Subsidies with a harmful impact on biodiversity in the Principality of Liechtenstein

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SUMMARY

This study is motivated by two key factors: the worrying state of biodiversity in the Principality of Liechtenstein, and the international obligation under the Convention on Biological Diversity to identify, abolish or reform financial incentives and subsidies with a harmful impact on biodiversity by 2030. This commitment is detailed in the Biodiversity Action Plan 2030+. According to the plan, such subsidies are to be identified and progressively reduced, minimised or abolished, and, where possible, replaced with alternative incentives that promote biodiversity.

In Switzerland, a compilation of subsidies with a harmful impact on biodiversity was published in 2020. The present report builds on that Swiss study in terms of methodology. Accordingly, subsidies are understood to include direct payments, tax and levy concessions, as well as non-internalised external costs. The report covers six key sectors: energy, agriculture, settlement development, tourism and recreation, transport, and forests.

This report considers only those subsidies that are detrimental to biodiversity, excluding those that promote it. The impact of the subsidies on biodiversity is not analysed in relation to their primary objectives; however, major trade-offs are identified. The chapters covering the individual sectors are structured in tabular form: each subsidy is briefly described (scope of subsidy and potential impact on biodiversity), quantified where possible, the degree of negative impact is assessed, and the legal basis is provided. One or more potential solutions are proposed for each subsidy.

A total of 52 subsidies with a harmful impact on biodiversity were identified. It should be noted that this figure includes both very small or highly fragmented subsidies and some that, under a narrower definition, might not be classified as subsidies at all. The impact of subsidies on biodiversity can vary significantly. It depends, among other factors, on the vulnerability of the affected ecosystems or species, the size of the areas concerned, the level of the subsidy, and the duration of subsidisation.

Each subsidy was broadly assessed in terms of its level of harm. Many of the identified subsidies have only minor negative impacts on biodiversity (21 are considered to have low impact, 20 moderate, 7 high, and for 4 the impact is unclear). It is characteristic of biodiversity loss that numerous small, moderate, and some more severe impacts collectively endanger and degrade biodiversity. For each subsidy, an assessment was also made as to whether its impact is wholly, partially, or conditionally harmful – depending on how it is implemented. In most cases, the subsidies were found to have either a partially detrimental effect or one that depends on implementation.

The following provides an overview of the subsidies in the six areas examined:

In the area of **energy generation and distribution**, 7 subsidies were identified, 4 of which have a low detrimental impact on biodiversity and 3 a moderate one. Liechtenstein subsidises energy generation from hydropower by waiving water charges, and supports wood-fired heating systems through, among other measures, subsidies for their installation. In addition, the energy consumption of certain companies is subsidised through exemptions from or refunds of the CO_2 levy, including for companies participating in the emissions trading system. The price per tonne of CO_2 in the trading system is low compared to the CO_2 levy, although the legal basis for this lies in the Customs Treaty with Switzerland, which significantly limits Liechtenstein's room for manoeuvre. The impact on biodiversity varies depending on the

energy sources used. In the case of wood, for example, this may lead to high levels of wood harvesting that exceed the sustainable supply of energy wood, resulting in overexploitation of forests. The subsidised use of fossil fuels through waived or reduced CO_2 levies further exacerbates the climate crisis, with well-known negative effects on biodiversity.

In the area of **agriculture**, 21 subsidies with a harmful impact on biodiversity were identified: 5 with a low impact, 9 with a moderate impact, 5 with a high impact, and 2 where the impact is unclear. Liechtenstein subsidises agriculture in various ways, including measures to improve economic viability – such as area-based and livestock-based operating payments, additional subsidies for mountain areas, for animal husbandry, and for selected arable crops. Structural improvements, marketing, and – on a smaller scale – animal breeding are also subsidised. Further subsidies include the reduced VAT rate on agricultural inputs and border protection measures. Here too, the legal basis is provided by the Customs Treaty and other agreements (e.g. the VAT treaty) with Switzerland, which significantly limits Liechtenstein's room for manoeuvre. Depending on the scope and application, these agricultural subsidies can contribute to the intensification of agricultural production and thereby cause or exacerbate biodiversity loss through over-fertilisation of ecosystems, pesticide inputs, landscape homogenisation, and other impacts.

In the area of **settlement development**, 7 subsidies with a harmful impact on biodiversity were identified – 4 with a low impact and 3 with a moderate impact. Liechtenstein subsidises land use for settlement by, among other measures, covering site development costs, waiving the betterment levy in cases of rezoning or upzoning, and exempting residential property and rental income from VAT. Income from the rental or sale of residential property is also exempt from income and corporate tax, representing an additional financial benefit. Targeted support for new settlements, as well as broad economic development measures, further increase land use or commuter traffic. This contributes to habitat loss and fragmentation. Additional pressures arise from material and physical pollution, such as wastewater discharge, light pollution, and noise emissions.

In the area of **tourism and recreation**, 3 subsidies with a harmful impact on biodiversity were identified – 2 with a low impact and 1 with a moderate impact. Liechtenstein supports tourism and recreation through financial contributions, the allocation of visitor's tax revenues to Liechtenstein Marketing, and a one-off subsidy to the Bergbahnen Malbun mountain lifts. Tourism and recreation negatively affect biodiversity through noise emissions, overuse of ecosystems at tourist sites, and increased traffic. The infrastructure required to support these activities fragments ecosystems and contributes to further habitat loss.

In the area of **transport**, 11 subsidies with a harmful impact on biodiversity were identified: 4 with a low impact, 3 with a moderate impact, 2 with a high impact, and 2 with unclear impact. Liechtenstein subsidises transport in various ways. The most significant issue for biodiversity is motorised road traffic, particularly private transport. This is supported through tax and fee concessions, such as the refund of mineral oil tax, exemption from the motor vehicle tax, the lack of a CO_2 levy on fuels, and municipal parking fees that do not cover costs. These measures lower the cost of CO_2 emissions, thereby contributing to the climate crisis and its associated detrimental impacts on biodiversity. By subsidising transport infrastructure, Liechtenstein also reduces the cost of its use, which further contributes to the fragmentation of habitats.

In the area of **forests**, 3 subsidies with a harmful impact on biodiversity were identified: 2 with a low impact and 1 with a moderate impact. Liechtenstein subsidises forest-related measures as part of mountain area restoration and protection forest maintenance. Such measures can come into conflict with biodiversity conservation, for example if too little deadwood is left in the forest (Liechtenstein has an above-average proportion of deadwood compared to neighbouring countries – 11% of the total wood volume), if access roads are needed, or if dynamic natural processes are suppressed.

The report outlines possible solutions for each identified subsidy. The most frequently proposed measure is to grant subsidies only under certain conditions – specifically, with consideration for biodiversity. In individual cases, redirecting the subsidy towards non-detrimental activities or abolishing it altogether is recommended. One key conclusion from the preparation of this report is that conflicts between primary subsidy objectives and impacts on biodiversity should be mitigated or avoided at the level of political objectives. This could be achieved by giving equal priority to biodiversity and nature conservation goals in the formulation of sectoral policies and, consequently, in the design of subsidy schemes. In doing so, the instruments used to achieve primary objectives (e.g. subsidies) would require little or no modification to reduce their detrimental impact on biodiversity. However, such changes and adaptations aimed at reducing biodiversity harm increase the complexity of implementation and monitoring within the administration – for example, by introducing conditions for the allocation of subsidies – and make limiting or eliminating detrimental impacts on biodiversity both challenging and resource-intensive.

INTRODUCTION

1. State of biodiversity in the Principality of Liechtenstein

Biodiversity is under significant pressure worldwide and, in some cases, has already been severely depleted or destroyed.[1] Liechtenstein is no exception, with various habitats facing considerable pressure.[2] Despite its small surface area, Liechtenstein hosts a disproportionately high number of habitat types and supports species communities across all altitudinal zones from 450 to 2,600 metres above sea level – including over 1,500 vascular plants, 440 moss species and 1,700 species of fungi. However, the negative trend in species numbers observed in recent decades, along with the growing number of endangered species on the Red List, is deeply concerning. For instance, more than 40% of all native breeding bird species, over 60% of reptiles and amphibians, and more than 70% of fish and crustacean species in Liechtenstein are now on the Red List of Threatened Species. The landscape types in Liechtenstein that are important for biodiversity are facing a range of challenges. Some of these are outlined below as examples.[3]

Forests: Challenges in the forest include safeguarding old-growth stands, establishing forest reserves, and ensuring effective management of designated special forest areas. Additional priorities include improving forest edges that are largely ecologically degraded, reducing airborne nitrogen deposition, preserving deadwood resources in lowland areas, and addressing the spread of invasive species that threaten the forest's ecological balance and displace native species.

Agriculture: Agriculture is a key driver of biodiversity loss due to intensive land use – for example, through ecosystem pollution from pesticides, over-fertilisation of habitats, livestock farming reliant on imported feed and fertilisers, and habitat loss caused by the removal of small landscape features, drainage, or irrigation. At the same time, agriculture is itself affected by the consequences of species decline. Many cultivated plants, for instance, depend on pollinators such as bees and butterflies, while healthy ecosystems with a rich diversity of species support natural predators of pests and diseases.

