

Conflicts and Opportunities for Regional Development arising from the Designation of Protected Areas – the Example UNESCO Biosphere Reserve Bliesgau

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1 Introduction to the thematic fields

The rural environmental resources have to be rescheduled in an ever-changing global context and in international networks. Furthermore, the effects of exploiting 'environmental capital' to advocate economic development are an important pillar of sustainable rural development.

The interaction of exogenous and endogenous actors, responsible for designating and managing protected landscapes, the possibilities of exploiting these areas to promote sustainable tourism and initiatives of an 'eco-economy' are the subject-matters of the following article. The focus is on the conflicts and opportunities for regional development arising from the designation of protected areas. To explore the complexity of problems within this theme, the example UNESCO Biosphere Reserve Bliesgau will be used.

Sustainability has recently been used for legitimising unbridled economic growth, industrial expansion and globalisation, the protection of biodiversity, maintenance of ecosystems, social justice, peace and the elimination of poverty (BOWLER et al. 2002, p. 5). At the very least, this suggests a paradox as sustainable development is considered to support both the maintenance of the status quo and radical change (ROBINSON 2008). Against this background, BROWN (2001) promotes a radical change and suggests the idea of an environmentally sustainable economy. An 'eco-economy' is defined as an environmentally sustainable economy characterized by the framework for the formulation of economic policy established by the principles of ecology as well as by economists and ecologists working together in order to shape it (BROWN 2001, p. 4). According to BROWN, ecologists and economists working together can establish and form an eco-economy sustaining progress (KRISZAN et al. 2010, p. 4).

The close spatial connection between agriculture and a UNESCO biosphere reserve causes a variety of conflict situations. The economic development and thus the further growth in the region accompanies the effort concerning the recognition of the biosphere reserve according to the international guidelines of the UNESCO, which mean restrictions using large parts of the protected area. In such a nature protection area the current ecological condition cannot be allowed to deteriorate and the environmental quality should be conserved.

Use restrictions on forestry and agriculture affect these economic sectors. Generally they mean both a quantitative reduction of production space and a constraint of agriculture products as well as qualitative reduction of the production basis (KLEIN 1996, pp. 89-90). These restrictions lead to a conflict that must be recognized early to offer appropriate conflict resolutions. A conflict in regard to nature protection is understood as an interaction process that begins with a triggering incident, ends in temporary or permanent results and in addition, has long-term effects (see Fig. 1). This understanding of conflict gives important insights into the conflict management in practice. The analysis of the mutual activities makes it possible to explain the development process of a conflict and the reasons for its escalation. The conflict management from this perspective is an integral part of conflict resolution. It begins with the emergence of the conflict. Conflict resolution

thereby stands for a range of intervention measures being used to limit conflicts, conflict management and control as well as conflict prevention (GLASL 1999).

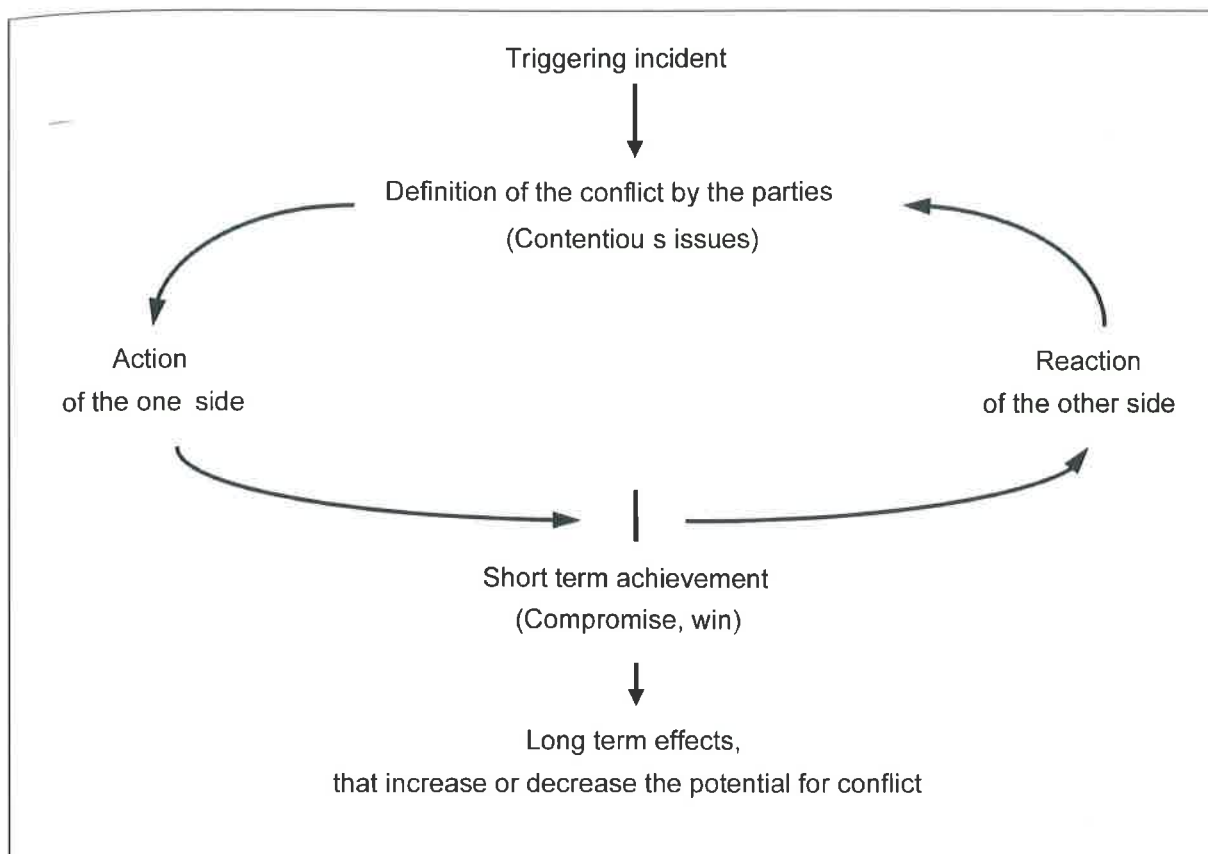


Fig. 1: Conflict as a process

Source: translated according to BERKEL 1997, p. 40 and ZIENER & BRANDENBURG 2007, p. 544

The concept of 'biosphere reserve' is a tool that must be located between conservation and economic development, as it promotes a sustainable regional endogenous development and takes the holistic economical, socio-cultural, political, environmental and democratic rights into account. It is an environmental and economic conversion of a region in keeping with the continued development and adaptation to modern realities rather than a traditional conservation of economic systems (BRODDA 2002, p. 21, see also ERDMANN et al. 1998).

The use of protected areas as tools for regional development not only requires the acceptance of the affected population and stakeholders but depends on knowledge of what attitudes and expectations rule in a protected area (MOSE 2009, p. 10). Accordingly, the following identification of conflicts in the Biosphere Reserve Bliesgau is very important for the further development of the UNESCO Biosphere Reserve Bliesgau in Saarland, Germany as well as for establishing and developing other new biosphere reserves.

2 Background of the research and methodology

The subject matter discussed in the article presents research results in the UNESCO Biosphere Reserve Bliesgau, which were obtained within the work package 'Environmental capital and sustainable rural development' in the DERREG project (Developing Europe's Rural Regions in the Era of Globalization) funded by the EU Seventh Framework Programme (FP7). The work package examines – corresponding to the DERREG project proposal – how rural environmental resources have to be resche-

duled in an ever-changing global context and in international networks. Furthermore, it sheds light on the effects of exploiting 'environmental capital' to advocate an economic development, in terms of an 'eco-economy', being a pillar of sustainable rural development (DERREG CONSORTIUM 2008).

