



## **Integration for Biodiversity in Liechtenstein**

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## **1. Introduction**

Liechtenstein report<sup>1</sup> that the protection and use of biological diversity is affected by numerous economic sectors. This note discusses forestry, agriculture, land use planning, and tourism. There are also horizontal topic areas with a direct or indirect impact on biological diversity, such as research, education and public outreach, as well as international cooperation. Finally, biodiversity is addressed in the assessment of interventions in nature and landscape and in the handling of genetically modified and alien species.

## **2. Forest**

Liechtenstein has nationwide forest planning. Management of the forest areas is determined by the priority function (protection, wood use, nature protection, or recreation). Numerous foundations and control instruments are available to ensure the appropriate forest function. The nine municipal forestry operations are responsible for management of the forest, more than 90% of which are owned by municipalities or cooperatives. Sustainability control is included in the plans of the forestry operations and is also ensured via the National Forest Inventory.

The following goals of the forest management strategy show how promotion of biodiversity is integrated in this strategy:

- Near-natural silviculture as basic use;
- Designation of forest reserves and special forest areas: ensuring natural dynamics in the forest, conservation/promotion of rare plant and animal species, protection of ecologically valuable forest forms and types of usage;
- Ecological upgrading of the edges of forests;
- Promotion of pioneer phases with plenty of light and structure;
- Promotion/conservation of forest meadows;
- Protection of small waters and wet locations in the forest.

Near-natural management has been incorporated in legislation (Forestry Act) and is manifested in the FSC certification of the entire Liechtenstein forest.

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<sup>1</sup> Liechtenstein (2009). 4<sup>th</sup> National Report on Implementation of the Convention on Biological Diversity in the Principality of Liechtenstein, December 2009, 67 pp.

### **3. Agriculture**

The Agricultural Framework 2004 states: "The use of the agricultural areas is in principle governed by the Development Concept for Nature and Agriculture, which also ensures preservation of biodiversity and resources." Agriculture recognizes the population's need for agricultural practices that attach great importance to ecology.

The direct protection of biodiversity is primarily achieved through voluntary measures that are compensated financially. These measures mainly concern the creation and management of near-natural habitats. A prerequisite for the financial incentives made possible in this area was the separation of price and income policy in the revision of agricultural policy in the 1990s. This allowed adequate compensation of ecological services in agriculture that go beyond the legal requirements. To protect soil as a natural source, legal regulations exist that serve to guarantee soil fertility for the long term. These regulations are consistently implemented by the Proof of Ecological Performance as a general prerequisite for entitlement to direct payments.

### **4. Land use planning**

In a densely settled country like Liechtenstein, land use planning is a crucial factor for the successful protection of biodiversity. Land use planning as municipal and national planning is executed in Liechtenstein via the Construction Act. The 11 municipalities of Liechtenstein are responsible for communal planning, while the Government is responsible for transmunicipal and cross-border planning. Such planning must be undertaken in cooperation with the municipalities. In addition to the legal requirements, the basis for land use planning is made up of master plans and construction codes with zoning plans. The zoning plans include construction zones as well as agricultural and protection zones as the most important zones.

The Spatial Planning Report of 2008 outlines the situation of land use planning and spatial development in Liechtenstein as well the need for action. The large and largely-developed construction zones offer space for about 70,000 to 100,000 people with a current population of 35,000. The generous designation of construction zones has led to spread-out settlements, resulting in sprawling and costly infrastructure facilities and a high level of private transport. In municipal and national planning today, the goal is to promote an inward movement of the increasing density of settlements.

The National Master Plan was adopted by the Government in 2007. The National Master Plan outlines the long-term vision for spatial development in Liechtenstein. "Nature and landscape" is one of four areas spelled out in the National Master Plan (in addition to settlement, agriculture, and transport).

As a planning instrument binding on authorities, the National Master Plan – like the revised Construction Act – aims to improve coordination and harmonization among administrative offices engaged in spatial planning activities.

