



Introducing the case study

The biosphere reserve (BR) Spreewald (literally translated: Spree forest) located in the federal state of Brandenburg was founded in 1990. In 1991 it became part of the UNESCO program 'man and biosphere'. The region is divided into two sub regions, the upper and the lower Spreewald and stretches over three administrative counties, Dahme-Spreewald, Oberspreewald-Lausitz, and Spree-Neiße. The BR is part of a wider economic region called 'Wirtschaftsraum Spreewald', an area about six times bigger than the actual reserve.

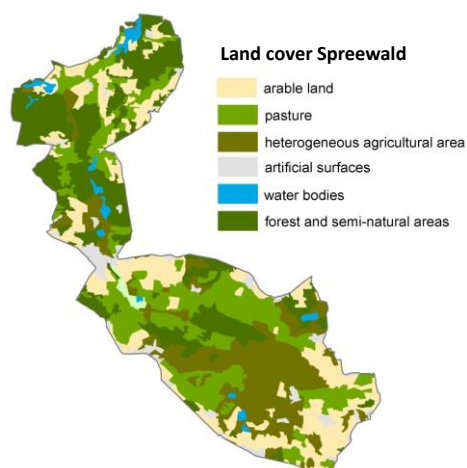


Figure 1: Land cover of the BR Spreewald

The BR is differentiated into four protection zones: core zone, management zone, harmonious cultural-landscape zone, and regeneration zone. The core and management zone are under the highest protecting status according to the national protection category 'Naturschutzgebiet' (NSG) (nature reserve of central importance). The development and regeneration zone are designated as 'Landschaftsschutzgebiet' (LSG) (landscape protection area). At the same time, the area is entirely designated under the EU's Natura 2000 conservation network, including both flora fauna habitat (FFH) and spatial protection areas (SPA). In terms of property rights, 73% of the core, 30% of the management, and 13% of the harmonious cultural-landscape and regeneration zone are in public ownership.

The case study in numbers

Established: October 1, 1990

UNESCO status acknowledged: April 11, 1991

Total area: 475km²

Total population: 50,000

Population density: 105 inhabitants/km²

Administrative districts: 3 counties, 17 municipalities

Cities and villages: 2 cities, 37 villages

Protection zones:

- Zone 1 (core zone): 9.74km² (2.1%)
- Zone 2 (harm. cultural-landscape): 93.34km² (19.6%)
- Zone 3 (development zone): 222.08km² (46.9%)
- Zone 4 (regeneration zone): 149.17km² (31.4%)

Natura 2000 areas:

- FFH: 129.27km² (27%)
- SPA: 475.09km² (100%)

Land use and cover:

- Forests: 130.20km² (27.4%)
- Arable lands: 115.57km² (24.3%)
- Grasslands: 177.40km² (37.5%)
- Water areas: 13.86km² (2.9%)
- Other (including settlements): 37.82km² (7.9%)

About 50,000 people live in the region, compared to 265,000 in the whole economic region Spreewald, about half of them in the two cities Lübben and Lübbenau. The population includes the local minority of Sorbs and Wends with their own historical language and culture.

The GDP per capita ranges between €32,472 (counties Dahme-Spreewald and Spree-Neiße) and €19,713 (Oberspreewald-Lausitz). The average household income ranges between €19,087 (Dahme-Spreewald) and €17,450 (other two counties). The current unemployment rate is around 9% (ranges between 6.8% and 11.4%). The most relevant economic sector is the service sector. Here tourism plays a major role. The region has more than four million visitors each year, thereof one fourth with overnights stays. The primary sector, with agriculture, forestry, and fisheries, contributes only about 1.4% to gross domestic production (GDP), which is slightly below the Brandenburg average of 1.93%.

Remarkably, the region is processing and marketing most of its own produce, which is quite unique in Germany compared to other regions. Ten processing plants which primarily use local ingredients are based in the region. For marketing a regional brand 'Dachmarke Spreewald' was established in 1999 which gained wide regional and national recognition. The brand gets recognition only for producers based inside the area of the economic region Spreewald. World-famous under the brand are the Spreewald gherkins and also a local variety of horseradish.

Biodiversity and ecosystem services

The BR protects a very unique landscape within the vast delta around the river Spree with more than 200 small navigable channels crisscrossing through the area. The small-scale mosaic of different land uses with single farmsteads nested into the landscape is the outcome of the traditional land use practices which have been applied in the region for centuries.

The traditional land use goes along with high biodiversity including many highly endangered flora and fauna species. About one fourth of the 1,227 registered wild flora taxa are endangered according to the 2006 red list of Brandenburg. Out of the 3,498 so far characterized fauna species, 7 are classified as vulnerable according to the IUCN red list, including otter, barbastelle bat, corn rake, aquatic warbler, lesser white-fronted goose, hermit beetle, and great capricorn beetle. Further 22 fauna species are listed in Annex 2 of the FFH directive. From the 395 vertebrate species, 111 are endangered according to the red lists of Germany or Brandenburg. This includes 24 mammal, 71 bird, eight amphibian, and three fish species.