The interaction of exogenous and endogenous actors, responsible for designating and managing protected landscapes, the possibilities of exploiting these areas to promote sustainable tourism and initiatives of an 'eco-economy' are the subject matters of our research in Saarland. To explore these tasks, the example of the Biosphere Reserve Bliesgau was used as the case study region.

The following research results are based on expert interviews with key actors, who were directly or indirectly involved in the development process of the Biosphere Reserve Bliesgau. To answer the research questions briefly introduced above, the guideline for interviews contained two parts. In the first part of each expert interview general questions were posed concerning the environmental situation, problems and conflicts, as well as regional capital and the development in Saarland. The second section addressed topic-related questions concerning the designation of the Bliesgau area as a biosphere reserve by the UNESCO. In connection with the Biosphere Reserve Bliesgau the following topics were analysed:

- Improvement of the ecological situation in Saarland.
- Development of sustainable tourism.
- Development of sustainable agriculture and forestry, as well as the regional marketing of agricultural products.
- Contribution of the Biosphere Reserve Bliesgau to the promotion of environmental protection.
- Contribution of the Biosphere Reserve Bliesgau to emphasise the topics of climate change or biodiversity.
- Management in the Biosphere Reserve Bliesgau.
- Networking of actors in the Biosphere Reserve Bliesgau.
- Measures in the fields of public relations in the Biosphere Reserve Bliesgau.
- Contribution to environmental education of the Biosphere Reserve Bliesgau.

Within the framework of the research, expert interviews were conducted with twelve representatives of different institutions in Saarland in the period from 26 November 2009 to 15 December 2009. Due to the targeted diversity of the experts, governmental as well as non-governmental institutions were involved. Furthermore, organizations were contacted whose opinions concerning the Biosphere Reserve Bliesgau differ in public.

The interviewees held leading positions in the institutions included and therefore represented important sources for acquiring information within the research context. According to the guidelines, all interviews were recorded with the respondents' consent; the semi-standardised expert interviews took one to two hours on average. To protect the intended, but also desired anonymity of the informants, their literal statements and their statement given in their general sense were encoded and given internal codes in the article.

To understand the individual statements better in connection to the involved institutions, the interviewees are divided into three groups. So it is possible to assign the opinions (logically or literally translated into English) to the concrete types of institutions without infringing personal data protection. Therefore, the following groups of respondents result from this approach (and the internal codes of the experts):

- Administrative level – five representatives interviewed (5ADL)

- Representatives of agriculture – three representatives interviewed (3AGC)
- Companies and other institutions – four representatives interviewed (4COI)

Besides this research framework, a workshop with local and regional stakeholders was organised on 13 January 2011, which 12 people from all three sectors (ADL, AGC and COI) participated in. During this workshop the key questions on the impact of the UNESCO designation compared to the research results were discussed. The remarks regarding the research findings will also be presented in this article.

3 The UNESCO designation of biosphere reserves

The United Nations Educational, Scientific and Cultural Organization (UNESCO) is responsible for biosphere reserves worldwide in line with the 'Man and Biosphere' (MAB) program to preserve typical landscapes. In 1970, this program was initiated by UNESCO as an international and interdisciplinary scientific program. It is the task of the MAB program to develop a basis for sustainable use and the effective conservation of the biosphere's natural resources, internationally coordinated and at a national level, and to implement it in an exemplary way (UNESCO 1972). In 1995, the Sevilla Strategy for biosphere reserves was passed and published in 1996. Since then, the areas acknowledged by UNESCO have been regarded as an important instrument worldwide in order to exemplarily develop, test and implement sustainable use in an international network (SAHLER and SCHREIBER n.d., p. 4). In Sevilla, the UNESCO general assembly established the 'Statutory Framework of the World Network of Biosphere Reserves' and defined the biosphere reserve as follows: "Biosphere reserves are areas of terrestrial and coastal/marine ecosystems or a combination thereof, which are internationally recognized within the framework of UNESCO's programme on Man and the Biosphere (MAB), in accordance with the present Statutory Framework" (UNESCO 1996).

As of June 2010, the UNESCO list of biosphere reserves included 564 model landscapes in 109 countries (UNESCO 2010a). In Germany, there are 15 territories protected as biosphere reserves, which all in all cover about three percent of the total area of Germany (excluding maritime territory). These 15 areas represent important German landscape types and the variety of habitats of biota in Germany. Most of the biosphere reserves are used for agriculture as cultural landscape. Nearly all of them are in rural areas and need strategies for the future to deal with demographic change (UNESCO 2010b). In 1979, the first two German biosphere reserves (Flusslandschaft Elbe and Vessertal-Thüringer Wald were designated). The latest German reserves are Bliesgau and Schwäbische Alb which were declared as UNESCO Biosphere Reserves in 2009 (UNESCO 2010a).

4 Significance of biosphere reserves

The significance of biosphere reserves is reflected in its duties and responsibilities. According to the Sevilla Strategy, biosphere reserves are not supposed to become closed systems of sustainability: "Rather than forming islands in a world increasingly affected by severe human impacts, they can become theatres for reconciling people and nature, they can bring knowledge of the past to the needs of the future, they can demonstrate how to overcome the problems of the sectoral

nature of our institutions. In short, biosphere reserves are much more than just protected areas" (UNESCO 1996, p. 5).

Compared to other large nature reserves such as National Parks and natural preserves, the functions of biosphere reserves are more sophisticated and complex. While the concept of National Parks is focussed on a classic local or regional sustainable conservation, biosphere reserves should develop integrated holistic sustainability concepts, which include protecting the ecosystem and genetic resources, sustainable land use and even integrating settlements. In addition, environmental research, observation and education should be launched to achieve higher relevance of the cultural landscape protection according to the principles of social, economic and environmental sustainability (KÜHNE 2010, p. 27; KÜHNE 2003 and KLEIN 1996) as well as integrating participative activities.

Biosphere reserves become an instrument of regional development by using bottom-up processes and promoting regional advancement of economic and social development potentials.

In conclusion, conformity with the Seville Strategy is reflected in specific tasks, such as cooperating with the local population, observing human-environment-relations as well as generating and implementing policies for the protection, care and development of nature and landscape. All of the latter highlight the significance of biosphere reserves, which are generally divided into three zones. In the process, specific tasks fall to these individual zones:

1. The **core zones** should develop with substantial exclusion of human impact. They serve as comparison space to scientific research concerning the relationship between man and environment. An entry as nature reserve is required.
2. The **buffer zones** serve as areas of environmentally-friendly use of conservation and cultivation of ecosystems that originated from or were affected by human utilization. Placing them under protection as a nature or landscape reserve is recommended.
3. The **transition zones** represent the population habitat with its various functions such as working, living and relaxing. Sustainable economic activity should unfold in these zones of sustainable use and development (KÜHNE 2010, pp. 27-28)

With the Madrid Action Plan 2008, the concept of biosphere reserves was further developed. According to this, biosphere reserves are not conventional sanctuaries, such as national parks, but rather follow an integrated approach which involves and focuses on a person and does not only allow but promote the sustainable use of resources (STOLL-KLEEMANN 2010, p. 19).

5 The Biosphere Reserve Bliesgau

Located in the Southwest of Saarland (see Fig. 2), the Biosphere Reserve Bliesgau borders on Rheinland-Palatinate in the East and on Lorraine in the South and Southwest. It includes 36,152 ha with currently 111,000 inhabitants. Six communities of the Saarpfalz district (one of them only in part) and the community of Kleinblittersdorf of the regional district Saarbrücken belong to the reserve.