Many of the challenges facing a small country like Liechtenstein must be solved across national borders. An example of functional, cross-border planning is Liechtenstein's participation in the Swiss

agglomeration program. Together with the adjoining region of Werdenberg, Liechtenstein is striving to achieve joint settlement and transport development (Werdenberg-Liechtenstein Agglomeration Program).

## **5. Tourism**

The new Tourism Act of 2000 is guided by principles of sustainability and takes account of the concerns of the natural, societal and cultural environment. The law serves to promote tourism and governs the financing and organization thereof.

Tourism in Liechtenstein focuses on the capital Vaduz and the mountain area. With respect to diversity, the emphasis is on tourism in the mountain area. The mountain area is of great significance to a large number of plant and animal species. Like local recreation, tourism is a leisure activity that may adversely affect this habitat. Both topics are discussed in the Development and Conservation Concept for the Mountain Area. Approaches to solving conflicts between recreational use and wild animals were discussed in the Forest-Game Strategy 2000. One approach is to create quiet areas for wild animals, a concept for which is currently under development.

The conceptual work will continue by addressing the topic of tourism as part of a separate framework for tourism in the mountain area. On the basis of a suitability assessment for tourism, the framework will examine which forms of tourism are economical and sustainable in the Liechtenstein mountain area.

## **6. Biodiversity in the review of interventions**

An important point regarding the protection of biological diversity is to avoid negative consequences for the environment arising from projects and programs. Evaluation of environmental effects is one of the overarching focus areas of the Convention on Biological Diversity. Three tools are available in this regard in Liechtenstein: the Strategic Environmental Assessment, the Environmental Impact Assessment, and intervention procedures under the Nature Protection Act. The assessment procedures have different fields of application, but their functions complement each other.

### **Strategic Environmental Assessment**

Since May 2007, the Strategic Environmental Assessment Act (SUPG) has been in force in Liechtenstein. It serves to implement Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment (EEA Compendium of Laws: Annex XX – 2i.01). Until now, there has been no need to conduct a Strategic Environmental Assessment.

### **Environmental Impact Assessment**

The goal of the Environmental Impact Assessment Act of 1999 is to assess the impact of a project on humans, animals and plants, soil, water, air, climate, landscape, and property and cultural assets. The law is based on two directives incorporated into the EEA Agreement that concern the Environmental Impact Assessment and the reduction of environmental pollution (Directives 85/337/EEC and 96/61/EC).

The statistics of the Office of Environmental Protection show 21 projects between 1999 and 2009 that were subject to an EIA. In the case of eight other projects, an exception under the Environmental Impact Assessment Act was granted after further clarifications.

#### Intervention procedures under the Nature Protection Act

Pursuant to the Law on the Protection of Nature and Landscape of 1996, interventions outside the construction area are subject to an assessment of impact on landscape, flora and fauna. The law is implemented by way of a procedure for the review and approval of interventions in nature and landscape (intervention procedure). Key to the assessment of nature and landscape are the Inventory of Nature Priority Areas as well as objects worthy of protection and habitats especially worthy of protection. As is the case for the EIA, entitled organizations have the right to object. Approvals are only granted if adverse impacts can be avoided or compensated. Replacement measures with the same area or function can be demanded. In 2008, 33 procedures were carried out. 15 of these required a decision by the Government, while the others were settled in simplified procedures for small and unobjectionable interventions.

### **7. Handling of genetically modified and alien species**

In 1999, Parliament adopted a Law on the Handling of Genetically Modified or Pathogenic Organisms. Pursuant to the Customs Treaty with Switzerland, the relevant Swiss provisions also apply on a supplementary basis. One of the goals of the existing law is to preserve natural genetic diversity. It prohibits the manufacture of genetically modified or pathogenic organisms, release studies, and the handling of genetically modified or pathogenic organisms that, under international treaty law, are not admitted for circulation. An adjustment of these legal foundations is currently underway pursuant to the Deliberate Release Directive 2001/18/EC in the EEA Agreement.

