

The National Biodiversity Strategy and action plan, implementation status

1.1 National Biodiversity Strategy 2020

Article 6 of the CBD calls for the development of a national strategy for the conservation and sustainable use of biological diversity. Based on the information gathered within the preparation of the 4th CBD Report Liechtenstein has developed a national biodiversity strategy. During 2009 and 2010 representatives of the Government and NGOs held several workshops on that topic. The workshop results lead to the conclusion of a strategy until 2020 in order to conserve and to ensure a sustainable use of biodiversity in Liechtenstein. The strategy is based on one overall target, four sub-targets and 12 strategy elements:

Overall Target

The conservation and sustainable use of biodiversity is ensured.

Sub-targets

U1) We recognize biodiversity as core element for the conservation of nature, including food and livelihood, and take regard of its value and effects on nature.

U2) We ensure and support biodiversity by the legally binding designation of nature protection areas.

U3) We make use of our resources in a sustainable manner and under consideration of biodiversity targets.

U4) We take responsibility for our fair share of global biodiversity.

Strategy

Strategies to U1 - We recognize biodiversity as core element for the conservation of nature, including food and livelihood, and take regard of its value and effects on nature:

S1) We take responsibility with regard to biodiversity throughout all policy areas;

S2) we implement targets of biodiversity into planning- and steering processes of public and private actors;

S3) we conduct research and status assessments with regard to biodiversity and its effects on nature;

S4) we support capacity building with regard to biodiversity.

Strategies to U2 - We ensure and support biodiversity by the legally binding designation of nature protected areas:

S5) We conserve the most important habitats and species by designating nature protection areas;

S6) we conserve biodiversity and its effects on nature outside of nature protection areas by specific means of support;

S7) we support measures for the compensation of impacts on biodiversity caused by climate change.

Strategies to U3 - We make use of our resources in a sustainable manner and under consideration of biodiversity targets:

S8) We seek a high standard of life quality throughout the whole country's territory;

S9) we avoid losses of biodiversity through sustainable use activities in all economic areas;

S10) we deal with invasive species in an adequate way.

Strategies to U4 - We take responsibility for our fair share of global biodiversity:

S11) We support programmes and projects related to the conservation of biodiversity and its effects on nature within multilateral cooperation;

S12) we support projects abroad that contribute to the conservation and sustainable use of biodiversity.

1.2 National Action Plan on Biodiversity 2020

Based on the National Biodiversity Strategy Liechtenstein developed a respective action plan during the UN Year of Biodiversity in 2010. The action plan links at least one measure (action) of implementation to respective elements of the National Biodiversity Strategy. The action plan also provides information on the competent authorities and the dates of intended implementation. The Biodiversity Strategy as well as the National Action Plan 2020 was passed by the Government in 2010.

Action Plan

Actions to S1 - we take responsibility with regard to biodiversity throughout all policy areas:

| Action | Description | Responsibility | Time |
|--------|--|--|------|
| A1-S1 | Clarification of organisational structure within Liechtenstein's National Museum | Ministry for Infrastructure, Environment and Sport (MIU) | 2010 |

Actions to S2 - we implement targets of biodiversity into planning- and steering processes of public and private actors:

| Action | Description | Responsibility | Time |
|--------|--|--------------------------------------|--------|
| A1-S2 | „Bauen mit Natur und Landschaft“, publication by the Office of Forests, Nature and Land Management (AWNL) (June) | Office of Environment (AU) | 2010 |
| A2-S2 | Development of management plans considering potential mudflows and its corresponding infrastructure and biodiversity impacts | AU/ Office of Civil Protection (ABS) | - 2018 |

Actions to S3 - we conduct research and status assessments with regard to biodiversity and its effects on nature:

| Action | Description | Responsibility | Time |
|--------|---|----------------|---------|
| A1-S3 | Mammal inventory | AU | 2011/12 |
| A2-S3 | Establishment of a comprehensive monitoring concept for long term biodiversity development (criteria, indicators) | AU | - 2012 |