The Biosphere Reserve Bliesgau is characterised by its distinctive landscape including rolling hills, large orchards and shell-limestone grounds in the South and new red sandstone in the North. The northern part of the reserve is more densely wooded than the pedologically and climatically advantaged South. The less industrialised South is more sparsely populated while the two northward regional centres, St. Ingbert and Homburg (partly included in the reserve), form an urban

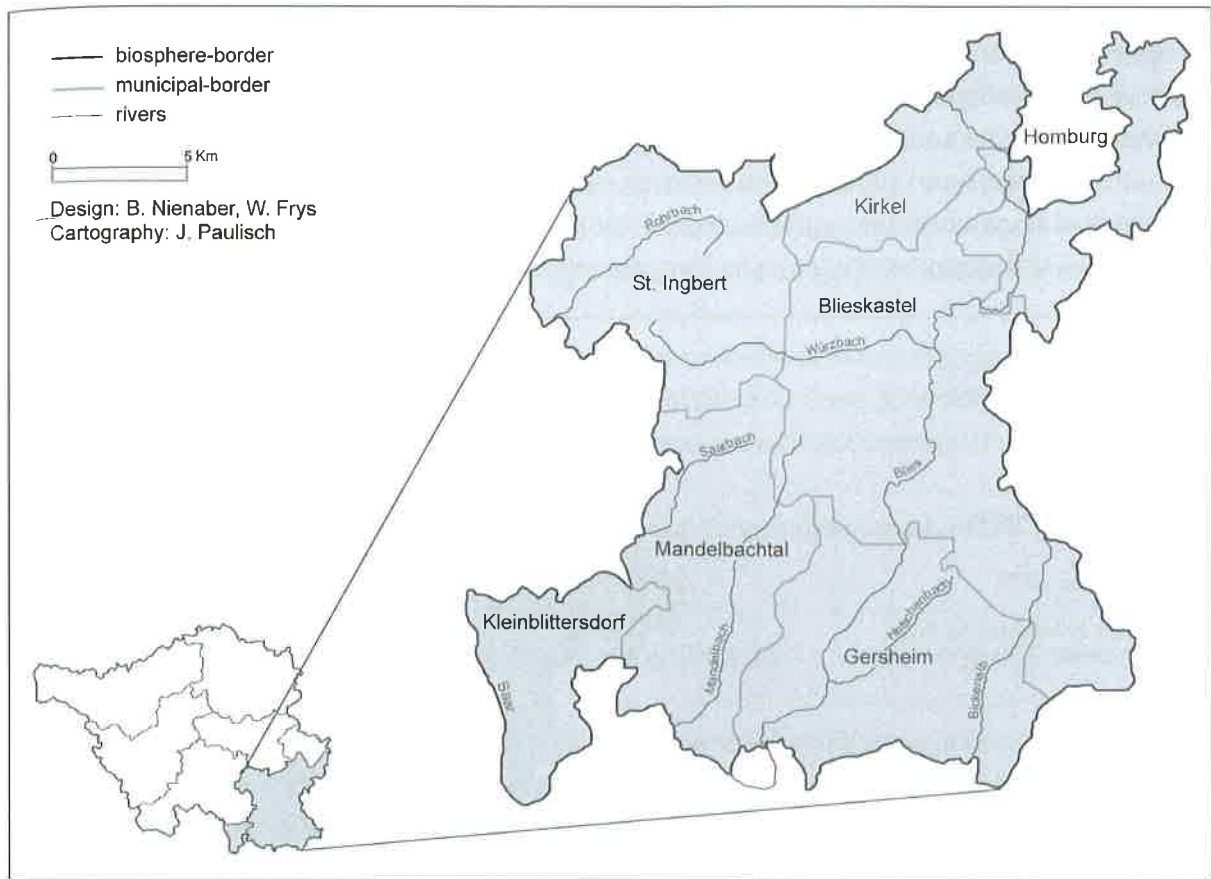


Fig. 2: The case study region Saarland (small picture) and the case study area Biosphere Reserve Bliesgau

Source: own graphic

area with up to 746 inhabitants per square kilometre (in the city of St. Ingbert). The southern part of the biosphere reserve, which is the core area due to natural geographical conditions, is characterized by low population density and is agriculturally dominated: 120 inhabitants per square kilometre (municipality of Gersheim), 197 inhabitants per square kilometre (Mandelbachtal) and 203 inhabitants per square kilometre (Blieskastel) (KÜHNE 2010, p. 28 and STATISTISCHES AMT SAARLAND 2010).

In addition to the northern part, the more sparsely populated south-eastern part was identified as a rural area in the regional development plan of the Saarland (SAARLAND – DER CHEF DER STAATSKANZLEI DES SAARLANDES 2006, p. 978). Furthermore, the biosphere reserve (excluding the urban quarter of St. Ingbert Mitte) is basically congruent with the LEADER region Biosphere Reserve Bliesgau (LAG BIOSPHÄRENRESERVAT BLIESGAU 2007, p. 2). Nevertheless, the biosphere reserve with its average population density of over 300 inhabitants per square kilometre is among the most densely populated biosphere reserves in the world (SAARLAND – MINISTERIUM FÜR UMWELT, ENERGIE UND VERKEHR 2009) and the only one in Germany with an old industrialised part (the city of St. Ingbert).

Including densely populated urban quarters in the biosphere reserve is an exceptional feature. The focus of the biosphere reserve is on exemplary development of the urban-rural-relationships. According to the general purposes of biosphere reserves its goal is to develop a worldwide model region of sustainable economy including sustainable settlement development adapted to the objectives of regional planning (TAURUS-INSTITUT AN DER UNIVERSITÄT TRIER & KERNPLAN GmbH 2007, p. 1 and SAARLAND – MINISTERIUM FÜR UMWELT 2004, p. 40).

The core zone of the biosphere reserve which is a conservation area includes 10 subareas with an area of approx. 1,109 ha that is approximately 3.1 percent of the total area of the Biosphere Reserve. Unlike other biosphere reserves, there is no coherent core zone in the Biosphere Reserve Bliesgau. The buffer zone contains approx. 7,033 ha, thus about 19 percent of the total area. Existing nature reserves and conservation areas, documented FFH areas as well as forests dominate. The residual transition zone contains about 28,009 ha (BIOSPÄRENVEREIN BLIESGAU e.V. n.d. and SAARLAND – MINISTERIUM FÜR UMWELT, ENERGIE UND VERKEHR n.d., see Fig. 3).