Settlement development: The expansion of settlements – particularly through infill development – leads to increased soil sealing and intensifies habitat loss and fragmentation. Light and noise emissions introduce new or exacerbate existing fragmenting effects. Non-native plant species are often used in garden landscaping and may spread into surrounding

[1] IPBES (2019), Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. S. Díaz, J. Settele, E. S. Brondízio E.S., H. T. Ngo, M. Guèze, J., Agard, A. Arneth, P. Balvanera, K. A. Brauman, S. H. M. Butchart, K. M. A. Chan, L. A. Garibaldi, K. Ichii, J. Liu, S. M. Subramanian, G. F. Midgley, P. Miloslavich, Z. Molnár, D. Obura, A. Pfaff, S. Polasky, A. Purvis, J. Razzaque, B. Reyers, R. Roy Chowdhury, Y. J. Shin, I. J. Visseren-Hamakers, K. J. Willis, & C. N. Zayas (eds.). IPBES Secretariat, Bonn, Germany.

[2] RENAT AG (2023), Entwicklung von Biodiversität und Landschaft in Liechtenstein, Modellräume und Massnahmen, commissioned by the Hilti Family Foundation Liechtenstein (HFFL): https://static1.squarespace.com/static/60058441dfad4a364920430b/t/6488227a1682fe5759ff9310/1686643329031/Biodiversit%C3%A4tsmonitoring+LI+Modellr%C3%A4ume_Massnahmen+Feb23.pdf.

[3] Government of the Principality of Liechtenstein (2024), Biodiversity Action Plan 2030+: https://www.llv.li/serviceportal2/amtsstellen/amt-fuer-umwelt/wald-natur-landschaft/natur-und-landschaft/aktionsplan-biodiversitaet-2030-en.pdf. See also RENAT 2023. https://static1.squarespace.com/static/60058441dfad4a364920430b/t/6488227a1682fe5759ff9310/1686643329031/Biodiversit%C3%A4tsmonitoring+LI+Modellr%C3%A4ume_Massnahmen+Feb23.pdf.

areas. In addition, material inputs from traffic, such as tyre abrasion, and the leaching of pesticides pollute habitats near roads, residential areas, and water bodies.[4]

Watercourses: A large proportion of the watercourses in the valley areas have been straightened and lack structural diversity, making them poorly or not at all suitable as habitats for aquatic species. Residual flow sections, the input of pollutants from agriculture and settlements, and rising temperatures due to climate change place additional pressure on these ecosystems. According to the Red List Index, fish – alongside amphibians – are among the most endangered species groups in Liechtenstein.[5]

Proposal: In Switzerland's alpine zone, various land use trends are emerging that have a detrimental impact on biodiversity. On the one hand, the use of certain areas is being intensified – often due to new or improved access infrastructure – leading to increased nutrient inputs, the removal of small landscape features, and the homogenisation of alpine pastures. On the other hand, some areas are no longer being managed, which – when followed by scrub encroachment – also results in a decline in biodiversity. The growing recreational use of alpine areas places further pressure on biodiversity. Habitats are affected by noise and light pollution and are fragmented and reduced in size due to infrastructure expansion. Rising temperatures caused by climate change are also shifting vegetation zones to higher altitudes, thereby shrinking the alpine zone and reducing the habitat available to cold-adapted species.[6,7] Whether these developments also apply to Liechtenstein remains a subject for further research. However, the RENAT AG report (2023) outlines a comparable situation.

2. International and national targets for the reduction and restructuring of subsidies with a harmful impact on biodiversity

At the United Nations Conference on Environment and Development, held in Rio de Janeiro, Brazil, in 1992, Liechtenstein signed the Convention on Biological Diversity (CBD) alongside more than 150 other countries.[8] In 2010, a strategic plan for global biodiversity conservation was adopted at the 10th Conference of the Parties to the CBD in Nagoya, Japan, including a set of target declarations known as the Aichi Targets. According to Aichi Target 3, "By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed (…)". To date, no country has achieved this target. At the 15th Conference of the Parties to the Convention on Biological Diversity, held in 2022 in Montreal, Canada, and Kunming, China, a successor agreement to the Aichi Targets was adopted. The Kunming-Montreal Global Biodiversity Framework sets out four long-term goals for 2050 and 23 targets to be achieved by 2030. Target 18 aims to “[i]dentify by 2025, and eliminate, phase out or reform incentives, including subsidies, harmful for biodiversity, in a proportionate, just, fair, effective and equitable way, while substantially and progressively reducing them by at least

[4] In Liechtenstein, the use of herbicides is prohibited on private and public roads, squares, terraces and similar surfaces, with exceptions made for lawns, vegetated ground areas and flower beds: https://www.llv.li/serviceportal2/amtsstellen/amt-fuer-umwelt/umweltschutz/chemikalien/herbizide_v1.pdf.

[5] Available at: https://www.statistikportal.li/de/uebergreifendes-indikatoren/umweltindikatoren/549-umweltindikatoren/2022/01/v-2/t21746.

[6] Federal Office for the Environment (2023), Biodiversität in der Schweiz, Zustand und Entwicklung: https://www.bafu.admin.ch/dam/bafu/de/dokumente/biodiversitaet/uz-umwelt-zustand/biodiversitaet-in-der-schweiz-2023.pdf.download.pdf/UZ-2306-D_Biodiversitaet.pdf.

[7] Gubler et al. (2020).

[8] Convention on Biological Diversity, entry into force for the Principality of Liechtenstein: 17 February 1998, LGBl. 1998 No. 039.

USD 500 billion per year by 2030, starting with the most harmful incentives, and scale up positive incentives for the conservation and sustainable use of biodiversity."[9]

As a Contracting Party to the Convention on Biological Diversity, Liechtenstein is obliged to implement the Kunming-Montreal Global Biodiversity Framework at the national level. For this purpose, the Government adopted the Biodiversity Action Plan 2030+, which sets out the country's measures for implementing the new global biodiversity agreement.[10] These measures include the identification of subsidies and financial disincentives with a harmful impact on biodiversity. The harmful impacts are to be gradually reduced, minimised or abolished, or replaced with incentives that support biodiversity.

3. Study mandate

The aim of this study is to identify subsidies and disincentives granted by Liechtenstein that have a harmful impact on biodiversity. Where possible, the monetary value of these subsidies is to be determined. In addition, the subsidies and disincentives are to be categorised according to their impact on biodiversity (degree of harmful impact), the proportion of the subsidy causing harm, political responsibilities, and the relevant regulatory frameworks, including those relating to the EEA and the Customs Treaty. The study will also outline proposals to minimise or prevent the negative impacts of each subsidy or disincentive, and compile the findings in a comprehensive report.

4. State of research on subsidies with a harmful impact on biodiversity

Numerous countries identify their environmentally harmful subsidies, which may also include subsidies that are harmful to biodiversity.[11] However, an explicit focus on the harmful impact of subsidies on biodiversity is rare.[12]

While no studies on subsidies with environmentally or biodiversity-harmful effects exist for Liechtenstein to date, the following studies have been conducted in Switzerland:

- On behalf of WWF Switzerland, Ecoplan investigated existing and potential instruments for the conservation and promotion of biodiversity,[13] and explored examples of biodiversity-harmful subsidies in greater detail in a follow-up study.[14]
- Ecoplan published a list of nearly 40 biodiversity-harmful disincentives to the detriment of biodiversity as part of the preliminary work for Switzerland's first Biodiversity Action Plan.[15]

[9] Convention on Biological Diversity (2022), Decision adopted by the Conference of the Parties to the Convention on Biological Diversity, 15/4, Kunming-Montreal Global Biodiversity Framework: https://digitallibrary.un.org/record/4080812?v=pdf.
[10] Ministry of Home Affairs, Economy and Environment 2024a
[11] For a collection of international studies on subsidies with environmentally or biodiversity-harmful impacts, see e.g. https://subventionen.wsl.ch/de/dossier/publikationen-international/#c761483.
[12] Matthews, A., Karousakis, K. (2022). Identifying and assessing subsidies and other incentives harmful to biodiversity, Environment Working Paper No. 206, OECD: https://www.oecd.org/en/publications/identifying-and-assessing-subsidies-and-other-incentives-harmful-to-biodiversity_3e9118d3-en.html.
[13] Ecoplan, commissioned by WWF Switzerland (2010), Der Natur mehr Wert geben, Reformideen für marktwirtschaftliche Massnahmen zur Förderung der Biodiversität: https://biblio.parlament.ch/libero/docClientStream.cls?id=429b5eb126d49bb64d511f5a-896803432417932d67592a73c41c14af47849fe8.
[14] Ecoplan, commissioned by WWF Switzerland (2010), Behebung von Fehlanreizen im Bereich Biodiversität, Analyse der wichtigsten biodiversitätsschädlichen Subventionen : https://www.yumpu.com/de/document/read/16999671/behebung-von-fehlanreizen-im-bereich-biodiversitat-wwf-schweiz.
[15] Ecoplan, commissioned by the Swiss Federal Office of Energy (2013), Finanzielle Anreize bezüglich Biodiversität optimieren. Studie zur Konkretisierung von Ziel 5 der Strategie Biodiversität Schweiz (SBS) im Hinblick auf den Aktionsplan SBS: https://www.wsl.ch/fileadmin/user_upload/WSL/Projekte/Fehlanreize_Mobilitaetsbereich_2014.pdf.