Aktionen zu S4 – we support capacity building of biodiversity:

| Action | Description | Responsibility | Time |
|--------|---|---|---------|
| A1-S4 | Open Day at Landesforstbetrieb (October) | AU | 2010 |
| A2-S4 | Announcement of the UN Year of Biodiversity in April 2010 along with a digital exhibition about the habituated flora and fauna; introduction of the National Biodiversity Strategy 2020 | AU/MIU/ Botanisch-Zoologische Gesellschaft (BZG) | 2010 |
| A3-S4 | „Bauen mit Natur und Landschaft“ – excursions to several communities (practical project insights) – summer, spring 2010: nature greening of rooftops organized by LGU | AU/Liechtensteinische Gesellschaft für Um- weltschutz (LGU) | 2010 |
| A4-S4 | „Forest and Nature Protection“ – AWNL-publication (Nov. 2010) | AU | 2010 |
| A5-S4 | Conclusion of UN Year of Biodiversity 2010 including topic related presentations (Dec. 2012) | AU | 2010 |
| A6-S4 | Labeling/Signposting of designated nature protection areas | AU | 2010/11 |
| A7-S4 | Organization of events with biodiversity related topics (hedge and forests maintenance, dry stone walls) | AU, NGOs | - 2020 |
| A8-S4 | Set-up of a website dealing with biodiversity, www.natur.li | AU | 2010 |
| A9-S4 | Botanic excursion of the BZG, together with the Swiss Botanic Society | BZG | 2010 |
| A10-S4 | Planting Plants Days in several kindergarden hosted by local forest services | Forest Services | 2010 |
| A11-S4 | Capacity building for teachers | AU | 2010 |
| A12-S4 | Excursions organized by AWNL | AU | 2010 |

Aktionen zu S5 - we conserve the most important habitats and species by designating nature protection areas:

| Action | Description | Responsibility | Time |
|--------|--|-----------------------------|---------|
| A1-S5 | Designating the area of Bofel – Langwiesen (Triesen, Balzers) as nature protection area by law | AU | 2010/11 |
| A2-S5 | Designation of wildlife areas and zones for winter rest of wild animals | AU/Liechtenstein Hunters | 2010 |

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|-------|--|--------|--------|
| A3-S5 | Designation of the area Stauden (Gamprin, Ruggell) as nature protection area by law | AU | - 2013 |
| A4-S5 | Designation of further protection areas according to the Inventory of Nature Priority Areas | AU | - 2020 |
| A5-S5 | Implementation of the Inventory of Nature Priority Areas regarding biotope | AU | - 2015 |
| A6-S5 | Protection of the Mareewiesen (Vaduz) by City of Vaduz and Liechtenstein | AU/LGU | 2010 |
| A7-S5 | Clarification of protection goals with regard to individual special forest areas and organization of implementation measures | AU | 2010 |
| A8-S5 | Assessment of the effectiveness of measures that are intended to protect and maintain protected areas | AU | - 2018 |

Action to S6 - we conserve biodiversity and its effects on nature outside of nature protected areas by specific means of support:

| Action | Description | Responsibility | Time |
|--------|--|--|-----------|
| A1-S6 | Implementation of Inventory of Nature Priority Areas regarding natural monuments | AU | - 2012 |
| A2-S6 | Adaptation of Art. 2 Forest Act (forest definition) as basis of the ENL-concept | AU/MIU | 2010 |
| A3-S6 | Implementation of ENL-concept, especially protection of networking links | AU | 2010 - 20 |
| A4-S6 | Ongoing re-naturalisation of streams according to criteria of biodiversity | AU/ (ABS) | - 2020 |
| A5-S6 | Management of wild animal feeding program at Ställa-Schwabbrünnen | AU/Office of Construction and Infrastructure (ABI) | 2010 - 12 |
| A6-S6 | Raising the protection status of the remaining commons and its conservation as park area | AU | - 2015 |

Actions to S7 - we support measures for the compensation of impacts on biodiversity caused by climate change:

| Action | Description | Responsibility | Time |
|--------|--|----------------|--------|
| A1-S7 | Showing the consequences of a temperature increase of 2 C° for the Liechtenstein forest and mountain areas and organisation of public discussions around appropriate adaptation measures | AU | - 2015 |

Aktionen zu S8 - We seek a high standard of life quality throughout the whole country's territory:

| Action | Description | Responsibility | Time |
|--------|---|-----------------------------|--------|
| A1-S8 | Conservation of free and natural landscapes and nature-oriented areas outside of settlement areas | Communities, Government, AU | - 2020 |