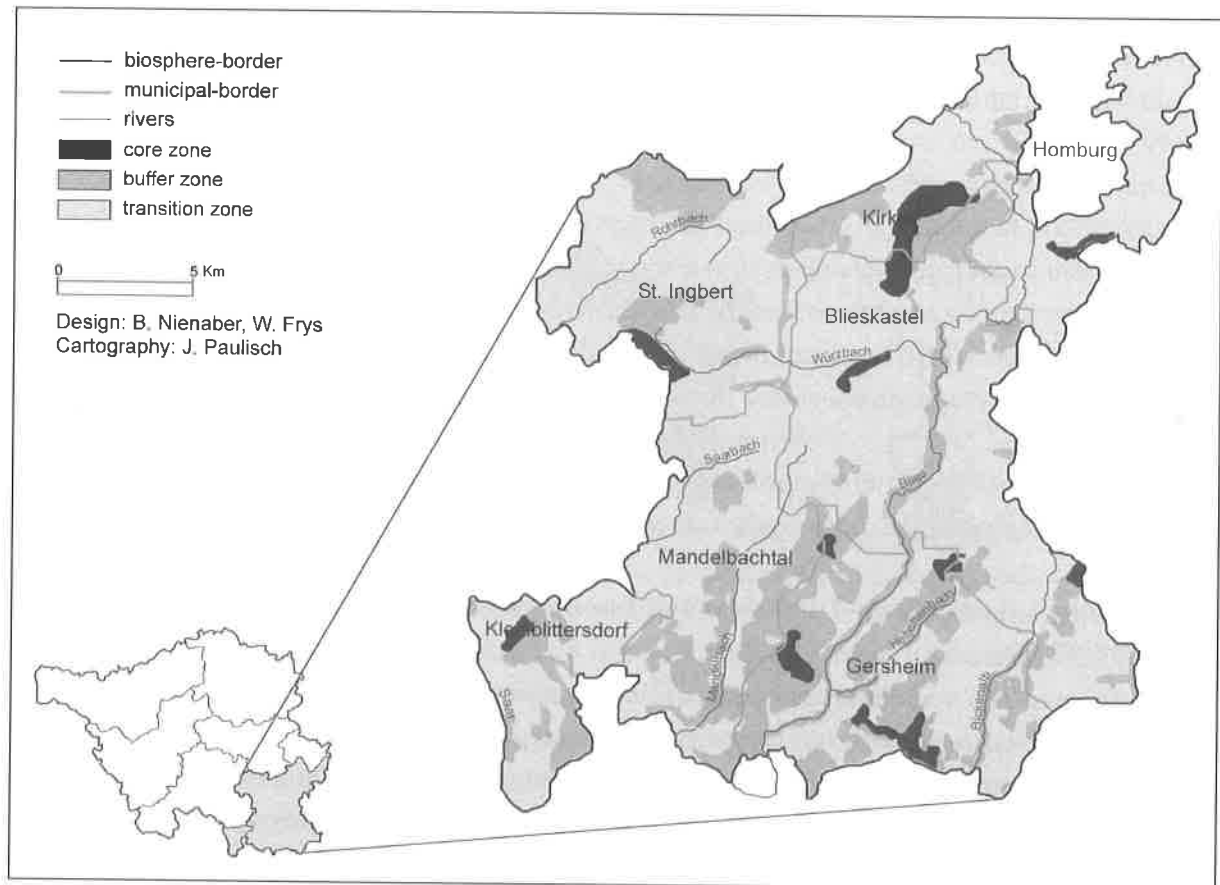


Fig. 3: The Biosphere Reserve Bliesgau and its zones
Source: own graphic

The development of the region from the initial conceptual considerations regarding the establishment of a biosphere reserve to the inauguration by UNESCO and the associated development can be split into four stages. Beginning in the late 1980s and continuing until the change of government in 1999, the initial stage was characterized by geo-ecological preliminary examinations. During the second stage between 1999 and 2004, first steps of a top-down shaped communication strategy were developed. Furthermore, considerations regarding zonation substantiated and an expert opinion regarding social and economic development was obtained. Additionally, an association dedicated to the promotion of the biosphere was founded under the name 'Freunde der Biosphärenregion' (friends of the biosphere region). During the third stage, between 2004 and 2009, voting with the MAB National Committee and a broadly based procedure of participation took place to receive UNESCO's designation as a biosphere reserve. The fourth stage of development started with the inauguration of the Biosphere Reserve Bliesgau by UNESCO. Regional protagonists obtained an extensive autonomy over the federal land to influence actions of the actors solely

though control of legality or as a member of the administrative body of the biosphere. Based on the substantial and personnel-intensive procedure of participation, it was possible to overcome pre-conceived opinions against the project. Merely representatives of the Ministry of Environment, from the employees to the minister, took part in about 250 procedures of participation in the region. Nevertheless, it is to be noted that the citizen's willingness to participate was limited. Beyond clubs, organizations, parties and councils, mostly citizens who saw a restriction of their ownership claim took the opportunity to participate (KÜHNE 2010, p. 27 and p. 32, see also HUSONG 2006).

Since the UNESCO designation, the management of the biosphere reserve has been changed. At the top of the reserve stands the administrative body of the biosphere. Since 1 November 2009 the management of the biosphere administrative body has contained three departments (BIOSPÄHRENZWECKVERBAND 2009):

- **Department 1:** Sustainable regional development, Environmental education (Education for Sustainable Development)
- **Department 2:** Ecosystem, Research, Monitoring
- **Department 3:** Public relations, Communication/Tourism

Local municipalities support the Biosphere Reserve Bliesgau which is organized as an administrative body. However, difficulties manifested in the further development of the project: "Officially and verbally, the communes and the administrative district support the biosphere project in their administrative body, appearing to the assemblies, attending press conferences, organizing the annual biosphere festival. But hardly any of the municipal actors can truly relate to the project" (translated according to LATTWEIN 2009, p. 26).

Furthermore, there are not only advocates but objectors of enhancing the Biosphere Reserve Bliesgau. This induces a discussion between both sides which is presented as a result of the expert interviews in chapter 6.



Fig. 4: Landscape of the Biosphere Reserve Bliesgau

Photo: W. Frys

6 Conflicts for regional development arising from the designation of the Bliesgau biosphere as a UNESCO Biosphere Reserve

The following explanations will initially present the interview partners' different viewpoints concerning the general environmental situation in the case study region 'Biosphere Reserve Bliesgau'. The change of environmental conditions, environmental capital and regional development in regard to conservation and exploitation in the Bliesgau biosphere in the recent years will be examined more precisely. Then, opinions of the key actors in regard to the effects of the UNESCO designation will follow. Both positive views of the UNESCO conditions as a chance and duty for the region as well as opinions concerning any positive effects of the Biosphere Reserve Bliesgau and no advantages for the region will be presented as sources of the conflict. A discussion about the organization and publicity activities of the Biosphere Reserve Bliesgau as well as a summary of the environmental conflicts concludes the article.

6.1 Environmental situation and environmental problems in the Bliesgau biosphere

The general environmental situation in the Biosphere Reserve Bliesgau is interpreted differently by the interview partners. Thus, one of the experts thinks that the Bliesgau does not occupy a special position regarding the environmental situation and environmental potential but is rather subject to general problems or advantages. The small-scale structuring, the abundance of species and the diversity of the landscape structure represent the special characteristics. However, the high population density as well as a strong fragmentation through traffic routes and lots of individual traffic in the area of the southern Bliesgau belong to the environmental threats in the case study region (COI).

Furthermore, the public transport infrastructure in the case study region as well as the high level of building development connected to the high population density are being criticised. The rural character of the region and the lack of manufacturing industry that goes along with it, cause a lack of employment and consequently a high amount of commuter traffic which again damages the environment.

Other experts evaluate the environmental situation of the Bliesgau biosphere to be good or very good, especially with regard to air quality, landscape and abundance of species in the case study region (ADL, COI).

Both in comparison to other German and international regions, the Bliesgau biosphere is evaluated very positively, in particular for the examination of comparable agglomeration areas situated in border regions (ADL).

However, the tendency of the population to commute using motorised private traffic is considered to be an essential environmental problem of the case study region. Altogether, it can be stated that this circumstance, which – on the one hand – is caused by the structure of the Bliesgau and its orientation towards the surrounding agglomeration areas and which – on the other hand – is favoured by a dense road network, represents the major threat to the environment. This is seen as a problem against the background of the ozone concentrations in summer. Other factors of environmental pollution in the Bliesgau have been criticised, such as the biological patency of flowing waters and the connection rates to sewage water treatment plants (ADL). Some problems are seen as challenges, for example, urban and rural areas should be connected to each other on a sustainable basis: *"We have to try ... to integrate these urban areas surrounding the natural space*

of the Bliesgau in a way that a sustainable urban-rural-relationship can develop, so that the environmental problems of the urban areas can be balanced with the positive aspects of the rural regions. Apart from that, I don't see any urgent problems at the moment. We don't have intensive agriculture in this area, at the moment; we don't have any industries, which would be truly alarming. Insofar, I currently don't see any major challenges there" (translated according to COI).