- The Swiss Federal Institute for Forest, Snow and Landscape Research (WSL) and the Swiss Academy of Sciences (SCNAT) identified over 160 subsidies with a harmful impact on biodiversity.[16]
- The Federal Office for the Environment (FOEN) used the WSL study as a basis for analysing numerous subsidies and proposed further in-depth studies.[17]

The following studies have been conducted in Europe:

- In 2011, France published a report that broadly examined and discussed subsidies harmful to biodiversity.[18]
- In Germany, a publication on "Harmful Subsidies Against Biodiversity"[19] was released in 2008, and in 2021 the Forum for an Ecological and Social Market Economy published a report on biodiversity-harmful subsidies.[20]

There is now also a body of synthesised work on environmentally harmful subsidies, including those harmful to biodiversity. In 2022, the European Commission published a toolbox to support Member States in reforming such subsidies.[21] Ongoing efforts by EU Member States to reduce environmentally harmful subsidies are also reported on an online portal.[22, 23]

5. Definition of subsidies with a harmful impact on biodiversity and political framework

5.1. Definition of subsidies with a harmful impact on biodiversity

The term "subsidy" is defined in various ways. As a result, different types of measures may fall under this definition.

[16] Gubler, L., Ismail. S.A., & Seidl, I. (2020), Biodiversitätsschädigende Subventionen in der Schweiz, Grundlagenbericht, WSL-Berichte 96 (2nd ed.), WSL, Swiss Federal Institute for Forest, Snow and Landscape Research: https://www.wsl.ch/de/publikationen/biodiversitaetsschaedigende-Subsidies-in-der-schweiz-grundlagenbericht/.
[17] Federal Office for the Environment (2022), Evaluation der Wirkung von Bundessubventionen auf die Biodiversität: Vorstudie zur Bestimmung der Vertiefungen: https://www.newsd.admin.ch/newsd/message/attachments/71750.pdf.
[18] Sainteny, G., Duboucher, P., Ducos, G., Marcus, V. & Paul, E. (2011). Les aides publiques dommageables à la biodiversité. Paris: Centre d'analyse stratégique.
[19] Meyer, Ch., Schmidt, S., Meyer, B., Schlegelmilch, K. & Schlereth, M. (2008), Schädliche Subventionen gegen die biologische Vielfalt, Wie falsche finanzielle Anreize die biologische Vielfalt gefährden: http://files.foes.de/de/downloads/studien/subventionsstudie.pdf.
[20] Forum ökologisch-soziale Marktwirtschaft (FöS), Zerzawy F., Beermann A.-C., et al. (2021), Umweltschädliche Subventionen in Deutschland: Fokus Biodiversität: https://foes.de/de-de/publikationen/publikation?tx_foespublications_listpublications%5Baction%5D=show&tx_foespublications_listpublications%5Bcontroller%5D=Publication&tx_foespublications_listpublications%5Bpublication%5D=245&cHash=c078c30569169f75d77d6985b2e03cca.
[21] Porsch L., Klebba M., Camboni M., Oosterhuis F., Greno P., Ruiz-Gauna I., Mugdal S. (2022), A toolbox for reforming environmentally harmful subsidies in Europe, Final Report for the EU Commission : https://www.europarl.europa.eu/meetdocs/2014_2019/plmrep/COMMITTEES/ENVI/DV/2023/01-23/toolbox_EN.pdf.
[22] Available at: https://environment.ec.europa.eu/economy-and-finance/phasing-out-environmentally-harmful-subsidies_en.
[23] A prerequisite for the reform of environmentally harmful subsidies is the identification of the associated harm. In Germany, the "Guidelines on Subsidy Policy" require a sustainability assessment to be conducted for all subsidies. See, for example, the Federal Government's report on the development of federal financial assistance and tax concessions for the years 2019 to 2022 (28th Subsidy Report): https://dserver.bundestag.de/btd/19/321/1932170.pdf.

The Federal Finance Administration adopts a broad definition of subsidies, listing over 500 individual subsidies in its subsidy database.[24] Major subsidies include, for example, federal contributions to the AHV (Old-age and Survivors' Insurance) and IV (Disability Insurance), the federal allocation to the Rail Infrastructure Fund, and direct payments to agriculture. This approach is based on the Federal Act on Financial Assistance and Subsidies (Subsidies Act, SubA), which defines subsidies as encompassing both financial assistance and compensatory payments. According to §3 SubA, *"financial assistance (…) refers to benefits of monetary value granted to recipients outside the Federal Administration to promote or maintain the performance of a task chosen by the recipient. (…) Compensatory payments are benefits provided to recipients outside the Federal Administration to mitigate or offset financial burdens arising from the fulfilment of tasks prescribed by federal law or public-law tasks delegated to the recipient by the federal government."*

The Kiel Institute for the World Economy defines subsidies as *"financial assistance from the state or tax concessions that distort the allocation of resources. Subsidies are typically directed at companies. In addition, there are state benefits granted to private households with the aim of reducing the cost of certain goods."*[25] The Kiel Institute has since expanded this definition in line with the approach taken by the Swiss Federal Finance Administration. It now also includes payments and concessions that occur outside the core public sector. This broader understanding allows allocation-distorting subsidies to be compared with public spending that potentially enhances welfare – for example, in areas such as education and basic research.[26]

One defining feature of subsidies is their selective nature: they are *"selective state financial assistance and tax concessions that distort competition, disrupt resource allocation, and weaken market incentives."*[27] This definition is also used by the Research Institute for Swiss Economic Policy at the University of Lucerne (IWP) in its subsidy report. The Kiel Institute for the World Economy recognises that its definition of subsidies is significantly broader than that used by, for example, the German Federal Government, the German Federal Statistical Office, or the European Commission.[28]

The IMF, OECD, World Bank and WTO adopt an even broader understanding of the term: "*Subsidies take many forms. These include direct government expenditures, tax incentives (such as tax credits or reduced tax rates), equity infusions, soft loans, government provision of goods and services and procurement on favorable terms, and price supports. The actions may be taken at the supranational, national, regional, or local levels, either directly by government or by another entity under government influence (such as through a state-owned enterprise). Policies such as trade restrictions, local content requirements, capital controls, or exchange rate policy can also provide support (…). Equally, regulatory actions can have effects similar to those of some subsidies (…).*"[29]

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[24] Available at: https://www.data.finance.admin.ch/superset/dashboard/subventionen.
[25] Boos, A., Rosenschon, A. (2008), Der Kieler Subventionsbericht, Eine Aktualisierung. No. 452/453, Kiel Institute for the World Economy: https://www.ifw-kiel.de/fileadmin/Dateiverwaltung/IfW-Publications/fis-import/13277952-75dc-4200-8c24-2e5ef5246834-kd452-453.pdf.
[26] Laaser, C.-F., Rosenschon, A. (2020), Kieler Subventionsbericht 2020: Subventionen auf dem Vormarsch, KIEL INSTITUTE FOR THE WORLD ECONOMY: https://www.ifw-kiel.de/fileadmin/Dateiverwaltung/IfW-Publications/fis-import/4535708c-5b0f-4d21-9e7a-a723ac71c147-wipo_29.pdf.
[27] Laaser, C.-F., Rosenschon, A. (2020), Kieler Subventionsbericht 2020: Subventionen auf dem Vormarsch, Kiel Institute for the World Economy: https://www.ifw-kiel.de/fileadmin/Dateiverwaltung/IfW-Publications/fis-import/4535708c-5b0f-4d21-9e7a-a723ac71c147-wipo_29.pdf, p. 58.
[28] Laaser, Rosenschon (2020).
[29] IMF, OECD, World Bank, WTO. (2022). Subsidies, Trade, and International Cooperation. Washington: https://www.oecd.org/content/dam/oecd/en/publications/reports/2022/04/subsidies-trade-and-international-cooperation_1fd672ee/a4f01ddb-en.pdf.

The German Ministry of Finance notes that under the broad definition adopted by international organisations such as the IMF, OECD, World Bank and WTO, *"external effects are also taken into account and quantified. In Germany, the Federal Environment Agency (UBA) and the Federal Agency for Nature Conservation (BfN) have adopted and applied these concepts in several publications, in line with the approaches of the aforementioned institutions. According to this understanding, subsidies are not only benefits granted to companies with no or below-market compensation, but also support provided to private households that influence consumption patterns and thereby indirectly affect economic activity. In addition to what the UBA considers 'explicit' subsidies, 'implicit' subsidies must also be considered. These include unclaimed guarantees and warranties, targeted preferential treatment through government regulation, and the provision of goods, services and rights by the state at below-market prices. Subsidies are considered environmentally harmful when they negatively affect environmental goods such as climate, air, soil, water and biodiversity, lead to environmental health risks, or promote the consumption of raw materials."*.[30]

The Swiss Federal Council (2013) classifies environmentally harmful subsidies (and taxes) under the broader category of environmentally harmful disincentives. It states: *"A tax or subsidy constitutes an environmental disincentive if it can be assumed that – aside from its primary objective – it promotes environmentally harmful behaviour and thus has negative effects on one or more environmental domains"* (p. 5597).[31]

This study is based on a broad definition of subsidies and aligns with the OECD's interpretation. This understanding is also consistent with the definition used by the Convention on Biological Diversity (CBD), according to which subsidies are "*a result of a government action that confers an advantage on consumers or producers, in order to supplement their income or lower their costs*."[32]

Accordingly, the following funding instruments are considered subsidies in this study:[33,34]

1a) Explicit subsidies through public expenditure (on-budget subsidies)
- Direct transfer of funds (grants, compensation payments, etc.)
- Potential transfer of funds (risk assumptions, deficit guarantees, loan guarantees, etc.)
- Support programmes – financial or burden-sharing mechanisms

1b) Explicit subsidies without public expenditure (off-budget subsidies)
- Tax and levy concessions
- Interventions in market mechanisms (price reductions, minimum or maximum prices, etc.)
- Interest subsidies or waivers

2) Implicit subsidies
- External costs borne by the environment, the general public, or future generations[35]