Action to S9 - we avoid losses of biodiversity through sustainable use activities in all economic areas:

| Action | Description | Responsibility | Time |
|--------|------------------------------------|----------------|----------|
| A1-S9 | Support of regional products sales | AU/LGU | 2010 -20 |

Actions to S10 - we deal with invasive species in an adequate way:

| Action | Description | Responsibility | Time |
|--------|--|-----------------|--------|
| A1-S11 | „Das Schwarzwild kommt“ – public oral presentation | Silberner Bruch | 2010 |
| A2-S11 | Development of a specific step-by-step approach with regard to activities related to <ul style="list-style-type: none"> - competencies/contact persons - early recognition - monitoring | AU | - 2014 |

Actions to S11 - We support programmes and projects related to the conservation of biodiversity and its effects on nature within multilateral corporation:

| Action | Description | Responsibility | Time |
|--------|---|----------------|--------|
| A1-S13 | Cross-border corporation with respect to the conservation of the moorlands between Ruggell and the Ill outlet | AU | - 2020 |
| A2-S13 | Egelsee | AU/ABS | 2010 |

Actions to S12 we support projects abroad which support biodiversity.

| Action | Description | Responsibility | Time |
|--------|--|---------------------------------|------|
| A1-S14 | The Government together with the Liechtenstein Development Service (LED) provide development aid and therefore contribute to a sustainable use of biodiversity | Office for Foreign Affairs /LED | 2020 |

1.3 Implementation of the Strategy and the Action

Actions to S1 - we take responsibility with regard to biodiversity throughout all policy areas:

The organisation of the structure within Liechtenstein's National Museum has been clarified in due time. The state-owned biology collection got its home at the National Museum within a permanent exhibition. The respective exhibits are now accessible to the public, especially for educational purposes.

With regard to the further content of S1 it should be mentioned that due to the small size of the country conflicts of interest occur very often when it comes to the conservation of biodiversity. Consequently balancing the various interests mostly takes place on a political level, especially with regard to the question if biodiversity is given priority in relation to other interests. The obvious conflicts in space requirements with regard to revitalisation of water courses may serve as an example. These areas are often used agriculturally and therefore by law enjoy a priority in conservation.¹ In most cases policymakers have given, however, priority to the area improvement as a living environment. Another actual example is the balance of interest between building a new cycleway along a nature protection area and through a wildlife corridor. The decision whether non-motorized transport or the conservation of biodiversity should be given priority is still pending.

Generally the interests of agriculture, nature and landscape, including biodiversity always form part of the basis of decision-making within Liechtenstein's policies. The respective decisions are however not always in favour of biodiversity interests.

Actions to S2 - we implement targets of biodiversity into planning- and steering processes of public and private actors:

Both targets under this action plan have been reached in time. The brochure „Bauen mit Natur und Landschaft“ of the former Office of Forests, Nature and Land Management (AWNL) was published in 2010. The brochure is dedicated to future building owners and aims at putting a focus at these building and construction activities where aspects of nature and landscape may be considered and a respective contribution to biodiversity could be possible. This could for instance be the case when planning the compound boundaries to the neighbours or to the public space. The same is true for the adequate choice of plants. The brochure provides some incentives, ideas and information on how natural habitats may be conserved and further developed.

Since 2012 the Office of Environment and the Office for Civil Protection conduct annual meetings in order to exchange on new constructions or renovations of mudflow (debris flow) infrastructures. The exchanges ensure that aspects of biodiversity are considered at all time. For instance all through earthwork artificially build ruderal sites in areas with a high risk of neophytes have been greened with local plants immediately afterwards in order to avoid the settlement of neophytes. Since the end of 2018 a neophyte concept also exists.