Other subject areas as well are not considered to be environmental problems at all: "In many places, landscape conservation is named: one has to cut back the shrub invasion on the hillsides. But that is what I don't really consider to be a veritable environmental problem ... on the level of biotic environmental protection or the metabolism of human beings; it's an aesthetical question which I wouldn't rate to be an environmental problem" (translated according to ADL).

Even more optimistic are the evaluations which are made by the institutions that represent agriculture in Saarland. They do not see any environmental problems in the biosphere (3AGC). For decades, environmentally compatible agriculture close to nature has been carried out. The structuring for the agrarian use in this area is in parts topographically pre-defined. The farmers operate in a very sustainable way because their agricultural businesses are organised to be passed on to the next generation. No intensive agriculture is carried out throughout the entire region. From an economic perspective, this is deemed too extensive because the existing potential of this area is not made full use of (AGC). Two of the experts even think that a larger area should be dedicated to agriculture to use it for food production and the cultivation of energy crops (2AGC):

"I always speak from the perspective of agriculture. ... From our point of view, I don't see any environmental problems (in the Bliesgau). No, for us the situation is perfectly alright" (translated according to AGC).

"The landscape there is so wonderful that one has to cut back hedges, for example, and to cultivate the landscape instead of (conducting) nature protection even further" (translated according to AGC).

After all, the maintenance of potential seems to be a good solution of how not to make the environmental situation any worse: "Especially for the region, it is important to maintain this richly structured landscape. With the extensive use of grasslands, with the many interspersed hedges, the bushes and the forest islands which still exist there. If agriculture was intensified, that would surely be the greatest danger. If, for example, mono-cultures could spread there, that would be a problem. Then, I think, concerning tourism, the region is still not intensively visited as this could produce larger problems at the moment" (translated according to COI).

Therefore, in summary the opinions concerning the general environmental situation and the essential environmental problems in Saarland and in the Bliesgau, as well as the things which are worthy of improvement, depend very much on the respective actor. The following parts of the article are meant to investigate this differentiation.

6.2 Change of environmental conditions in the Bliesgau

The opinions concerning the regional environmental situation of the Biosphere Reserve Bliesgau in the last decade differ very much from each other and they are not significant, neither for the supporters, nor for the opponents of the designation of the Bliesgau as a UNESCO biosphere reserve. Thus, both groups refer to deterioration as well as to an improvement of the ecological situation in the case study region.

The positive development is, on the one hand, connected to the good potentials which exist in the region and, on the other hand, to the committed population. Thus, the authorities and the volunteers did everything to advance this positive development (COI, ADL). Therefore, raising awareness concerning the relevance of this topic also contributed to improving the ecological situation in the case study region (COI). A positive example for this is the establishment of alternative energies, though a conclusive concept has not yet been developed (COI). Referring to its potential, there are many protected and intact biotopes (ADL). Apart from that, measures of technical environmental protection, such as the connecting communities to sewage water treatment plants, the installation of filters in industrial plants, as well as a moderate drinking water policy, have been praised (ZAGC and ADL). An improvement of the environmental situation in the region is recognized in the general structural change. The change of the industrial to the post-industrial society, which is accompanied by a decline of the emissions due to the outsourcing of industrial locations, is attributed a positive role in this development in the case study region (ADL).

A deterioration of the environmental situation has been detected with regard to the declining number of individual forms of usage, especially one on a small-scale. Serious negative changes in terms of scrub invasion resulted from the disuse of open land zones, in particular in the southern part of the biosphere reserve. Further negative developments were attributed to a settlement policy which is getting out of hand (COI). Moreover, an aggravation of the agricultural situation as a consequence of the designation as a UNESCO biosphere reserve is suspected because the designation is connected with additional regulations, as well as regional conditions and legal regulations and is seen as a restriction of their activity by the local farmers (AGL).

In summary, it can be stated that a tendentious deterioration of the environmental situation has been generally referred to, whereas especially the change of consciousness in the area of sustainability was considered to be one of the most important approaches for improvement: *"The environmental situation has been getting worse in the last ten years and only tendencies are perceptible which reduce these deteriorations. We cannot talk about a turning back, about a positive development of the situation by now"* (translated according to COI).

The contemplated suggestions for improvement are also connected to the topic of sustainability. The political decision makers should function as role models, they are demanded to make decisions subject to sustainability. Furthermore, the individuals have to be conscious that every action will influence the changes of the region. Therefore, there is great strength in the educational mission for children and adults (COI, ADL).

Further measures for the improvement of the regional environmental situation would be: extension of public transport, sustainable treatment of resources, more extensive farming and specific controlling of streams of visitors. However, future changes should be based on clear, sustainable concepts (ZADL and COI).

From the agricultural perspective, the potential of the area with regard to production has still not yet been entirely exploited. It is difficult for them to judge whether the environmental situation has been improved by the extensive form of cultivation. Furthermore, even intensifying farming activities would not worsen the environmental situation (AGC).

In general, the majority of the respondents demand the promotion of environmental awareness and a change of the population's habits of using public transport. Especially the latter will not be easy to implement: *"This is an infringement of personal freedom which people do not accept. But it would be a contribution to reduce CO₂ emissions"* (translated according to AGC).

6.3 Environmental capital and regional development

Environment and nature protection as well as a sustainable treatment of resources represent central topics in discussions about the regional development of the Bliesgau. This can be seen in the denotation of the case study region as biosphere Bliesgau and in its international designation as a UNESCO biosphere reserve on 26 May 2009 (2ADL, COI and AGC). Moreover, some of the experts demand an overall concept which considers every pillar of sustainability (ecology, economy and social issues) (2COI and 2ADL).

From the agricultural point of view, these topics are – on the one hand - deemed beneficial for a positive development of the region because they persuade the population to deal with and to identify themselves more closely with the region. On the other hand, these topics are seen to be obstructive *“because they signify additional tasks and increase production costs”* (AGC).

The representatives of agriculture associate environment and nature protection as well as a sustainable treatment of resources with more regulations and additional laws which in turn increase production costs (AGC). Likewise, there are also negative comments among the population (COI), whereas the political decision makers have a very positive attitude towards these topics (COI and ADL).

Altogether, a conflict of interests cannot be identified between a balanced economic development and an adequate ecological evolvement (COI and ADL): *“It is necessary to ecologically capitalise on the natural potentials ... and insofar, I don't see any of the much-invoked antagonisms of ecology and economy, especially not in the Bliesgau region”* (translated according to ADL).

In fact, biosphere reserves in particular have the function and the task to connect nature conservation with economic effects (ADL).

From the agricultural perspective, a sustainable use of environmental resources is not sufficiently taken into consideration on the regional level (2AGC). In this context, agriculture should be supported even more intensively: *“When I consider this from the agricultural perspective, then it is important for us to have green plants; that the areas are being cultivated because then we binding of CO₂ have on the one hand and oxygen production on the other hand and these incentives are generally supported in Saarland by specific programmes and it's not necessary to treat the biosphere area separately”* (translated according to AGC).

Regional promotion programmes are missing; the means of which would be on the regional level and could be distributed from there (AGC).