[30] Federal Ministry of Finance (2023), 29. Subventionsbericht des Bundes 2021 – 2024, Bericht der Bundesregierung über die Entwicklung der Finanzhilfen des Bundes und der Steuervergünstigungen für die Jahre 2021 bis 2024: https://www.bundesfinanzministerium.de/Content/DE/Downloads/Broschueren_Bestellservice/29-Subventionsbericht.pdf?__blob=publicationFile&v=7.
[31] Swiss Federal Council (2013), Bericht des Bundesrates vom 8. Mai 2006 zur Abschreibung der Motion 06.3190 (Studer Heiner), Ökologisierung des Steuer- und Subventionssystems: https://www.fedlex.admin.ch/eli/fga/2013/1033/de.
[32] OECD (2005), Environmentally Harmful Subsidies: Challenges for Reform: https://www.oecd.org/en/publications/2005/08/environmentally-harmful-subsidies_g1gh5bb7.html. See also Gubler et al. (2020).
[33] Valsecchi, C., ten Brink, P., Bassi, S., Withana, S., Lewis, M., Best, A., Oosterhuis, F., Dias Soares, C., Rogers-Ganter, H. & Kaphengst, T. (2009). Environmentally Harmful Subsidies: Identification and Assessment, Final report for the European Commission's DG Environment: https://ieep.eu/publications/environmentally-harmful-subsidies-ehs-identification-and-assessment-full-report/.
[34] Gubler et al. (2020).
[35] There are no calculations of external costs available for Liechtenstein. By contrast, the Swiss Federal Office for Spatial Development (ARE) regularly calculates the external costs and benefits of transport.

- Cross-subsidisation[36]
- Provision of goods/infrastructure

The following definition of biodiversity harm is used in this report:

"*Subsidies harmful to biodiversity promote production or consumption, thereby increasing the use of natural resources. They result in pollution, disturbance, and the loss of habitats and the species living within them, along with their diversity.*"[37]

In one instance, this study also considers a financial disincentive that is not based on a subsidy: the earmarking of funds – specifically, the tourism levy – which is allocated to Liechtenstein Marketing and used to finance tourism services.

It follows from the above definition that this study does not address disincentives arising from laws or regulations. Exemptions from governmental regulations or inadequate enforcement of existing laws are also not regarded as subsidies. Accordingly, the OECD's broader interpretation – under which regulatory exemptions may be considered subsidies – is not adopted here.[38] Likewise, subsidies that have effects exclusively outside of Liechtenstein are not included in the scope of this study.

5.2. Quantification and categorisation of subsidies with a harmful impact on biodiversity

It is difficult – if not impossible – to establish a causal link between subsidies and the damage they cause to biodiversity. This is due to a range of factors: cause-and-effect relationships are often indirect or unknown, impacts may be delayed, ecological thresholds are uncertain, and species or populations may enter decline due to factors such as small population size. Harmful effects may be minimal and barely perceptible, insufficiently researched, or cumulative in nature. As a result, it is also challenging to quantify such damage in monetary terms.[39]

In principle, this study considers the following forms of biodiversity harm: material pollution (e.g. chemicals), biological pressure (e.g. invasive species), structural impacts (e.g. erosion, homogenisation of habitats), physical impacts (e.g. noise, sustained increases in water temperature), and process-related impacts (e.g. altered bedload dynamics).[40]

This study includes a rough assessment of the degree to which each subsidy is considered harmful. The following four categories are used to classify the level of harm: a) low, b) medium, c) high, and d) unclear. In many instances, the level of harm is assessed as low – partly due to the knowledge gaps outlined above, and partly because the actual harm may indeed be minimal. However, given the cumulative pressure from multiple sources, biodiversity is likely to be under considerable overall strain in many cases. As such, any form of relief is likely to be beneficial.

A further categorisation concerns the proportion of a subsidy that has a harmful impact. As there are no clear estimates or calculations available to determine what share of a subsidy

[36] (Partial) assumption of costs by the state or third parties due to non-enforcement of the polluter pays principle.
[37] Based on Valsecchi et al. (2009) (study for the European Commission); see also Gubler et al. (2020).
[38] Valsecchi et al. (2009).
[39] Seidl, I. & J. Gowdy. (1999), Monetäre Bewertung von Biodiversität: Grundannahmen, Schritte, Probleme und Folgerungen. GAIA 8/2, 102-1: https://www.semanticscholar.org/paper/Monet%C3%A4re-Bewertung-von-Biodiversit%C3%A4t%3A-Schritte%2C-und-Seidl-Gowdy/7c827e409040ea4f0b407e8969e62067091f71f7.
[40] Gubler et al. (2020).

negatively affects biodiversity, the assessments in this area remain approximate and qualitative. Accordingly, subsidies are assigned to the following three categories:[41]

a) The subsidy is **entirely** harmful to biodiversity and should therefore be redirected, reformed, or abolished.

b) The subsidy is **partially** harmful to biodiversity. Accordingly, only the harmful portion should be redirected, reformed, or abolished.

c) The subsidy is harmful to biodiversity **depending on how it is implemented**. If the subsidised activity is applied/implemented in a biodiversity-friendly manner, it can have a neutral or even positive impact on biodiversity. If this is not the case, the subsidy should be classified as harmful to biodiversity – falling under either category a) or b).[42]

5.3. Subsidies within the framework of the EEA and the Customs Treaty; exclusion of financial flows within Liechtenstein's citizens' cooperatives

Certain subsidies are governed by the Agreement on the European Economic Area (EEA),[43] particularly when they affect the four freedoms of the EU – namely, the free movement of goods, persons, services, and capital – and may influence competition or cooperation in areas such as research, development, the environment, education, and social policy (Article 1 of the EEA Agreement). The study indicates where a subsidy falls within the scope of the relevant legal provisions listed in the EEA Register. However, it does not assess whether, or to what extent, changes to a subsidy would conflict with the four freedoms or the objectives of the EEA Agreement.[44]

If a subsidy is affected by the Customs Treaty – through which Liechtenstein is integrated into the Swiss customs territory – or by other agreements with Switzerland, the study examined whether Swiss legislation is applicable. Where this is the case, it is generally argued that Liechtenstein should, within the scope of its possibilities, work to ensure that Switzerland makes the necessary adjustments to abolish or minimise the biodiversity-harmful subsidy.

In Liechtenstein, citizens' cooperatives play a central role in the country's political structure as public-law entities. They own approximately 40% of the national territory, giving them substantial influence over the country's biodiversity.[45] This report includes only payments made by Liechtenstein to these cooperatives that may be harmful to biodiversity. It does not cover their own financial flows relevant to biodiversity, such as self-financed road construction).

5.4. Limits of the study

This study investigates subsidies harmful to biodiversity in the following sectors: energy generation and supply, agriculture, settlement development, tourism and recreation, transport, and forests. The areas of hydraulic engineering/flood protection and wastewater management are not included. Flood protection can support biodiversity if implemented through river restoration. However, torrent control structures, dam heightening, or riverbed lowering can negatively impact aquatic biodiversity, particularly by disrupting longitudinal and lateral connectivity of water bodies. The effect of the nearly CHF 5.3 million spent in 2022 on natural

[41] The categorisations are relevant for an overall assessment and for identifying possible courses of action.
[42] Gubler et al. (2020).
[43] Agreement of 2 May 1992 on the European Economic Area, entry into force: 1 May 1995, LGBl. 1995 No. 068.001.
[44] EEA Register, as of 16 July 2024, Publisher: EEA Coordination Unit of the Government of the Principality of Liechtenstein 2024: https://www.llv.li/de/landesverwaltung/stabsstelle-ewr/wissenswertes/veroeffentlichungen/ewr-register.
[45] Allgemeines Treuunternehmen, Genossenschaftswesen in Liechtenstein: https://www.atu.li/de/publikationen/genossenschaftswesen-in-liechtenstein.

hazard protection related to water bodies[46] on biodiversity would require more in-depth analysis. Wastewater management is the responsibility of municipalities. Whether subsidies exist in this area – such as underfunding of (i) the maintenance of the sewer network or (ii) upgrades to wastewater treatment plants (WWTPs) with a fourth treatment stage – and how these may impact biodiversity would also require further investigation.

6. Methodology

The methodology used for this study broadly follows that of the Gubler et al. (2020) report "Biodiversitätsschädigende Subventionen in der Schweiz", as well as a parallel study conducted for the Canton of Zurich on cantonal subsidies with harmful effects on biodiversity. To identify potentially biodiversity-harmful subsidies, the 2022 national accounts were first analysed.[47] Relevant expenditure categories were identified, and the corresponding legal provisions reviewed. This groundwork was followed by consultations with biodiversity experts to understand the main drivers of biodiversity loss across different habitats and to identify and discuss underlying subsidies. Extensive desktop research was then carried out to describe the potentially biodiversity-harmful subsidies identified. To verify findings and obtain information on the financial scale of the subsidies, numerous discussions were held with various offices within the National Administration that (potentially) grant such subsidies. Given the complexity of administrative structures and the limited scope of the study, it is likely that not all biodiversity-harmful subsidies were identified.

This report is a scientific publication by WSL and has not yet been reviewed or evaluated by any political institution or official body in Liechtenstein with regard to possible implementation or policy intentions. It is intended to serve as an informational basis for political decision-makers. The proposed solutions were developed by the authors commissioned by WSL and do not fall under the responsibility of the relevant governmental offices. No political position has been taken on the report.

[46] CHF 5.285 million for watercourse construction, Rhine protection works, torrent control structures, natural hazard measures, and landslide remediation, according to the Accountability Report 2022: https://www.llv.li/serviceportal2/amtsstellen/stabstelle-regierungskanzlei/rechenschaftsbericht_2022-web.pdf.