With regard to this strategy element it should be mentioned that biodiversity targets are already implemented in many public and private planning and steering processes. One of the most important elements with regard to spatial planning is the “National Master Plan” (a countrywide land use plan) and their

¹ Gesetz über die Erhaltung und Sicherung des landwirtschaftlich nutzbaren Bodens, LGBl. 1992 Nr. 41

linked community land used plans.² The National Master Plan as well as the community use land plans have experienced a growing attention towards the interests of nature and landscape over the past years. In addition to that land use plans generally have to go through a strategic environmental impact assessment (SUP).³ Concrete bigger buildings have to be checked against an impact assessment of environmental sustainability (UVP)⁴ and smaller buildings outside of construction zones need to comply with the intervention procedures of the Nature Protection Act (NSchG).⁵

This top-down approach ensures that the interests of nature and landscape within area planning are adequately respected. In addition to that a legal loophole within the Nature Protection Act has been removed in 2013. From 2013 on the law now requires a separate assessment of environmental impacts in cases where a reclassification of non-building land into building land is requested. It is now ensured that sensitive nature areas, habitats or forest sites and natural monuments according to the Inventory of Priority Areas are no longer destroyed without compensation.

Actions to S3 - we conduct research and status assessments with regard to biodiversity and its effects on nature:

The Actions to A1-S3 have been implemented in due course; the mammal inventory has been set up and published. Action A2-S3, which aims at the establishment of a comprehensive monitoring concept for the long-term biodiversity development could not have been implemented as envisaged. Although a meeting with experts from Hintermann and Weber AG who are in charge of managing the national biodiversity monitoring programme of Switzerland took place the further project implementation was stopped due to the high annual costs which were associated with the monitoring. Due to the extraordinary division into landscape units the amount of required random samplings per habitat in order to receive adequate results on biodiversity aspects was considered as too high taking into account the small size of the country. Hence, the project has been postponed until further notice. Meanwhile the existing concept of research and monitoring will continue. That means that important indicators like birds, fishes, plants, reptiles, etc will be mapped in 10-20 year terms. The results will be compared with earlier findings. In the future attention will be given to the applicable methodology in order to ensure that the mapping is reproducible and applied over different sites in the country. These data will be digitally stored in a biodiversity database. It will also be ensured that the Red Lists will be managed according to IUCN criteria.

In addition it is planned to further develop a Liechtenstein database on biodiversity where all collected data with regard to flora and fauna is stored. Based on that data information it is envisaged to develop a better monitoring, especially with regard to building and area planning activities.

In line with the strategy several mappings on rough pasture habitats, on mammals as well as on fishes and crayfish have been launched and concluded. Activities with regard to the mapping of breeding birds in Switzerland and Liechtenstein are also finished. The breeding bird atlas was published in early 2019.

Action to S4 - we support capacity building with regard to biodiversity:

² Baugesetz (BauG), LGBl. 2008 Nr. 44

³ Gesetz über die Strategische Umweltprüfung (SUPG), LGBl. 2007 Nr. 106

⁴ Gesetz über die Umweltverträglichkeitsprüfung (UVP), LGBl. 2014 Nr. 19

⁵ Gesetz zum Schutz von Natur und Landschaft (NSchG), LGBl. 1996 Nr. 117

The majority of actions within in the action plan have been implemented in time. In 2013 all nature protection areas have been re-signed. In the course of 2014 the wild animal zones will be re-signed accordingly. All measures from the action plan under S4 have thus been implemented.

Besides these action plan related targets the Office of Environment and several private environmental NGOs organise numerous relevant public relation activities (publications, excursions, presentations, etc) throughout the year. Every 7 years a specific so called Forest Day is organized where students of Liechtenstein will be given lessons within the forests about the forest and its functions. Other relevant topics such as waters or energy are dealt with in schools during special thematic days. In addition natural science forms an integrated part of the curriculum in Liechtenstein schools. Knowledge about nature, landscape and biodiversity is therefore delivered and supported to Liechtenstein students of all ages.

Actions to S5 - We conserve the most important habitats and species by designating nature protection areas:

By the end of 2011 and after period of more than 30 years Liechtenstein allocated a faunistically valuable area the legal status of a nature protected area.⁶ One year later the next designation of a nature protected area followed, raising the total amount of such areas in Liechtenstein to eleven.⁷ Legal protection was also achieved with regard to wild animals due to the respective designation of new wildlife areas and zones for winter rest.⁸ The designation of these new and spacious zones did not enjoy full support within the country's population and was therefore under review but are now designated. Additionally in 2013 the first legally protected landscape has been designated.⁹ In sum the actions A1, A2, A4, A5 and A6 have been fully implemented on time.

