally, the BR concept offers ample room for participation and open discussions which could potentially positive impact on ESBOs provision.



Weakness:

Due to the partial retreat of NGOs and local actors, the regional association, BR manager and the LEADER manager try to balance the different interests. But economy related aspects increasingly prevail over conservation interests. In addition, a lack of funding opportunities for actions weakens the degree of participation, as many actors see their time and efforts not efficiently supported.

The core role of agri-environmental measures (in the mountain context of this region) has been presented above. While this financial support is esteemed to play an important role for the sustainable and environmentally friendly development of agriculture (e.g. high level of organic farming) it also has implications for the pluri-economic activities in the region (e.g. eco- and agro-tourism). Moreover, the application and support of other RDP measures add to the high support of agri-environmental measures and provide further incentives for diversification and sustain rural vitality measures. The 2014 CAP-reform didn't change the situation significantly because most of the existing measures which predominantly concerned grassland areas were taken over (with some adaptations) by the new programme.

4.3 Other enabling or limiting factors

Public support is important for the provision of ESBOs (support to organic and sustainable agricultural practices, use of genetic resources, on-farm tourism, local processing and direct marketing etc.).

The BR as such does not include financial support instruments and therefore depends on third parties like the Federal State of Salzburg. However, BR funding is not sufficient to meet all objectives of the various actors (including tourism) and thus leading to tensions and stagnation.

Another enabling factor could be the valorisation of ESBOs through health and sustainable tourism. Initiatives for health tourism are spreading all over the Alpine regions, and a specific workshop to assess the "Healing powers of the Alpine area" specifically addressed the issue in April 2016 (UNESCO Biosphärenpark Lungau, 2016).

4.4 Reflections on the case study methodology used and potential improvements

The SES framework was applicable to this CS. Particularly the work on subsystem variables was time consuming and at times the level of details was difficult to convey to stakeholders. Similarly, the responses of stakeholders were very detailed and specific which resulted in problems to attribute them to the framework and, quite often, addressed issues which seemed to go beyond the scope of the framework.

If next steps require further stakeholder interactions, it will be necessary to offer more direct benefits to interviewees and regional actors in order to keep them engaged. Therefore, the study would have to concentrate on / "translate" the framework and action linkages to actual problems of the BR management. Thus there might be less common ground for a standardized methodology and stronger pressures for deviations from the template.



5 Research and action mandate for Steps 3 and 4

5.1 Agreed objectives of activities to be undertaken with initiative/stakeholders

Stakeholders and interviewed experts were interested in the issue whether the socio-ecological analyses and the socio-economic perspective could bring up new aspects and elements that could align public participation, economic interests and the provision of ESBOs. In addition, they were highly interested how this discourse could aid in balancing these often diverging interests in a practical way at regional level. Main questions for an in depth analysis could be:

- How to find additional supportive links between the ESBOs and the local economy (mainly agriculture and tourism)?
- How could supportive measures be envisaged to raise the awareness and consciousness concerning the ESBOs within the BR area and reflecting the objectives of the BR concept, and how to rejuvenate the engagement of local action groups?
- Are there other interested parties (e.g. educational organisations, universities and scientific organisations, health related organisations, tourists themselves) internal and external to the BR Lungau whose engagement could bring along amendments to the regional strategy and implementation plan and how these could contribute to positive changes (e.g. enhanced provision of ESBOs) in the regional activities.

5.2 Innovations, impact, transferability, potential risks and research bias

Though stakeholders were interested in the analysis and in the special socio-economic and socio-ecological perspectives connected with the questions and issues raised, they also conveyed the impression that to some extent for future interviews and focus groups there would be limited time left. Therefore, if stakeholder involvement is required some clear benefits for the stakeholders would have to be offered.

The case of BR is a core concept of “balancing” social, economic and environmental needs, particularly relevant in mountain areas. A thorough investigation of its relationship and consideration of “sustainable development” orientation and achievements due to the BR concept might contribute an innovative contribution to the mountain development discourse. In particular, transferability of this kind is sought by a present comparative study of the Mountain Research Initiative in order to “measure” the progress of specific regions (situated in different continents) towards Sustainable Mountain Development. As quantification poses severe problems and fails to address the main lessons of BR the focus is in public participation and processes how to orient local decisions and partner actions towards stronger effectiveness with regard to sustainable development.

6 References

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7 ANNEX

7.1 Documentation of research and action progress

- Focus group 2-1: Regional manager, Biosphere Reserve manager, LEADER manager, 11. 12. 2015, Mauterndorf
- Focus group 2-2: Chairman of association ARCHE Lungau and Chairwoman of development association Biosphere Reserve Lungau, 11. 12. 2015, Göriach
- Interview 2-3: Scientific expert, Austrian Academy of Sciences, 01.03.2016
- Focus group 2-4: Representative of the Federal State of Salzburg responsible for BP, representative of the Federal State of Salzburg responsible for environmental conservation and environmental management, 13.03.2016
- Interview 2-5: Representative Agricultural Chamber, Lungau, 16.03.2016
- Interview 2-6: Regional manager, Mauterndorf, 16.03.2016
- Interview 2-7: Biosphere Reserve manager, Mauterndorf, 16.03.2016
- Interview 2-8: Representative of BR Forum culture in Lungau, Tamsweg, 17.03.2016
- Interview 2-9: Representative of the Chamber of Commerce, Lungau, Tamsweg, 17.03.2016
- Interview 2-10: Representative of the women's network Lungau, Tamsweg, 18.03.2016
- Interview 2-11: Representative of the initiative herbs of Lungau, Tamsweg, 18.03.2016
- Interview 2-12: Former BR manager, 14.06.2016