[47] Government of the Principality of Liechtenstein (2023), Accountability Report 2022: https://www.llv.li/serviceportal2/amtsstellen/stabstelle-regierungskanzlei/rechenschaftsbericht_2022-web.pdf.

SUBSIDIES WITH A HARMFUL IMPACT ON BIODIVERSITY BY SECTOR

A Energy generation and supply

A.1. Introduction

Liechtenstein's main energy sources include electricity, natural gas, diesel oil, heating oil and petrol. The country's energy self-sufficiency rate stands at around 13%. Electricity, firewood and biogas can be produced domestically.[48] Two energy companies play a central role in energy generation:

- As both producer and supplier, Liechtensteinische Kraftwerke (LKW) ensures the basic electricity supply for the entire country. The company is wholly owned by the State. Its purpose includes the generation, procurement, transmission, distribution, sale and trading of electricity both domestically and internationally.[49] LKW operates 12 of its own hydroelectric power plants and 18 in-house photovoltaic systems.[50] Each year, LKW is required to transfer 30% of its net profit after tax to the State as the owner.[51]
- Liechtenstein Wärme (LW) supplies gas and thermal energy to the country and is also wholly owned by the State (establishment under public law).[52] Its purpose includes the generation, procurement, transport, distribution, storage and supply of, as well as trading in, gas and grid-bound thermal energy.[53] Like LKW, LW transfers 30% of its net profit after tax to the State each year.[54]

Through its Energy Strategy 2030 and Energy Vision 2050, the Government aims to promote the expansion of renewable energy sources, among other goals. By 2030, 30% of energy consumption is to be covered by renewables, and overall energy demand is to be reduced by 20% compared to 2008 levels.[55] To achieve these targets, the Government plans to implement the subsidy measures set out in the Energy Efficiency Act (EEG).[56] Municipalities generally match these subsidies up to the applicable maximum limits.[57]

The biodiversity impact of the subsidised measures varies. Subsidies for photovoltaic systems and thermal solar collectors installed on rooftops or infrastructure are not considered relevant to biodiversity and are therefore not examined in this report. Any potential conflict with green roof systems can be easily avoided through appropriate installation of PV systems. The same applies to the construction of Minergie-standard buildings and renovation advisory services. To date, there is no evidence of geothermal energy having negative effects on biodiversity, and it is not currently considered a threat.[58] The situation is different, however, in the case of subsidies for wood-fired heating systems and combined heat and power (CHP) plants, which are supported by the State. Their impacts on biodiversity are discussed in the following chapter.

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[48] Office of Statistics (2024), Liechtenstein in Figures 2024: https://www.statistikportal.li/statistikportal/publications/103-liechtenstein-in-figures/2024/01/1/103.2024.01.1_01_liechtenstein-in-figures-2024.pdf.
[49] Law of 19 November 2009 on the Liechtensteinische Kraftwerke (LKWG), LGBl. 2009 No. 355.
[50] Available at: https://www.lkw.li/unternehmen/kraftwerke.html.
[51] Owner's Strategy of the Government of the Principality of Liechtenstein for the Liechtensteinische Kraftwerke (LKW) (2024): https://www.lkw.li/userdata/Alle-Download-Dokumente/Allgemeines-Unternehmen/Rechtsgrundlagen/lkw-eignerstrategie-2024.pdf.
[52] Available at: https://www.waerme.li/unternehmen/corporate-governance.
[53] Law of 1 December 2016 on the "Liechtenstein Wärme" Establishment (ALWG), LGBl. 2017 No. 026.
[54] Owner's Strategy of the Government of the Principality of Liechtenstein for Liechtenstein Wärme: https://www.waerme.li/fileadmin/user_upload/Dokumente/Downloads/weitere_Dokumente/Eignerstrategie_Liechtenstein_Waerme_ab_01.06.2024.pdf.
[55] Report and Motion No. 118/2020 on the Energy Strategy 2030 and the Energy Vision 2050 and the measures contained therein: https://bua.regierung.li/BuA/default.aspx?nr=118&year=2020&filter1=Energiestrategie+2030&backurl=modus%3dsearch%26filter1%3dvt%26filter2%3dEnergiestrategie+2030&sh=1918119120.
[56] Law of 24 April 2008 on the Promotion of Energy Efficiency and Renewable Energy Sources (Energy Efficiency Act; EEG), LGBl. 2008 No. 116.
[57] Energy Department, Community support – Energy promotion – Energy / Energy Department – Office of Economic Affairs – National Administration – Liechtenstein National Administration (llv.li) (accessed 27 August 2024).
[58] Pro Natura, Schweizer Energiepolitik mit Rücksicht auf Biodiversität: https://www.pronatura.ch/de/energie.

Since 2018, no companies in Liechtenstein have been part of the emissions trading system (ETS). Therefore, this report does not examine any related subsidies for energy-intensive companies. Under the ETS, companies are exempt from the CO_2 levy; the difference between the national CO_2 levy and the lower CO_2 price within the ETS effectively constitutes a subsidy for these companies' energy consumption. From 2026, emission allowances will no longer be allocated free of charge across Europe,[59] ending this form of subsidy for ETS participants. If Liechtenstein-based companies are included in the ETS in the future, they could be subsidised via the gap between the national CO_2 levy and the ETS price.

A.2. Subsidies with a harmful impact on biodiversity

A.2.1 Subsidised measures under the Energy Efficiency Act

A.2.1.1 **Subsidies for wood-fired heating systems**	
Subsidy	In accordance with the EEG, Liechtenstein promotes the installation of wood heating systems in residential, industrial and commercial buildings with an energy reference area (ERA) of up to 1,750 m² as part of building services, and wood chip combustion systems as large-scale installations for buildings with an ERA of 1,750 m² or more.
Impact on biodiversity	The use of energy wood increases pressure on forest ecosystems, tending to reduce both the diameter at breast height and the average age of trees. Around 70% of the wood harvested in Liechtenstein is used for energy purposes. While this wood is a by-product of forest management aimed at creating stable, structurally diverse forests,[60] it nonetheless results in the loss of potential deadwood – and with it, important habitat for numerous species.
Degree of harmful impact on biodiversity	Low
Subsidy type	On-budget
Level of subsidy	CHF 233,943 (in 2022)[61]
Harmful proportion of subsidy	Partial
Regulatory framework	Article 3(1)(c) in conjunction with Article 9 EEG (building services systems) and Article 3(1)(g) in conjunction with Article 15 EEG (other systems)
	Responsibility of the State; funding provided jointly with municipalities[62]
	Regulated under EEA
	Not regulated under Customs Treaty
Political trade-offs	Energy generation and efforts to reduce fossil fuels vs. biodiversity conservation and promotion

[59] German Federal Environment Agency (2025), Der Europäische Emissionshandel: https://www.umweltbundesamt.de/daten/klima/der-europaeische-emissionshandel#luftverkehr-im-emissionshandel-
[60] Government of the Principality of Liechtenstein (2024), Liechtenstein Forest Strategy 2030+: https://www.regierung.li/files/attachments/waldstrategie-2030-.pdf.
[61] Information provided by the Office of Economic Affairs, Energy Department.
[62] Available at: https://www.llv.li/de/privatpersonen/bauen-und-wohnen/energie-energiefachstelle/energiefoerderung/gemeindefoerderung.

Possible solutions	Subsidies for wood heating systems will no longer be granted if the additional demand exceeds Liechtenstein's sustainable energy wood potential. This potential must be defined in accordance with existing procedures and with reference to the Forest Strategy 2030+.[63,64]

[63] Burg, V., Bowman, G., Erni, M., Lemm, R., & Thees, O. (2018), Analyzing the potential of domestic biomass resources for the energy transition in Switzerland, *Biomass and Bioenergy*, 111, 60-69.
[64] Thees, O., Lemm, R., Erni, M., & Ballmer, I. (2014), Potenziale, Chancen und Risiken der Energieholznutzung. Zur Rolle des Holzes im Schweizer Energiesystem, WSL-Berichte 21: 29-42.

A.2.1.2 **Subsidies for combined heat and power (CHP) plants**	
Subsidy	CHP plants can be subsidised under the EEG, provided they are operated with renewable fuels. This includes support for construction, a market price guarantee, and connection to the district heating network. According to Article 8 of the Energy Efficiency Ordinance (EEV),[65] a subsidy is granted for the installation of CHP plants with an output between 1 and 250 kilowatts. Plants with a higher output are remunerated at the market price but do not receive a guaranteed minimum payment. In addition to the subsidy for construction, the connection to the district heating network is also supported. (See also A.2.4 regarding the refund of the CO_2 levy)
Impact on biodiversity	The energy sources used in CHP plants determine their impact on biodiversity. Natural gas and oil are the most problematic compared to non-fossil fuels and have been excluded from subsidies since 2024. If wood is used as a fuel, the provisions outlined in A.2.1.1 (promotion of wood heating systems) apply. Biogas from farmyard manure, green waste, etc., is currently not produced in Liechtenstein.
Degree of harmful impact on biodiversity	Low
Subsidy type	On-budget
Level of subsidy	CHF 16,000 for natural gas-fired CHP plants with an output of 1–250 kW (in 2022; natural gas has not been subsidised since 2024).[66] In 2022, no "other systems" using, for example, wood chip combustion were subsidised.
Harmful proportion of subsidy	Partial
Regulatory framework	Article 3(1)(e) in conjunction with Article EEG
	Responsibility of the State; funding provided jointly with municipalities
	Regulated under EEA[67]
	Not regulated under Customs Treaty[68]
Political trade-offs	Energy generation and efforts to reduce fossil fuels vs. biodiversity conservation and promotion
Possible solutions	Subsidies for the construction of new wood-fired CHP plants and for connection charges to such plants will not be paid if the additional demand for wood exceeds Liechtenstein's sustainable energy wood potential. For this purpose, the sustainable energy wood potential must be defined taking into account the Forest Strategy 2030+.[69]

[65] Ordinance of 27 May 2008 on the Promotion of Energy Efficiency and Renewable Energy Sources (Energy Efficiency Ordinance; EEV), LGBl. 2008 No. 118.
[66] Government of the Principality of Liechtenstein (2023), Accountability Report 2022: https://www.llv.li/serviceportal2/amtsstellen/stabstelle-regierungskanzlei/rechenschaftsbericht_2022-web.pdf p. 347.
[67] Directive 2004/8/EC of the European Parliament and of the Council of 11 February 2004 on the promotion of cogeneration based on a useful heat demand in the internal energy market and amending Directive 92/42/EEC.
[68] Promulgation of 9 April 2024 on the Swiss legislation applicable in the Principality of Liechtenstein under the Customs Treaty (Annexes I and II), 170.551.631.
[69] Burg et al. (2018), Thees et al. (2014).