Further designations of eligible natural areas according to the Inventory of Nature Priority Areas are currently under consideration.

Generally the past 2 years saw more designations of nature protection areas/landscapes than the previous 30 years. Considering the small size of the country and the fact that diverse interests of land use within the very limited space available may constantly lead to certain conflicts the achieved designation of new protected areas can be described as success.

Actions to S6 - we conserve biodiversity and its effects on nature outside of nature protection areas by specific means of support:

Liechtenstein's natural monuments are recorded in the Inventory of Nature Priority Areas. However, currently these monuments do not enjoy any legal protection. In order to change this situation the Inventory of Nature Priority Areas is currently under review. The assessment will be concluded in 2014/15 and be followed by the enactment of a respective ordinance in order to allocate Liechtenstein's natural monuments the legal protection they deserve.

The adaptation of Liechtenstein's Forestry Act with regard to the definition of forests will be implemented in 2015 (A2). The implementation of actions A3 to A6 is currently on hold due to a lack of resources.

⁶ Verordnung über das Naturschutzgebiet „Matilaberg“ in der Gemeinde Triesen, LGBl. 2011 Nr. 521

⁷ Verordnung über das Naturschutzgebiet „Mareewiesen“ in Vaduz, LGBl. 2013 Nr. 1

⁸ Verordnung über den Wildtierschutz (WTSchV), LGBl. 2012 Nr. 381

⁹ Verordnung über das Landschaftsschutzgebiet „Periol, Bofel, Neufeld, Undera Forst“ in der Gemeinde Triesen (LGBl. 2013 Nr. 311)

Actions to S7 - we support measures for the compensation of impacts on biodiversity caused by climate change:

The preparations for a national adaptation strategy on climate change are completed. The respective measure formulated under S7 will be implemented in due time.

Actions to S8 - We seek a high standard of life quality throughout the whole country's territory:

The conservation of free and natural landscapes and nature-oriented areas outside of settlement areas as a measure under S8 may also be considered as outcome of other measures contained within the action plan. To that respect all measures under S5 contribute to the fulfilment of the mentioned conservation. The same is true for some measures under S2.

At the legislative level Liechtenstein has only established a few provisions within the field of spatial planning.¹⁰

Especially the so called land use plans and some specific legal provisions provide the framework for Liechtenstein's area planning. The most important legal measures that control a further extension of settlement compounds and provide means to mitigate a scattered urbanisation are the nature protection areas based on the Nature Protection Act (NSchG) and Waters Protection Act (GSchG) as well as the Building Act (BauG) which defines the construction scope within the separate zones based on the respective Master Plans and land use plans. A reclassification into building land may only be granted if a corresponding demand is proved. Such demand does currently not exist in any of Liechtenstein's 11 communities.¹¹

Besides these legal and planning measures it should be mentioned that a supraregional urbanisation program has been developed in 2012. The program's goal is to mitigate the ongoing scattered urbanisation in the region.¹²

Action to S9 - we avoid losses of biodiversity through sustainable use activities in all economic areas:

The establishment of the "Foundation Agrarmarketing Liechtenstein" in 2008 stated the beginning of action A1 under S9. In order to further strengthen the partnership between farmers and consumers and to support the sales of regional products the foundation has developed the brand «natürlich vo do». Such brands provide information to consumers with respect to the product's origin and serves as an additional purchase argument. Products that are labelled with «natürlich vo do» stand for fresh products with short transportation distances.

Marketing regional products contributes to an increase of value added and serves the conservation of regional structures and traditions.¹³

Within the forestry sector the community "Holzkreislauf" aims at similar goals, since it supports a sustainable utilization of forests.¹⁴

¹⁰ Baugesetz (BauG), LGBl. 2008 Nr. 44

¹¹ http://www.agglomeration-werdenberg-liechtenstein.ch/pdf/110811_Synthesebericht_mAnhang.pdf - Seite 34, Abb. 4

¹² <http://www.agglomeration-werdenberg-liechtenstein.ch> - as of July 2014

¹³ <http://www.vodo.li/> - as of July 2014

¹⁴ <http://www.holzkreislauf.li> - as of July 2014

This measure can, however, not be realized in other economic sectors since Liechtenstein does not have any other natural or marketable resources and due to its small size the potential demand (in absolute terms) would be considerably small as well. Consequently many resources are imported to Liechtenstein for further processing before they are exported again. The service sector, however, takes a more important role at least to certain extends. In this context the activities of the Carlo Foundation and LIFE Climate Foundation Liechtenstein are noteworthy. Carlo Foundation focus on the implementation of a rating system for financial products based on various sustainability indicators. LIFE Climate Foundation also covers sustainability issues within its activities. By organizing public events and publishing articles on regular bases the activities of LIFE Climate Foundation contribute to a rising awareness in the Liechtenstein population with respect to environmental topics.