The handling of alien and potentially invasive species is governed by the Law on the Protection of Nature and Landscape, the Fishery Act, the Hunting Act, and the relevant articles of the Swiss Deliberate Release Ordinance that also apply in Liechtenstein. According to the Nature Protection Act, the release or colonization of non-local plants or animals in the outdoors is prohibited. Options for combating invasive alien organisms are set out in the Deliberate Release Ordinance by way of the Customs Treaty with Switzerland. In the course of revision of the handling of genetically modified organisms, adjustments are also being made with respect to alien, invasive organisms by way of a separate Liechtenstein Deliberate Release Ordinance. As part of the series "Nature Research in the Principality of Liechtenstein", a publication on non-indigenous species appeared in 2006.

### **8. Research**

#### **Basic research**

The Institute of Architecture and Planning at the University of Liechtenstein does research on sustainable development. The Institute is participating in the project "Alpine Rhine Valley: Future Concepts for Settlement, Nature and Networking". The Institute does not carry out research work on

ecology and species. Nature research is carried out by the Office of Forests, Nature and Land Management on behalf of the Government, in close cooperation with private nature protection organizations.

Liechtenstein supports research activities abroad by making an annual contribution of CHF 250,000 each to Switzerland (Swiss National Science Foundation, SNSF) and Austria (Austrian Science Fund, FWF). As an EEA member, Liechtenstein also participates in the 7th Framework Programme for Research and Technological Development, which runs from 2007 to 2013.

### **Applied research**

Interreg is a promotion program of the European Union for cross-border cooperation that is financed by the European Fund for Regional Development (EFRD). Interreg aims to promote a balanced development in cross-border regions, thus making a contribution to European integration. The new program Interreg IV runs from 2007 to 2015. Liechtenstein is part of the promotion region "Alpine Rhine-Lake Constance-High Rhine" in the Interreg IV A program ([www.interreg.org](http://www.interreg.org)).

On the basis of joint strategies for sustainable spatial development, the program promotes the creation of cross-border economic and social "poles". One of the thematic focuses is the preservation of natural resources and cultural heritage.

## **9. Education and public outreach**

### **Education at schools**

The Ministry of Education of the Liechtenstein Government is responsible for scholastic education. The legal basis consists of the School Act and the Vocational Training Act along with their associated ordinances. For education in the field of environment and sustainable development, the Law on the Protection of Nature and Landscape additionally requires the promotion of nature and environmental education. Today, the subject "Humans and Environment" is a fixed component of the curriculum for mandatory school education.

In addition, further measures at a staffing and project level have been implemented since the Rio Summit in 1992. Examples are:

- Appointment of environmental officers at schools: In the 1990s, each school had an environmental officer, who was mainly responsible for implementing environmental education. Since the creation of the new curriculum, however, environmental education is integrated into the school's normal curriculum. Schools may, however, decide themselves whether they want to give a teacher a special mandate in a given field, such as the environment.
- Environment Days: Another initiative is the Environment Days, which are held regularly at the country's schools. Sometimes in cooperation with local authorities, children's awareness of nature is raised (Box 1).

- Environmentally friendly office and school material: A specific catalogue recommends environmentally friendly office and school material (paper, notebooks, writing utensils, etc.) to teachers.

- Excursions: Schools offer excursion and internship opportunities with specialists or institutions.

#### Box 1. Environment Days at schools.

##### Liechtenstein Forest Days

The Liechtenstein Forest Days were carried out for the third time in September 2009 by the Liechtenstein Forestry Service. The Forest Days are an event dedicated to the topic of forest and forest management. Its aim is to make students in Liechtenstein and the population more familiar with the forest. In 2009, a forest trail focused on the forest as recreation area, the forest as habitat, forest biodiversity, hunting, the forest as protection from natural hazards, forest maintenance, and timber. The origin of the Forest Days was the European Nature Conservation Year in 1995, when the Government issued the mandate to organize such an event for schools and the population. Since then, it has been carried out every seven years, with the goal of bringing every pupil into the forest once during his or her schooling period. Particularly noteworthy is the fact that within a single week, nearly all the pupils of the primary and secondary schools in Liechtenstein are able to participate. Together with other visitors, this adds up to more than 10% of the Liechtenstein population.