A.2.1.3 **Subsidies for thermal insulation**	
Subsidy	In accordance with the EEG, Liechtenstein subsidises thermal insulation measures on heated existing buildings for which a building permit was issued before 30 March 1993 (a heat-transfer coefficient must be demonstrated).
Impact on biodiversity	The renovation of building envelopes (roofs and façades) can result in the loss of valuable niches and nesting sites. There is therefore an intra-ecological trade-off (thermal insulation vs. small habitats).
Degree of harmful impact on biodiversity	Low
Subsidy type	On-budget
Level of subsidy	CHF 403,950 (in 2022)[70]
Harmful proportion of subsidy	Depending on implementation
Regulatory framework	Article 3(1)(a) in conjunction with Article 5 EEG
	Responsibility of the State; funding provided jointly with municipalities[71]
	Not regulated under EEA
	Not regulated under Customs Treaty
Political trade-offs	Energy efficiency vs. biodiversity conservation and promotion
Possible solutions	Liechtenstein actively informs building owners about the importance of habitats in buildings and makes it a condition that if habitats such as niches on façades and roofs are lost due to thermal insulation, the subsidy is granted only if replacement habitats are demonstrably created (e.g. nesting sites for bats in the façade or nesting boxes for swifts under the roof).

[70] Government of the Principality of Liechtenstein (2023), Accountability Report 2022: https://www.llv.li/serviceportal2/amtsstellen/stabstelle-regierungskanzlei/rechenschaftsbericht_2022-web.pdf p. 347

[71] Available at: https://www.llv.li/de/privatpersonen/bauen-und-wohnen/energie-energiefachstelle/energiefoerderung/gemeindefoerderung.

A.2.2 Subsidy for the Balzers wood-fired cogeneration plant	
Subsidy	Heat production at the Balzers wood-fired power plant is being subsidised with annual contributions from 2014 to 2028.[72]
Impact on biodiversity	The use of energy wood increases pressure on forest ecosystems, tending to reduce both the diameter at breast height and the average age of trees. Around 70% of the wood harvested in Liechtenstein is used for energy purposes. While this wood is a by-product of forest management aimed at creating stable, structurally diverse forests,[73] it nonetheless results in the loss of potential deadwood – and with it, important habitat for numerous species.
Degree of harmful impact on biodiversity	Low
Subsidy type	On-budget
Level of subsidy	CHF 173,815 (in 2022)[74]
Harmful proportion of subsidy	Partial
Regulatory framework	No explicit statutory basis
	Responsibility of the State
	Not regulated under EEA
	Not regulated under Customs Treaty
Political trade-offs	Energy generation and efforts to reduce fossil fuels vs. biodiversity conservation and promotion
Possible solutions	The subsidy for the production of (thermal) energy from wood will no longer be extended after the 2028 deadline and will therefore no longer be subsidised in future.

[72] Report and Motion No. 63/2013 concerning the payment of contributions to the Balzers citizens' cooperative to reduce State expenditures related to the operation of a wood-fired heating plant: https://bua.regierung.li/BuA/default.aspx?nr=63&year=2013&filter1=B%c3%bcrgergenossenschaft+Balzer&backurl=modus%3dsearch%26filter1%3dvt%26filter2%3dB%c3%bcrgergenossenschaft+Balzer&sh=2036135961

[74] Government of the Principality of Liechtenstein (2023), Accountability Report 2022: https://www.llv.li/serviceportal2/amtsstellen/stabstelle-regierungskanzlei/rechenschaftsbericht_2022-web.pdf, p. 507.

A.2.3 Waiver of the water charge

Subsidy	Of the twelve hydropower plants currently in operation in Liechtenstein, LKW only pays a water charge for the Mühleholz power plant, as the inflows for the Samina and Lawena plants are assigned to LKW for exclusive use under Article 18 LKWG. The Letzana power plant and the eight drinking water power plants are also exempt from water charges.[75] The lack of water charges lowers the production costs of these plants.
Impact on biodiversity	LKW operates one pumped storage power plant (Samina) and three other power plants (Lawena, Letzana and Mühleholz) with small storage basins that resemble run-of-river plants. The hydropeaking operation of (pumped) storage power plants has a detrimental impact on the macro- and microzoobenthos of the watercourses downstream of the plants. Low residual flow volumes can place stress on or reduce the habitats of downstream watercourses. The requirement to ensure sufficient residual flows at licensed power plants is regulated under Article 26 of the Water Protection Act (GSchG).[76] Both storage and run-of-river power plants act as barriers for fish and macrozoobenthos, fragmenting their habitats.[77] The remaining eight plants are drinking water power plants. The spring intakes required for their operation affect spring habitats, although this is mainly due to drinking water extraction and only secondarily due to energy use.
Degree of harmful impact on biodiversity	Medium
Subsidy type	Off-budget
Level of subsidy	Not quantified
Harmful proportion of subsidy	Partial
Regulatory framework	LKWG Water Rights Act[78]
	Responsibility of the State
	Not regulated under EEA
	Not regulated under Customs Treaty
Political trade-offs	This presents an intra-ecological trade-off: the waiver of the water charge can be considered a subsidy. It reduces the cost of electricity generation from hydropower, which is both detrimental to biodiversity and beneficial to the environment due to the production of renewable energy.
Possible solutions	The water charge is levied for all four non-drinking water hydropower plants. In light of the polluter-pays principle, there is a case to be made for water charges – especially for new power plants.

[75] The Lawenabach and all tributaries of the Samina (Malbunbach, Valünabach, Valorschbach) are governed by Article 18 of the LKW Act for the exclusive use of LKW. The Mühleholzquellen power plant (MHQ) is located in the Rhine Valley and therefore lies outside the catchment area of the aforementioned watercourses. As a result, the Office of Environment argues that MHQ is not covered by the LKW Act and is thus subject to a one-off concession fee and recurring water charges. All other hydropower plants are small drinking water power plants and do not tap into watercourses, but rather springs. Accordingly, no concession fees or water charges are levied. Information provided by Liechtensteinische Kraftwerke on 4 and 11 September 2024.

[76] Water Protection Act (GSchG) of 15 May 2003, LGBl. 2003 No. 159.

[77] Federal Office for the Environment (2023), Biodiversität in der Schweiz: https://www.bafu.admin.ch/dam/bafu/de/dokumente/biodiversitaet/uz-umwelt-zustand/biodiversitaet-in-der-schweiz-2023.pdf.download.pdf/UZ-2306-D_Biodiversitaet.pdf.

[78] Water Rights Act of 10 November 1976, LGBl. 1976 No. 069.

A.2.4 Exemptions and refund options for the CO_2 levy on fuels	
Subsidy	In accordance with Article 7(1) of the CO_2 Ordinance,[79] companies and individuals are entitled to a refund of the CO_2 levy on fuels • that are exempt from the CO_2 levy (companies and individuals within the scope of the Emissions Trading Act (EHG) [80], and companies with a reduction commitment) • that operate CHP plants which neither fall within the scope of the EHG nor are subject to a reduction commitment • that do not use the fuels subject to the levy for energy purposes
Impact on biodiversity	If the refund is tied to a reduction commitment, this has a positive effect on climate targets and, by extension, on biodiversity. However, it should be examined whether an increase in the levy might offer the same or even a more effective incentive to reduce greenhouse gas emissions. In any case, the refund of the CO_2 levy under Article 7 of the CO_2 Ordinance lowers the cost of CO_2 emissions, thereby contributing to the worsening of the climate crisis and accelerating biodiversity loss.
Degree of harmful impact on biodiversity	Medium
Subsidy type	Off-budget
Level of subsidy	Not quantified
Harmful proportion of subsidy	Entire
Regulatory framework	CO_2 Act[81] CO_2 Ordinance LGBl. 2010 No. 012[82] LGBl. 2010 No. 013[83]
	Responsibility of the State
	Not regulated under EEA
	According to Article 1(1) of the Agreement on the Treaty between the Swiss Confederation and the Principality of Liechtenstein concerning Environmental Levies in the Principality of Liechtenstein (2010), Liechtenstein has undertaken to "incorporate the provisions of Swiss federal legislation on environmental levies into its national law."
Political trade-offs	Subsidising fossil fuels through reduced levies vs. preserving and promoting biodiversity
Possible solutions	(i) Liechtenstein examines, within the scope of its possibilities, whether a sufficiently high CO_2 levy could achieve the same level of emissions reduction as that resulting from the exemption from the levy, including the target agreement. If so, Liechtenstein works, within the scope of its possibilities, to ensure that Switzerland expands its scope of action vis-à-vis Liechtenstein to enable the abolition of the CO_2 refund and exemption.