Action to S10 - we deal with invasive species in an adequate way:

All measures listed under S10 were implemented in due time. With the enactment of the Organism Act and its corresponding ordinances in 2011 the legal grounds to deal with invasive organisms were set.^{15 16}

Based on these legal grounds the Government developed a neophyte concept, including a respective action plan. A designated focal point was established at the Office of Environment in order to address problems related to neophytes in a centralized manner. In addition, in 2013 a web-based geo information system (GIS) was introduced which besides other tasks records the types and locations of all known neophytes in Liechtenstein.¹⁷ Consequently the evolvment of new neophyte or the extensions of neophyte areas are detected much earlier with GIS. Besides that GIS is extremely helpful in order to qualify potential new problematic areas and thus helps to work out the appropriate national priorities with respect to neophyte counter measures.

One result of the GIS observations is for instance that the invasive goldenrod in the biggest nature protected area the Ruggeller Riet is mowned three times a year.

First positive effects occurred 2014 when GIS data was compared to data from previous years. Definitive results will be available soon based on GPS-based measurements of the recorded neophyte stock. The awareness for problems that come along with invasive species is constantly rising – on both countrywide and community levels. The latter is proven by the growing number of volunteers that help the communities at specific “neophyte days”.

Action to S11 - We support programmes and projects related to the conservation of biodiversity and its effects on nature within multilateral corporation:

Multilateral corporation plays an important role within the external relations of Liechtenstein. In that context Liechtenstein constantly provides financial as well as human resources for multilateral based projects. Special attention is given to international cooperation with the neighbouring countries Switzerland

¹⁵ Gesetz über den Umgang mit genetisch veränderten, pathogenen oder gebietsfremden Organismen (Organismengesetz; OrgG), LGBl. 2011 Nr. 4

¹⁶ Verordnung über den Umgang mit pathogenen oder gebietsfremden Organismen in der Umwelt (Freisetzungsverordnung; FrSV), LGBl. 2011 Nr. 90

¹⁷ <http://geodaten.llv.li/geoportal/neophyten.html> - as of July 2014

and Austria. The Ministry for Home Affairs, Education and Environment coordinates the contributions to projects of sustainable development and environmental projects.

The cross border cooperation with the authorities of Vorarlberg (Austria) in order to conserve the moorlands between Ruggell (FL) and the Ill outlet (A) is an ongoing project with an open time horizon. In 2013 two onsite visits took place at the Rugeller Riet (FL) and Bangser Riet (A). The aim of the meeting was to agree on joint measures to further mitigate neophyte development at these locations.

The project “Egelsee” a joint initiative of Liechtenstein and Austria was successfully concluded in 2012/2013. The (new) Egelsee is a small lake that is located directly on the border line of Liechtenstein and Austria and serves as a retention lake especially during heavy rainfalls. In addition to that the Egelsee also provides an ecological upgrade for flora and fauna.

Action to S12 - we support projects abroad that contribute to the conservation and sustainable use of biodiversity:

The conservation of the environment and the support for a responsible and sustainable use of natural resources forms a core element of Liechtenstein’s international humanitarian cooperation and development. Liechtenstein’s bilateral development corporation lies within the responsibility of the Liechtenstein Development Service (LED). The corporation focuses on food security in rural areas. To that respect LED envisages a corporation with the local farmers since they play a key role in most developing countries. It is worth mentioning that the promotion of ecological farming forms an integrated part of every agricultural corporation. A list of current projects is available of the LED’s website.¹⁸ LED is currently engaged in 13 priority countries (Fig. 15).



¹⁸ <http://www.led.li> – as of July 2014