However, there are critical voices which state that too much is invested in the promotion of traditional agriculture and less in organic farming. Thereby, some projects should be critically scrutinized as to whether they really promote sustainable use and also specific areas individually (COI). The statement of another expert clearly defines this criticism and complains about the short life of promoted projects, which are not financially sustainable after the support stops: *“Personally, I'm critical indeed for some parts, because many projects run as long as they're promoted and the sustainability of many state-sponsored model projects is often very little. ... I worked for a relatively long time in the topic field of LEADER. There is definitely a lot being promoted which is of limited sustainability”* (translated according to ADL).

Nevertheless, some experts think that the financial support with regard to sustainable use of environmental resources is not enough. The following points are criticized in particular: *“Firstly, I think that there isn't enough support and secondly, I also believe that the right things are not being promoted. ... In my opinion, we should try to find really integrated solutions. Solutions that don't support single short-term projects but clear strategies in the regions. There I do see the advantage of*

regional development: that you try to set up regions which form a critical mass on the one hand, but ... to develop small-scale projects ... and strategies that can be realized on the other hand" (translated according to COI).

Therefore, a sustainable use of resources in the sense of a holistic approach across different areas and sectors would have to be improved and the funding programmes would have to be adjusted accordingly. Likewise, the networking of the individual funding programmes should be improved and the support of renewable energies in the region would have to be extended so that the funding would be connected with a regional concept (ADL). Finally, the experts wish for a clear representation of the existing funding structures for the private as well as for the public sector: *"I think it would be helpful for a lot of people if the whole range of funding would be put together in a manageable form ... and be presented in a better way to citizens ..., businesses, but also to local authorities ... so that (these promotions) can be used more effectively"* (translated according to ADL).

Except for the representatives of agriculture, the experts concur that a stronger economic orientation towards sustainable forms of economy should be advanced in the case study region. From the agricultural point of view, organic farming should not gain greater economic significance because production nowadays is approximately as high as the market needs (AGC). Only the expansion of renewable energies, which, according to the representatives of agriculture, should be advanced further represents an exception (2AGC).

6.4 Conservation versus exploitation

In the course of the expert interviews, it was discussed whether the protection of environmental resources is an obstacle to their sustainable use. Six experts responded to the question with 'no' (3COI, 2ADL and AGC). The opinions did not depend on the experts' positive or negative attitude towards the biosphere reserve. Though from the agricultural viewpoint there is generally no contradiction between sustainable use and the protection of environmental resources due to their sustainable working methods.

The experts, who see conflicts between conservation and exploitation (3ADL, 2AGC and COI) plead at the same time for protecting nature, which should not be too extreme, and a balanced sustainable use of environmental resources because protective measures, which are too strict, always affect sustainable use (2AGC and ADL). Thus, for example, the protection of the cultural landscape and the cultivation of biomass are mutually exclusive. However, if both is carried out moderately, compromises could be achieved which take both protection and usage into consideration (ADL). The same applies to an absolute prohibition of using the forest area concerning wood exploitation or hunting (2AGC).

Furthermore, the experts demand setting an emphasis on good concepts which consider both aspects to reduce the existing goal conflicts (ADL). To this, one expert says: *"I believe that this is today's most exciting task of modern environmental management, ... to establish the sustainable use (of environmental resources) ..., to direct it, to manage it in a way that the protection of the environment is guaranteed at the same time"* (translated according to ADL).

Then, the question arises whether enough is done from the part of regional planning to assure nature protection on the one hand and, on the other hand, to promote a sustainable use of resources. In this case again, the opinions were split in half, whereas the agricultural representatives very clearly did not expect any further conditions concerning regional planning because this would entail additional utilisation restrictions. Thus, the existing regulations are considered to be too general and insufficient-

ly geared towards the concerns of each region (3AGC). Other respondents do not see any deficits from the viewpoint of their own projects (2ADL) or they refer to the Regional Development Plan (LEP) for Saarland, which – amongst others – assures environmental protection by highlighting the protection of areas with nature and free space protection or by naming priority zones for wind power generation. However, deficits in this field generally depend on whether environmental protection as landscape or climate protection is understood in a passive or active sense. Basically, the LEP is balanced and up-to-date concerning these interests, though its execution strongly depends on political decisions (ADL).

However, all representatives of companies and other institutions as well as some experts from the administrative level think that regional planning does not do enough for environmental protection and a sustainable use of resources (4COI and 2ADL).

“Let me be perfectly clear: there isn't enough being done! Especially not for the region as a whole” (translated according to COI). This statement is explained by the expert by stating that many decisions depend on day to day politics, legislative periods, competitiveness among the local authorities and on party affiliation and that decision makers think in periods of time, which are too small, and not on a regional scale (COI). The structure of regional planning itself and therefore the problems to translate for example the LEADER programme into practice were criticized (COI). Another key actor demands emphasizing clear priorities for regional planning and creating sustainable concepts (land-use planning and development planning) which would arise rather from regional than from municipal or local thinking (ADL). Furthermore, some plans need to be revised due to the latest developments (e.g. with regard to wind energy) and a framework concept for the UNESCO biosphere reserve has to be drawn up (ADL).

To what extent the region's environmental potential is endangered by overly intensive use is judged differently by the experts. Thus, the agricultural representatives do not see any threat in the Bliesgau region because there is no intensive use in this area according to them (2AGC). Furthermore, due to the sustainable use and the high number of conditions and regulations (e.g. fertilizer regulations, cross-compliance regulations for single payment scheme), there could not be a threat caused by an intensification of use (AGC). Whereas only two other experts (2ADL) also responded with a clear 'no' (due to regulated hunting and riding zones, a population density, which is no longer increasing, and no need and no financial viability for further infrastructure), the other key actors had a different view (4COI and 3ADL). Thereby, various kinds of danger are perceived:

- land cultivation which is too intensive and commercial (increasing energy costs also play a role which would lead to monocultures and an overutilization of soil) (4COI and 2ADL),
- too much or wrongly directed tourism (4COI and 2ADL),
- use of wind energy, which is too intensive, so that it would affect birds and bats (ADL),
- utilization, which is too intensive, in the fields of business, industry, traffic or settlement (ADL).

Whereas a positive development is perceived in the sector of forestry, ceasing to use environmental potentials is seen as another problem of the case study region. Thus, landscape and living spaces always need a specific degree of utilization. However, this utilization could cease due to the decline in farming so that environmental resources could also be affected. A typical example for a negative effect of disuse is shrub invasion. Though tourism could affect the region's environmental potentials, an intensive touristic utilization of the region with increasing infrastructure has to be regarded as rather unrealistic.

6.5 Bliesgau biosphere and its designation as a UNESCO Biosphere Reserve

The designation of the Bliesgau biosphere as a UNESCO biosphere reserve (on 26 May 2009) doubtlessly represents a re-evaluation of the case study region which is at the same time connected to further conditions regarding nature protection. The additional regulations cause cuts in agricultural activities which lead to conflicts. After presenting several conflicts and opportunities concerning the general environmental situation above, the emphasis is now put on the effects of the Biosphere Reserve Bliesgau and the UNESCO designation on nature protection in the case study region and in Saarland generally.

At first, the general potentials are presented which are offered to the Bliesgau by its status of a UNESCO biosphere reserve.

According to the experts, especially landscape and nature protection potentials derive from the criteria defined by the UNESCO. Moreover, the designation can have positive effects on nature tourism. Thus, the biosphere reserve could benefit from the fact that short trips are very fashionable at the moment and therefore cause additional positive effects for the region's economy. The biosphere has the excellent basic potential which is formed by the beech forests on variegated sandstone soil with weathered rock formations, the river Blies with its pasture landscapes, as well as the dry grasslands with orchids and numerous insects. Thus, the regional development is boosted by the UNESCO designation and the duties resulting from it. The rating does not only represent an increase in value and a marketing element for tourism, in a further step, it could also benefit regional producers who could market their own products (3COI, 2AGC and 2ADL). House building in a way which is typical for the region would also be a matter (ADL). The conditions resulting from the designation are considered to be positive in view of the targeted opportunities.