[79] Ordinance of 29 October 2013 on the Reduction of CO_2 Emissions (CO_2 Ordinance), LGBl. 2013 No. 359.
[80] Emissions Trading Act (EHG) of 19 September 2012, LGBl. 2012 No. 346.
[81] Law of 6 September 2013 on the Reduction of CO_2 Emissions (CO_2 Act), LGBl. 2013 No. 358.
[82] Treaty between the Principality of Liechtenstein and the Swiss Confederation concerning Environmental Levies in the Principality of Liechtenstein, LGBl. 2010 No. 012.
[83] Agreement on the Treaty between the Principality of Liechtenstein and the Swiss Confederation concerning Environmental Levies in the Principality of Liechtenstein, LGBl. 2010 No. 013.

(ii) Liechtenstein examines, within the scope of its possibilities, the abolition of the refund of the CO_2 levy for fossil-fuelled CHP plants.

(iii) The design of the CO_2 levy instrument could be supplemented with an additional incentive to reduce emissions by redistributing revenue from the CO_2 levy disproportionately to companies that demonstrably reduce their CO_2 emissions.

B Agriculture

B.1. Introduction

Provided that the requirements set out in Article 6 of the Agriculture Act[84] and Article 20 of the Ordinance on Agricultural Terms and the Recognition of Farms are met, a farm in Liechtenstein is recognised upon application. Recognition criteria include compliance with the principles of Good Agricultural Practice (GLP) and the guidelines of the Ecological Performance Certificate (ÖLN). This enables the receipt of direct payments. In Liechtenstein, there are 95 recognised farms, which collectively manage one fifth of the national territory (as of 2020). Around 60% of this area is permanent grassland and 40% arable land, with two thirds of the arable land used for fodder production.[85] Almost all agricultural land (95%) is leased, involving numerous landowners and many individual plots. As there is no minimum lease term, this creates planning uncertainty, making it more difficult to establish ecologically valuable compensation areas, build up humus and improve soil structure, or implement agroforestry systems.[86]

Around 75 of the 95 recognised farms in Liechtenstein are located in the valley region. The primary focus of agriculture is on milk production. With approximately 40% of farms operating organically, Liechtenstein is regarded as a global leader in organic farming. In addition, around 17% of the cultivated land is designated as biodiversity promotion areas – nearly two and a half times the legal requirement.[87] Nevertheless, the negative impacts of certain farming practices cannot be overlooked. The following problem areas were identified as needing improvement in terms of biodiversity promotion:[88]

- "The ecological quality of near-natural habitats and structures is too low, and these habitats and structures are not optimally located or sufficiently interconnected.
- A complex of biological causes, including invasive species.
- Nutrient input, especially from mineral fertilisers and slurry, is too high.
- The risks of pesticide entry into the environment are too great.
- Mowing technology, as well as climate change and its consequences."[89]

Added to this is the development of agricultural land, which can result in habitat loss.

In 2022, the Ordinance on the Promotion of Biodiversity Promotion Areas[90] was enacted. In addition, with the adoption of the Agricultural Policy Report 2022 by the Liechtenstein Parliament, various measures were defined with the aim of aligning Liechtenstein's agriculture more closely with sustainability, while taking economic viability into account, and specifically addressing the challenges of climate change. One such measure provides that, from 2028, all recognised farms or those eligible for direct payments must carry out a sustainability assessment. Other measures relate to reduced tolerance thresholds for nitrogen and phosphorus, climate protection, and the optimisation of pesticide use. Overall, the measures are intended to be implemented in a socially responsible manner and without causing income losses for farmers.

The following section outlines and categorises both operating subsidies and other agricultural subsidies that have a harmful impact on biodiversity.

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[84] Agriculture Act (LWG) of 11 December 2008, LGBl. 2009 No. 042.
[85] Government Chancellery (RK), 2022: Bericht und Antrag an den Landtag des Fürstentums Liechtenstein betreffend den agrarpolitischen Bericht 2022.
[86] Report and Motion No. 111/2022 on the Agricultural Policy Report 2022: https://bua.regierung.li/BuA/default.aspx?nr=111&year=2022&filter1=agrarpolitischer+bericht&backurl=modus%3dsearch%26filter1%3dvt%26filter2%3dagrarpolitischer+bericht&sh=1918113611.
87 Office of Statistics (2021), Agriculture Statistics 2020: https://www.statistikportal.li/statistikportal/publications/745-landwirtschaftsstatistik/2020/01/1/745.2020.01_01_landwirtschaftsstatistik-2020.pdf.
[88] Report and Motion No. 111/2022 on the Agricultural Policy Report 2022: https://bua.regierung.li/BuA/default.aspx?nr=111&year=2022&filter1=agrarpolitischer+bericht&backurl=modus%3dsearch%26filter1%3dvt%26filter2%3dagrarpolitischer+bericht&sh=1918113611.
[89] Government Chancellery (RK), 2022: Bericht und Antrag an den Landtag des Fürstentums Liechtenstein betreffend den agrarpolitischen Bericht 2022, p. 51.
[90] Ordinance of 13 December 2022 on the Promotion of Biodiversity Promotion Areas (Biodiversity Promotion Ordinance; BFV), LGBl. 2022 No. 379.

B.2. Subsidies with a harmful impact on biodiversity

B.2.1 Measures to promote economic viability: improving agricultural income

Income contributions for farms consist of four operating subsidies as well as additional subsidies for mountain farms, selected arable crops, forage-consuming livestock, and the grazing of forage-consuming livestock. These are subject to certain conditions, including the management of the entire holding in accordance with the guidelines of the Ecological Performance Certificate (ÖLN) or the principles of organic farming.[91] In 2022, a total of CHF 5,991,062 was paid to farms in Liechtenstein.[92] This represents a largely stable level of contributions compared to previous years (2021: CHF 5,977,131[93], 2020: CHF 5,977,321[94]).

The four operating subsidies (hereafter 1.1–1.4) were introduced with the enactment of the Direct Payments Act in 1995 as an agricultural policy measure to improve farm incomes.[95]

B.2.1.1 **Basic subsidy (operating subsidy)**	
Subsidy	The basic subsidy is paid to recognised farms in accordance with Article 5 of the Agriculture Income Contribution Ordinance (LEV)[96] and amounts to CHF 9,600 per farm per year under Article 14 LEV (corresponding to 100%, with a maximum of CHF 12,000). This amount depends on the standard labour requirement (SAK) and is calculated in accordance with Article 15 LEV. Together with the subsidies for forage-consuming livestock, the basic subsidy accounts for the largest share of income contributions.[97] Intensive and extensive farms receive equal support, while extensive areas (such as extensively managed meadows and nutrient-poor sites) receive additional support through the Biodiversity Promotion Ordinance.
Impact on biodiversity	As the basic subsidy is also paid to intensively managed farms, it can have a harmful impact on biodiversity, as it supports this intensive form of farming.
Degree of harmful impact on biodiversity	Medium
Subsidy type	On-budget
Level of subsidy	CHF 1,132,180 (in 2020)[98]
Harmful proportion of subsidy	Depending on implementation
Regulatory framework	Article 5 LEV
Political trade-offs	Securing the income of Liechtenstein's farms vs. preserving and promoting biodiversity

[91] Agriculture Act (LWG) of 11 December 2008, LGBI. 2009 No. 042.
[92] Government of the Principality of Liechtenstein (2023), Accountability Report 2022.
[93] Government of the Principality of Liechtenstein (2023), Accountability Report 2022.
[94] Office of Statistics (2021), Agriculture Statistics 2020: https://www.statistikportal.li/statistikportal/publications/745-landwirtschaftsstatistik/2020/01/1/745.2020.01_01_landwirtschaftsstatistik-2020.pdf.
[95] Statement No. 98/2013 on the issues raised during the first reading concerning the amendment of the Agriculture Act: https://bua.regierung.li/BuA/default.aspx?nr=98&year=2013&filter1=Landwirtschaftsgesetz&backurl=modus%3dsearch%26filter1%3dvt%26filter2%3dLandwirtschaftsgesetz&sh=-1322317515.
[96] Ordinance of 23 March 2010 on Income Contributions in Agriculture (Agriculture Income Contribution Ordinance; LEV), LGBI. 2010 No. 067.
[97] Report and Motion No. 111/2022 on the Agricultural Policy Report 2022: https://bua.regierung.li/BuA/default.aspx?nr=111&year=2022&filter1=agrarpolitischer+bericht&backurl=modus%3dsearch%26filter1%3dvt%26filter2%3dagrarpolitischer+bericht&sh=1918113611.
[98] Office of Statistics (2021), Agriculture Statistics 2020: https://www.statistikportal.li/statistikportal/publications/745-landwirtschaftsstatistik/2020/01/1/745.2020.01_01_landwirtschaftsstatistik-2020.pdf.

Possible solutions	To achieve the objective of the basic subsidy – namely, securing livelihoods by improving agricultural income (Article 1(1) LEV) – efficiently and without harming biodiversity, the subsidy is granted only for arable land used for food production for direct human consumption or for the production of roughage for milk production.