There are four main habitat types in the reserve: 1,575km of rivers and streams, both natural and artificial, one third with impaired quality; about 120km² of fen moors, pastures and meadows, partly degraded; 150km² of wet grasslands, thereof 28km² of high value; and, 45km² of bog and floodplain forests. The habitat types cover 18 types that are classified as valuable in the FFH directive and 82km² are protected according to the federal law on nature protection (BNatSchG).

In terms of ecosystem services (ES), provisioning ES are very important and cover a range of environmental goods such as food, timber, and fiber. Regulating ES concern in the first place water regulation which is of tremendous importance as all habitat types are water influenced either by surface or ground waters. Thereby the water regime is highly impacted by open pit coal mining in the Lausitz region where the head waters of the Spree come from before they enter into the Spreewald region. Finally, cultural ES are closely connected to the culture of the sorbs and wends who aim to preserve their language, arts, music, and traditional clothing, but also the typical land use practices with small farms still using the traditional barge to transport cattle, hay and other produce between the farmsteads and the fields. This includes the preservation of about 600 original farmsteads which constitute a unique heritage in the Spreewald region.

The BR focuses on maintaining these typical and even often sustainable forms of land use. Another focus lies on water management and the maintenance and revitalization of the small waterways. As the groundwater table with 40cm below ground is very high, water management is crucial for land users to access their land. Preservation of local traditions and cultural heritage, sustainable tourism, as well as education for sustainable development is another focus.

Land use and land cover in general

Forests, arable lands and grasslands each cover about one third of the area. The rest are water areas and settlements. While forests dominate the core zone, the maintenance zone is covered by forests and grasslands in combination, and the development and regeneration zone by a mix of grass- and arable lands. Residential areas are concentrated mostly in the development and regeneration zone.

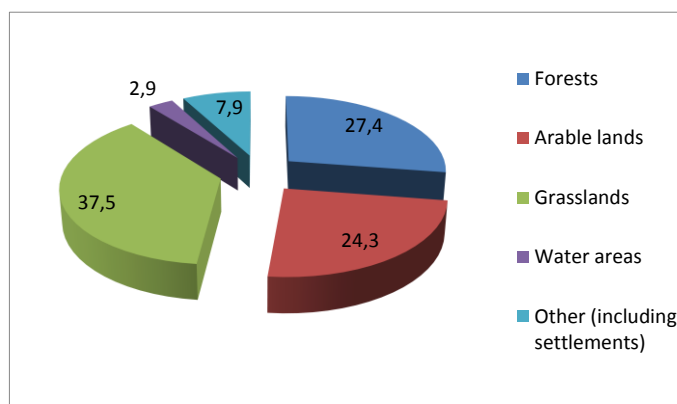


Figure 2: Land use and land cover

Agricultural production in specific

Agricultural production is defined by heterogeneous soils and accessibility of the plots is highly dependent on site-specific water regulation. The average size of the farms is rather small scale with only about one fifth managing more than 200ha, which is below the Brandenburg average (238ha). The majority of land (80%) managed by the farmers is on lease. The share of organic farming with about 70% is the highest in all of Germany. Since 2004, the region has committed itself as a GMO (genetically modified organisms) free zone.

Arable crops include mostly rye, corn, winter rape, roughage such as clover-grass-mixtures, for livestock forage, and winter wheat. About 10km² are dedicated to vegetable production, thereof 6km² alone for the production of gherkins.

Livestock in the first place concerns grassland-bound rearing of suckler and dairy cows. The livestock density is 0.5 livestock units (LU) per ha and thus way below the Brandenburg average of about 1 LU per ha.

A number of farms are also involved in biogas production.

Governance approaches

The designated EU and national protection status results in a number of restrictions for land users in the area.

Restrictions are specified as command and control governance approaches in a number of laws and regulations at the EU, federal and Brandenburg state level. This includes for instance the Natura 2000 habitats and birds directives and the water framework directive (WRRRL) at EU level, or the respective nature protection laws at federal (BNatSchG) and state level (BbgNatSchG).

For the BR itself, a regulation is in place which specifies the restrictions per zone. Under the existing legal framework, also different management plans for regional planning are in place. These are either valid for the whole area such as the landscape maintenance and development plan ('Landschaftsrahmenplan'), which includes planning for private settlements, industrial areas, agriculture, forestry, hunting, fisheries, water management, waste management, energy, and traffic, or the 'Pflege- und Entwicklungsplan' of the BR for conservation planning in specific. Other management plans relate to specific areas, such as FFH areas (FFH management plan) or riparian zones (e.g. 'Gewässerrandstreifenprojekt').