##### **Public information**

Public information falls within the competence and responsibility of the administrative offices working in the respective field. Examples of public outreach are:

- Public events such as annual forest tours conducted by the municipal forestry operations, actions of the environmental commissions of the municipalities;

- Reports in the Liechtenstein daily newspapers;

- Publications:

- o Publication series "Nature Research in the Principality of Liechtenstein";

- o Flora of the Principality of Liechtenstein in Pictures<sup>120</sup>;

- o Liechtenstein Environment Calendar: Issued annually since 1984 by the Government. Coordination is the responsibility of the Office of Environmental Protection. The 25th edition of the Environment Calendar in 2009 is dedicated to the theme "environmentally friendly". Each year, the calendar is designed by a school class which deals intensively with the assigned theme. The calendar is thus also an important instrument for raising children's awareness of environmental issues.

- Nature House in the Liechtenstein National Museum: Liechtenstein maintains its own Natural History Collection. Parts of this collection are shown at the National Museum in a permanent natural history

exhibit. In addition, temporary exhibits are presented.

### **Cooperation with private institutions and NGOs**

Various Liechtenstein institutions are also engaged in information and education: the Liechtenstein Society for Environmental Protection, the Botanical-Zoological Society of Liechtenstein-Sargans-Werdenberg, the Fishing Club, the Liechtenstein Alpine Club, the Forestry Club, and the National Ornithological Association.

Together with associations pursuing similar goals, these organizations are members of the CIPRA Liechtenstein network. CIPRA Liechtenstein is one of the national committees of the non-governmental organization CIPRA (International Commission for Protection of the Alps), which is headquartered in Liechtenstein. Between 1998 and 2004, it conducted the annual summer academy "Focus on the Alps" in Liechtenstein, which engaged in an interdisciplinary, transnational analysis of the problems facing the Alps. The State of Liechtenstein provided financial support for this project.

Liechtenstein is also engaged in the public outreach of the International Government Commission on the Alpine Rhine (IRKA). In addition to various media work, IRKA's public outreach includes excursions and a rotating exhibit presenting findings from the Alpine Rhine Development Concept.

## **10. International cooperation**

Despite the small size of the country, international cooperation plays an important role. Especially for a small state, regional and global cooperation for the protection of natural bases of life is indispensable. Liechtenstein is also aware of its responsibility toward disadvantaged regions, however. To the extent possible, Liechtenstein provides financial as well as practical support by seconding experts or carrying out concrete projects within the framework of multilateral cooperation. The Minister of Environmental Affairs, Land Use Planning, Agriculture and Forestry coordinates responsibilities on environmental issues and sustainable development. Regional cooperation with the neighboring countries Switzerland and Austria is especially important.

### **Relations with Switzerland**

The relations between Liechtenstein and Switzerland are very close. The two countries have concluded numerous bilateral agreements. The most important of these is the Customs Treaty, which forms the basis for legal adjustments and harmonization that go far beyond its actual scope of application, including in economic and social law. The Customs Treaty is also relevant to the field of environmental protection. Many Swiss environmental standards also apply to Liechtenstein.

### **Liechtenstein and the EU**

The relations with the EU are characterized by intensive cooperation. Since 1995, Liechtenstein has been linked with the European Union (EU) by an extensive association agreement – the Agreement on the European Economic Area (EEA). The agreement gives Liechtenstein access to the European single market. But it also governs flanking measures such as in the field of environmental protection. For this

reason, many of the EU environmental standards also apply in Liechtenstein. One example is the EU Water Framework Directive, which was incorporated into the EEA Agreement in 2007. Liechtenstein also participates actively and regularly in bodies such as the EFTA Working Group on the Environment, the European Environment Agency, and programs within the framework of Interreg.