One respondent sees the potential within the educational mission of biosphere reserves: *"Biosphere reserves have a clear educational mission. ... I think that education and information could be improved considerably here, by regional activities, but also by a stronger presence in national media and materials"* (translated according to COI).

Whereas all three groups of experts demand the development of a stringent concept (3COI, 2AGC and ADL) the potentials are not yet being used to a great extent and will be fully available after fulfilling the guidelines (COI), the representatives of agriculture affirm their opinion as follows: *"This attribute UNESCO will surely have an advertising effect, but I don't see any other potential – especially for the agricultural sector – coming from that. Until now, we have been told that this designation as a biosphere reserve, the UNESCO designation so to say, doesn't entail any financial advantage"* (translated according to AGC).

Moreover, the majority of the experts see an improvement of the ecological situation in Saarland in connection with the Biosphere Reserve Bliesgau to be possible. However, whether this will really happen, they cannot assess. Especially by developing strategies and projects eligible for funding, but also by raising awareness for the need of protecting the region's natural attractiveness protection, the biosphere reserve can have a positive effect on the ecological situation in Saarland. The targeted exemplarity of the region does play a major role for this (3COI and 2ADL). From the agricultural point of view, the biosphere will not have any effects on the rest of Saarland (3AGC). *"I think that almost all the other parts of Saarland could have been used to designate areas ... as a biosphere reserve"* (translated according to AGC).

The following examples concern the contribution of the Bliesgau biosphere to the promotion of nature protection:

Positive examples:

- Strict designation of core and buffer zones, as well as exertion of influence in transition zones (2COI and ADL),
- Landscape protection measures in general (2ADL and COI),
- Considered guidance of visitors (2ADL),
- Protection of species (Marsh Fritillary (*Euphydryas aurinia*), orchid meadows) (COI),
- 'Umwelt- und Friedenstag' (Environment and Peace Day) (COI),
- The nature protection project 'Auf der Lohe' (AGC).

Negative examples:

- Restrictions for farmers and hunters (2ADL),
- Natura 2000 areas (2AGC),
- New access roads in Blieskastel (bridge and roundabout) (COI),
- The former customs train station in Limbach-Altstadt (ADL).

Furthermore, one expert stated that the biosphere reserve has not yet had a positive influence because nature protection has had a negative image in the region until now. In doing so, the respondent welcomed the UNESCO designation because it demands nature protection (ADL). Another respondent shared this opinion and additionally criticised that until now, nature protection has played a minor role in the management of the biosphere. According to him, the reasons for this are the lack of accordingly trained staff and insufficient competences because this field is in the responsibility of the Ministry of Environment. Therefore, the biosphere's administrative body has been involved in a relatively low number of projects which has to be changed (ADL).

Concerning the climate change and extinction of species with regard to the biosphere reserve, not all of the experts think that the biosphere reserve will help to shift these topics more into the centre of regional attention. One expert worries that this will rather not be the case unless the regional management and the biosphere's administrative body will involve these topics more. Although there have not been any successes to that effect in the case study region yet, it would also be too early to talk about deficits (COI).

Other experts definitely see potentials in the biosphere reserve to regard climate change and extinction of species in the case study region more closely. These potentials are identified in particular in the sensitisation of the local population by education and public relations (2COI and ADL), commercialization of regional products (COI), renewable energies (COI) and other projects on this topic (ADL). For the purpose of completeness, the opposing opinion of the agricultural representatives is presented here. The respondents concerned cannot imagine that the biosphere reserve will contribute to put the discussion on climate change and extinction of species more into the centre of regional attention.

"I don't see any deficits now, because I judge the situation, just like it is at the moment, to be good. We've got other areas, where certain animals have been resettled I have doubts concerning these areas. If certain animals withdraw, then this has reasons unless they (disappear) quickly, by human intervention, then you can get them back again. But otherwise, this is a development which has to be accepted and tolerated. ... Of course, you have to be careful that there (aren't) any negative effects,

but from the agricultural point of view, I don't worry about them – regardless of whether there is a biosphere reserve or not” (translated according to AGC).

The development of gentle tourism, sustainable agriculture and forestry, as well as regional commercialization of agricultural production in connection with the Biosphere Reserve Bliesgau is represented more positively. Initiatives or regional products, such as ‘Lebensadern Wege’ (*Ways as life veins*), Bliesgau-Molkerei (*Bliesgau dairy*), Bliesgau-Regal (*Bliesgau shelf*), Bliesgau Genuss e.V. (*Bliesgau indulgence, registered association*), Bliesgau Kiste (*Bliesgau box*), Bliesgau apple juice, Bliesgau bread were named as positive examples. Even though not all of the possibilities have yet been exploited (amongst other things, because of the restrictive funding environment), the interviewees support these areas. However, from the agricultural standpoint, these initiatives are being dismissed. The statements of the agricultural representatives are rejecting, even with regard to regional commercialization of agricultural products: *“This dairy could be located in any other part of our small state. ... We have a production of apple juice in Merzig which enjoys great renown nationwide ... and even beyond the German borders and because of this apple juice from Merzig will always be more popular than apple juice from the Bliesgau. And for our potential, which we have here directly, by one million inhabitants, in my opinion, it doesn't make sense to build up additional rival products. Hence, these possibilities of regional marketing of agricultural products will not differ from the other regions here in Saarland” (translated according to AGC).*

In fact, these developments are considered to be threats, especially tourism, which could claim areas which are used by farmers and hunters (2AGC).

6.6 The organization and publicity activities of the Biosphere Reserve Bliesgau

In chapter 5, the new organization of the Biosphere Reserve Bliesgau management was presented and the departments of the biosphere's administrative body were introduced. In the following, the general organization and the activities of the Biosphere Reserve Bliesgau from the experts' perspective will be presented.

The opinions of the experts about the management of the biosphere's administrative body are divided. Hence, one of the experts thinks that the field should be attached to the Ministry of Environment to control the decision processes from there because at the moment: *“decisions are subject to political dictation and to the purpose. This is obvious” (translated according to COI).*

Other experts think that the management would basically work better now that there is an experienced leader¹ of the biosphere's administrative body. However, in their opinion, the administrative body has problems concerning its self-discovery with regard to the regional actors, as well as with regard to its political orientation (3AGC and 2ADL). The situation could be improved if the people involved put personal and political profiling aside. Additionally, the management would have to be equipped with enough staff (ADL). Other experts as well would welcome an increase in staff in the biosphere's administrative body (2ADL and COI) because, even though the efforts and the commitment are great, the measures undertaken should not wholly depend on volunteers (COI). The quality of the management is assessed with regard to the networking of the actors in the biosphere reserve, which is defined as very important (COI).

¹ Walter Kemkes has been leader of the biosphere's administrative body since July 2010.

The representatives of agriculture criticise that they are not intensively involved into networking. The communication takes place on the district level where they have contact to the district mayor. According to them, networking on the state level has deficits with regard to planning future projects and LEADER measures (AGC). Moreover, they complain about the high number of actors involved in the biosphere reserve networking (2AGC): *"There are too many actors who have to schedule too many appointments and they want to be in on everything, too. It doesn't work out like this"* (translated according to AGC).