Furthermore, several market-based governance approaches are in place. This includes the state-carried program for agri-environmental schemes (KULAP) under the EU's common agricultural policy (CAP) with shared financing through EU, federal and state funds. Specific programs exist especially for the Spreewald region with respect to meadows ('Spreewaldwiesenprogramm'). Farmers' participation is voluntary and the funding is assigned to the land manager, not the land owner which is important as the majority of land is on lease. Farmers can also get compensation payments for restrictions on land that is located inside Natura 2000 areas. Historically, also individual conservation contracts ('Vertragsnaturschutz') between farmers and the BR played an important role, particularly for the conservation of sensitive grassland areas, but these funds have been cut back in last years. Also funding for rural development (ELER) through the ILE (integrated rural development) and LEADER ('liaison entre actions de développement de l'économie rurale') initiatives where local action groups apply for funding are important for the region. The regional brand 'Dachmarke Spreewald' can be named as another market-based approach, which promotes marketing of local products and services. Recently, also a Spreewald meadows share ('Spreewaldwiesenaktie') can be bought by those interested to support conservation measures on meadows.

Finally, also several collaborative governance approaches exist. A citizen foundation ('Stiftung Kulturlandschaft Spreewald') was founded in 2007 which was established to raise additional funds to promote the preservation of the unique cultural landscape.

Another important initiative is the local backwater association ('Staubeirat') which meets twice a year to discuss and plan issues related to water management. Also the so-called regional conference ('Regionalkonferenz Spreewald') is an important initiative which was established in 1999 with about 100 members from all spheres of society also open for the participation of the general public. The conference takes place every two years and aims to increase the understanding and acceptance of the BR's mission. All issues related to the regional brand are coordinated through the Spreewald association ('Spreewaldverein') which also is mainly in charge for organizing the ILE and LEADER initiatives. Concerns for tourism are managed by several county-based tourism associations ('Tourismusverbände') most of them under the roof of the head association of the 'Tourismusverband Spreewald'. And the preservation of the old farmsteads is the mission of another federal association ('Interessengemeinschaft Bauernhaus').

Governance actors

The governance approaches are carried and implemented by a multitude of different local, regional and federal actors.

The core actor is the BR administration ('Biosphärenreservatsverwaltung'), which is headquartered in Lübbenau. It is affiliated to the State Office for Environment (LFU). For affairs related to agriculture, forestry, hunting, fisheries and water regulation, nature conservation etc., the BR administration works closely with the respective sub-departments of the Ministry of Rural Development, Environment and Agriculture of Brandenburg (MLUL) and of the State Office for Rural Development, Agriculture and Land Consolidation (LELF) in the three counties Dahme-Spreewald, Oberspreewald-Lausitz, and Spree-Neiße. For monitoring issues the BR administration cooperates with the Rangers ('Naturwacht') and the Eberswalde University for Sustainable Development (HNEE), amongst others. There is also an established network of 'test farms' which is monitored regularly. The BR administration also offers several outreach programs addressed to farmers, schools and the general public.

Also, several non-governmental organizations, which are active at the national and international level, such as the Nature and Biodiversity Conservation Union (NABU) or Friends of the Earth Germany (BUND) run different projects and initiatives in the region. Further local associations (e.g. fire brigade, junior rangers, etc.) exist.

Key challenges

The region struggles with a number of challenges which can be summarized as follows:

- demographic change: high out-migration (current prognosis is minus 10-20% until 2020), especially of young people, leading to overall aging of the population
- policy change: general cut back in public funding, in specific funds available for individual conservation contracts with land managers ('Vertragsnaturschutz')
- global environmental change: impacts of climate change, especially in regard to water regulation with more extreme events, both in terms of draught and flooding events
- agriculture: as many farmers miss a successor there is the general threat of land abandonment, especially on wet and marginal grasslands with high environmental value, effect becomes even more pronounced through cut-back in public funding as management of marginal sites does not pay-off for farmers without public funding, at the same time other areas get under inappropriate management due to intensification (e.g. overgrazing of sensitive grasslands), overall the challenge is to hold on to traditional forms of land use under changing frame conditions
- coal mining: decrease of open pit coal mining in the Lausitz region which impacts on local ground water tables altering site conditions to more wet or more dry conditions quite unpredictably, also impairment of the water quality due to iron hydroxide depositions which have negative impacts on wildlife (e.g. iron hydroxide can block the gills of fish)
- tourism: lately sharp increase in the number of visitors, especially for individual canoe tourism, visitors trespass into designated areas usually off-limits to them, to this effect a 'master plan for environmentally-friendly water tourism' was initiated
- construction: increased construction to accommodate additional visitors, illegal construction occurs in some cases in sensitive areas
- traffic: increased traffic, and hence a trend to increased sealing of areas to build parking lots and additional roads

Against this backdrop, for the cp³ project, the prior focus lies on the analysis of current impacts of agricultural production on biodiversity and ecosystem service provision and how those are influenced by existing governance approaches. A particular focus is given to collaborative governance approaches and how they help to preserve biodiversity and safeguard ecosystem services provision in the region.

Impressum

This factsheet is an outcome of the research project cp³ [ΦIII]:

'civil-public-private-partnerships (cp³): collaborative governance approaches for policy innovation to enhance biodiversity and ecosystem services delivery in agricultural landscapes'

ΦIII is funded through the 2013-2014 BiodivERsA/FACCE-JPI joint call for research proposals



with the national funders BMBF (Germany), FWF (Austria), and NWO (Netherlands)




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Layout: C. Sattler


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