In the Council of Europe, Liechtenstein participates within the framework of the Bern Convention and the "Environment for Europe" process in the development of programs and realization of measures to conserve biodiversity.

### **Regional and global environmental agreements**

Environmental foreign policy is one of five pillars of Liechtenstein's foreign policy. There is a large number of international agreements serving to conserve nature and the bases of life and to protect against harmful environmental impacts. Liechtenstein actively participated in the Rio Process and ratified all three of the major environmental agreements coming out of the Earth Summit – the Convention on Climate Change, the Convention on Biological Diversity, and the Convention to Combat Desertification. Of special importance to Liechtenstein is the Convention on the Protection of the Alps (Alpine Convention), which Liechtenstein ratified in 1994.

Liechtenstein ratified the Convention on Biological Diversity on 18 September 1997. The following list shows other important conventions ratified by Liechtenstein relating to the protection and sustainable use of the environment:

- Convention on Wetlands of International Importance, especially as Waterfowl Habitat (Ramsar Convention; LGBl. 1991 No. 87);
- Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention; LGBl. 1998 No. 156);
- Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention; LGBl. 1982 No. 42);
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (Washington Convention; LGBl. 1980 No. 63);
- United Nations Framework Convention on Climate Change (Climate Change Convention; LGBl. 1995 No. 118);
- Kyoto Protocol to the Framework Convention on Climate Change (LGBl. 2005 No. 49);
- Vienna Convention for the Protection of the Ozone Layer (Vienna Convention; LGBl. 1989 No. 37);
- Montreal Protocol on Substances That Deplete the Ozone Layer (LGBl. 1989 No. 38);
- United Nations Convention to Combat Desertification (Desertification Convention; LGBl. 2000 No. 69);

- Convention on the Protection and Use of Transboundary Watercourses and International Lakes (LGBl. 1998 No. 22);
- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, (LGBl. 1992 No. 90);
- Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention; LGBl. 1998 No. 157);
- Convention on Long-Range Transboundary Air Pollution (Geneva Convention; LGBl. 1984 No. 3)
- Convention on the Protection of the Alps and the protocols on spatial planning and sustainable development, mountain farming, conservation of nature and landscape protection, mountain forests, tourism, soil conservation, energy, transport, and solution of litigations (Alpine Convention; LGBl. 1995 No. 186).

With respect to forests, Liechtenstein is engaged within the framework of the Ministerial Conference on the Protection of Forests in Europe (MCPFE).

It is a matter of particular importance to Liechtenstein to support governmental and non-governmental organizations as well as partnerships. For instance, Liechtenstein makes an annual contribution to the Secretariat of CIPRA (International Commission for Protection of the Alps), an NGO with headquarters in Liechtenstein.

At the regional level, protection of the Alpine Rhine constitutes a focus of cross-border cooperation: Liechtenstein is a member of the International Government Commission on the Alpine Rhine (IRKA) for the cross-border planning of water management measures along the Alpine Rhine, the International Conference of Commissioners for Lake Constance Fishery (IBKF), the International Water Protection Commission for Lake Constance (IGKB), and the International Coordination Group for the Alpine Rhine/Lake Constance.

### **International humanitarian cooperation**

Conservation of the environment and promotion of a responsible and sustainable use of natural resources is one of the focuses of Liechtenstein's humanitarian cooperation. Liechtenstein's bilateral development cooperation focuses on the development of rural regions. It is carried out by the Liechtenstein Development Service (LED) on behalf of the Government of the Principality of Liechtenstein. One focus of the work is food security in rural areas. For this purpose, Liechtenstein works primarily with small farmers, who play an important role in most developing countries. One concern is the promotion of organic farming.

As an Alpine country, Liechtenstein is also engaged on behalf of the sustainable development of mountain regions. Its engagement includes financial but also staffing support by carrying out projects and providing experts in the Carpathians, the Caucasus, and Central Asia. In 2008, Liechtenstein spent

about CHF 25 million on international humanitarian cooperation, with a forecast ODA percentage of about 0.6%.