Another expert appreciates the fact that there are so many actors from different fields in the Bliesgau, but at the same time he states that it has not yet been possible to build up a network connected to the biosphere (COI). Other respondents also believe that the networking does not suffice and they demand more involved actors, a targeted distribution of tasks and improved internal communication (e.g. among the LEADER regions), but also with regard to the population in the Bliesgau (3ADL and 2COI).

The activities of the biosphere reserve are strongly combined with the public relations of the biosphere's administrative body. It is described to be positive by the experts. Especially the brochures and flyers, events of the biosphere reserve, the presence at trade fairs and press work are praised (2COI). One expert summarises the mission of the biosphere's public relations: *"(It is important) to make (people) in the region aware of the interesting things which are there, to create the opportunities not only to visit nature protection areas but also to represent them exemplarily: 'How characteristic is this landscape?' (It is also important) to enable those, who come to the region, to walk through the landscape with their eyes open. And this concerns all these things: village structures, old farm houses, the old forms of economy which used to be here, but also meadows with scattered fruit trees to the specific things, such as nature protection areas, orchid meadows, etc."* (translated according to COI).

Deficits are perceived due to insufficient information with regard to the biosphere reserve (COI), but also concerning the term of 'sustainable development' (COI), equipment of staff (ADL) and the design of the website (COI). In these areas, the experts also see possibilities for improvement, such as publishing a magazine on the biosphere (COI) or producing a film about it (2ADL).

The agricultural representatives consider the public relations work of the biosphere's administrative body to be less praiseworthy because it does not supply enough information to the population (2AGC; here also COI). Thus, no PR is done for the biosphere reserve with regard to agriculture (3AGC) and PR for farmers is only provided for information on restrictions on land use, regional marketing or funding possibilities (2AGC).

Concerning the Biosphere Reserve Bliesgau's contribution to environmental education, the cooperation with the Ecological Schullandheim Gersheim 'Spohns Haus' (state-run kind of youth hostel in the country used for school trips) (4ADL, 3AGC and 3COI) within the framework of the Education for Sustainable Development concept, as well as with kindergartens and primary schools (COI and ADL) has been praised.

Although measures of environmental education in connection to the UNESCO designation are expected in the case study region (3ADL), environmental education is also perceived to have deficits. Especially the low number of measures at regional schools and in local adult education are criticised (2AGC, 2COI and ADL).

Furthermore a stronger involvement of science in the case study region is demanded. Likewise, Saarland University should be included into environmental education (ADL).

6.7 Summary of the environmental conflicts in the Biosphere Reserve Bliesgau

In the following chapter the existing regional potentials for conflicts between environment and nature protection on the one side and the utilization of natural resources on the other will be summarised and finalised. As it can be seen in earlier statements, not every expert has identified such a conflict in the case study region. The general opinions on the topic were presented in chapter 6.4. In conclusion, the following threats, which trigger conflicts, have been named by the regional actors:

- regulations for agricultural cultivation (3AGC);
- the designation of Fauna Flora Habitat (FFH) and Natura 2000 areas, as well as other nature protection areas (3AGC);
- wind power generation (3ADL);
- farming, which is too intensive or geared towards monocultures (2COI);
- genetically modified products (2ADL);
- the photovoltaic plant in Bliesransbach (2ADL);
- overuse of regenerative energies (ADL);
- too much uncontrolled settlement (COI);
- tourism (COI);
- a biogas plant project (COI);
- pollutant emissions in the community of Kirkel (ADL);
- effects of the natural gas power station in Hambach (Lorraine, France) (ADL).

Depending on the difficulty and the extent of the [individual] projects, different actors are involved in the conflicts, however no globally active, international companies (except UNESCO). According to the experts, global actors do not often play a role because they try to solve conflicts on a regional level (2ADL, 2COI and AGC). Except for the representatives of agriculture, who describe the necessity of applying EU regulations as a kind of pretext (2AGC), the other experts do not know about concrete conflict situations in which regional actors turn to higher organisations or institutions. Altogether, the following actors involved in the conflicts were named:

- Bund für Umwelt und Naturschutz Deutschland (BUND) (3ADL and COI);
- Naturschutzbund Deutschland e.V. (NABU) (3ADL and COI);
- local actors and small clubs, such as the association of beekeepers or fishing clubs (2COI);
- actors on the federal and EU level in general (2AGC);
- UNESCO (ADL);
- Ministry of the Environment (COI).

The position of agriculture becomes clear in the following statements:

"Well, this regional potential of conflict evolves from the fact that additional regulations are made for cultivation. ... If, for example, there are additional conditions for the Flora Fauna Habitats in the biosphere reserve in the future, for example a ban of ploughing up grassland, for example a restriction of corn cultivation, this will have consequences and this will create a conflict" (translated according to AGC).

"Conflicts are caused by protected areas and also partly by nature protection areas, which we ... already mark as lost areas, from an agricultural point of view. ... What is primarily disturbing us at the moment, are the FFH and Natura 2000 areas, which, on the one hand, cover larger agricultural

areas and which, on the other hand, are owned by private individuals. And in my opinion, what is presented there, these are elements of an offence, which equals compulsory purchase. This is a relatively big conflict, which needs to be tackled" (translated according to AGC).

"The environmental associations do actually look for support on the federal or EU level. The areas have been reported to the EU and now (the officials on the spot) hide a bit behind the demands of the EU. The (whole) story is put upside down" (translated according to AGC).

7 Conclusions

In conclusion, it can be stated that generally two different opinions predominate concerning the environmental situation and the environmental potentials, as well as environmental protection and the sustainable use of resources in the case study region, which are both connected to the latter. On the one hand, the experts representing agriculture think that the environmental situation is very stable and they only see threats in land use restrictions. On the other hand, the other experts (representatives of the administrative level as well as of companies and other institutions) think that especially intensive farming or one which is geared towards monocultures essentially affects the environment. These respondents concur that a stronger economic orientation towards sustainable forms of economy, i.e. organic farming, gentle tourism, sustainable forest management, renewable energies, the initiation of regional economic cycles in the sense of an 'eco-economy' should be advanced in the case study region. Furthermore, ecological interests and thus the idea of an eco-economy have been highlighted explicitly in Saarland: "For the interest of environmental protection ... the share of areas for organic farming has to be increased step-by-step. The use of fertilisers and pesticides has to be reduced to a reasonable extent" (translated according to SAARLAND - MINISTERIUM für UMWELT 2004, p. 15).

The designation of the Bliesgau as a UNESCO biosphere reserve represents an enormous re-evaluation of the case study region. However, this designation is connected to many obligations, which, on the one hand, represent conditions and restrictions for certain actors and which, on the other hand, offer possibilities to other key personalities to come closer to their objectives concerning nature protection. Thus, the biosphere's administrative body has been affirmed in its activities and encouraged to further activities in terms of sustainability. The general public doubtlessly has great expectations of the biosphere's administrative body, which range from educational work for the population, a faultlessly working management to successful networking and tasks of environmental education.

The identified problems arising from the UNESCO designation of the Biosphere Reserve Bliesgau follow from a significant lack of information within the region; local people should be informed and counselled, especially as there is potential for conflict in the Bliesgau biosphere. Wind energy, for example, subjectively destroys the natural landscape. The region will deal with these aspects for a long time. There will be a contradiction, because on the one hand the population wants renewable energy, but on the other hand refuses the concrete construction of these facilities. A problem with the biogas plants is another example for a lack of information for the regional population. Therefore the most important way of playing down the conflicts is by informing locals e.g. on the basis of informative meetings where fears of the population concerning protected areas are taken very seriously and new concepts for this issue are presented.

The results from the implementation of the Biosphere Reserve Bliesgau can be used for future

implementations of biosphere reserves to avoid conflict potential and to be responsive for the fears of special (interest) groups.

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