B.2.1.2 **Animal husbandry subsidy (operating subsidy)**

Subsidy	The operating subsidies for animal husbandry constitute a direct subsidy for livestock farming. Liechtenstein provides area-independent operating subsidies based on the standard labour requirement. This, in turn, is derived from the size of the farm, the livestock population, and specific characteristics of the farm such as topography or farming method. The subsidies are therefore dependent, among other factors, on the number of livestock units. To qualify for the animal husbandry subsidy, a minimum stock of five livestock units (LU) of farm animals must be demonstrated.[99]
Impact on biodiversity	The livestock population in Liechtenstein is high, as evidenced by the exceeding of nitrogen input thresholds in fens and by the fact that the domestic roughage area is insufficient, requiring the import of animal feed.[100] High livestock numbers contribute to the over-fertilisation of ecosystems, which harms biodiversity.
Degree of harmful impact on biodiversity	High
Subsidy type	On-budget
Level of subsidy	CHF 613,198 (in 2023)[101] (i.e. approx. CHF 122 per RCLU)
Harmful proportion of subsidy	Depending on implementation
Regulatory framework	Article 7 LEV
Political trade-offs	Securing the income of Liechtenstein's farms vs. preserving and promoting biodiversity
Possible solutions	(i) Liechtenstein no longer grants subsidies that support livestock. (ii) Liechtenstein introduces – rather than a lower limit of five LU – an upper limit of LU, above which the subsidies are reduced or discontinued. (iii) Liechtenstein makes subsidies for livestock conditional on the animals being largely fed with roughage produced on the farm.

[99] Ordinance of 23 March 2010 on Income Contributions in Agriculture (Agriculture Income Contribution Ordinance; LEV), LGBl. 2010 No. 067.

[100] In 2020, Liechtenstein had 4,868 livestock units (LU) across an agricultural area of 3,584 hectares, resulting in 1.36 LU/ha. In Switzerland, the figure for 2022 was 1.24 LU/ha, and in the canton of Zurich, 0.98 LU/ha. A 2013 comparison showed that livestock density in Switzerland is high compared to neighbouring countries Austria, Germany, and France (Baur, P. & Nitsch, H. (2013). Umwelt- und Tierschutz in der Landwirtschaft: Ein Vergleich der Schweiz mit ausgewählten europäischen Ländern unter besonderer Berücksichtigung des Vollzugs. Study commissioned by the Federal Office for Agriculture, FOAG).

[101] Office of Statistics (2023), Agriculture Statistics 2023: https://etab.llv.li/PXWeb/pxweb/de/eTab/eTab__Wirtschaftsbereiche%20und%20Unternehmen__Landwirtschaft__Landwirtschaftliche%20F%c3%b6rderungsleistungen/361.201.px/table/tableViewLayout2/?rxid=640f41e4-8fa4-4c15-991

B.2.1.3 **Crop production subsidy (operating subsidy)**	
Subsidy	Liechtenstein pays subsidies for crop production. These are granted if the agricultural area is at least three hectares; for special crops, the minimum agricultural area is 1.5 hectares. The amount is based on the standard labour requirement (SAK) and is calculated in accordance with Article 15 LEV.
Impact on biodiversity	The subsidies are paid regardless of farming practices and therefore also support or promote intensive farming, which negatively impacts biodiversity through the use of pesticides and fertilisers. As subsidies are also granted for fodder crops, they further support intensive livestock farming. The subsidy can thus have a harmful impact on biodiversity.
Degree of harmful impact on biodiversity	Medium
Subsidy type	On-budget
Level of subsidy	CHF 707,613 (in 2020)[102]
Harmful proportion of subsidy	Depending on implementation
Regulatory framework	Article 6 LEV
Political trade-offs	Securing the income of Liechtenstein's farms vs. preserving and promoting biodiversity
Possible solutions	(i) The subsidies are granted only for biodiversity-promoting management practices that involve reduced use of input products. (ii) The subsidies are granted only for crops intended for direct human consumption or for the production of roughage for milk production.

[102] Office of Statistics (2021), Agriculture Statistics 2020: https://www.statistikportal.li/statistikportal/publications/745-landwirtschaftsstatistik/2020/01/1/745.2020.01_01_landwirtschaftsstatistik-2020.pdf.

B.2.1.4 **Area-based subsidy (operating subsidy)**	
Subsidy	The area-based subsidy is area-dependent and is granted for up to 15 hectares of agricultural land (i.e. larger farms do not receive additional payments). Intensive and extensive farms receive equal support.
Impact on biodiversity	As the area-based subsidy is also paid to intensively managed farms, it can have a harmful impact on biodiversity.
Degree of harmful impact on biodiversity	Medium
Subsidy type	On-budget
Level of subsidy	CHF 413,612 (in 2020)[103]
Harmful proportion of subsidy	Depending on implementation
Regulatory framework	Article 8 LEV
Political trade-offs	Securing the income of Liechtenstein's farms vs. preserving and promoting biodiversity
Possible solutions	(i) Subsidies are granted only for arable crops intended for direct human consumption or for the production of roughage for milk production. (ii) Intensive production involving the use of pesticides and mineral fertilisers is not supported. (iii) The granting of subsidies is tied to sustainability and quality criteria.

[103] Office of Statistics (2021), Agriculture Statistics 2020: https://www.statistikportal.li/statistikportal/publications/745-landwirtschaftsstatistik/2020/01/1/745.2020.01_01_landwirtschaftsstatistik-2020.pdf.

B.2.1.5 **Additional subsidy for mountain farms**	
Subsidy	To support agriculture in mountain regions, an additional subsidy is granted to farms located in mountain areas.[104] This applies to the municipalities of Triesenberg, Schellenberg and Planken (excluding Schellenberger Riet, Ställa and Plankner Äscher). To be eligible, the farm's operational centre must be located in one of these municipalities, the land and mountain area must be farmed by the holding itself, and the livestock must be kept in a location-specific manner. The livestock population must amount to at least one roughage-consuming livestock unit (RCLU). A maximum stocking rate of 1.1 to 1.4 RCLU per hectare of grassland applies, depending on the region. In 2019, the mountain area subsidy was increased from CHF 1,150 to CHF 1,600 (for Triesenberg) and from CHF 850 to CHF 1,050 (for Planken and Schellenberg) per RCLU (as of 2022) to compensate for the location-related economic disadvantages faced by mountain farms compared to valley farms.[105]
Impact on biodiversity	Intensive management of meadows and pastures, for example as a result of promoting animal husbandry, increases nutrient input and reduces biodiversity.[106]
Degree of harmful impact on biodiversity	Low
Subsidy type	On-budget
Level of subsidy	CHF 511,405 (in 2020)[107]
Harmful proportion of subsidy	Depending on implementation
Regulatory framework	Article 9 LEV
Political trade-offs	Securing the income of Liechtenstein's farms vs. preserving and promoting biodiversity
Possible solutions	The additional subsidy for mountain areas is tied to biodiversity-promoting conditions.

[104] Statement No. 98/2013 on the issues raised during the first reading concerning the amendment of the Agriculture Act: https://bua.regierung.li/BuA/default.aspx?year=2013&nr=98&content=1188822251&erweitert=true.
[105] Report and Motion No. 111/2022 on the Agricultural Policy Report 2022: https://bua.regierung.li/BuA/default.aspx?nr=111&year=2022&filter1=agrarpolitischer+bericht&backurl=modus%3dsearch%26filter1%3dvt%26filter2%3dagrarpolitischer+bericht&sh=1918113611.
[106] Federal Office of the Environment (2023), Biodiversität schützen und fördern – viele Herausforderungen, aber auch Erfolgsgeschichten: https://www.bafu.admin.ch/bafu/de/home/themen/biodiversitaet/dossiers/biodiversitaet-schuetzen-und-foerdern.html#-794346295.
[107] Office of Statistics (2021), Agriculture Statistics 2020: https://www.statistikportal.li/statistikportal/publications/745-landwirtschaftsstatistik/2020/01/1/745.2020.01_01_landwirtschaftsstatistik-2020.pdf.

B.2.1.6 **Additional subsidy for selected arable crops (ha)**	
Subsidy	The additional subsidy for selected arable crops is intended to promote the economic viability of cultivating specific crops such as sugar beet, rapeseed, soya or protein peas, thereby aiming to achieve a certain degree of self-sufficiency in a variety of plant-based raw materials. Subsidies may also be granted for the seed production of maize, potatoes and fodder crops.[108] A prerequisite is that the area under each crop must be at least 20 ares per farm. Specific conditions apply to sugar beet, potatoes, maize, forage grasses and forage legumes, as well as to mixtures of field beans, protein peas and lupins with cereals, and to hemp. Exclusion criteria also exist for certain arable crops. Both intensive and extensive production are supported equally.
Impact on biodiversity	This promotion of selected arable crops also subsidises potentially intensive production, which can have a harmful impact on biodiversity – for example, through the use of pesticides. At the same time, certain arable crops may also have the potential to promote biodiversity, particularly soil biodiversity.
Degree of harmful impact on biodiversity	Medium
Subsidy type	On-budget
Level of subsidy	CHF 62,023 (in 2020)[109]
Harmful proportion of subsidy	Depending on implementation
Regulatory framework	Articles 10 and 11 LEV
Political trade-offs	Securing the income of Liechtenstein's farms vs. preserving and promoting biodiversity
Possible solutions	(i) Subsidies are granted only if the selected crops are cultivated in a biodiversity-friendly manner. (ii) Subsidies are granted only for arable crops intended for direct human consumption.

[108] Statement No. 98/2013 on the issues raised during the first reading concerning the amendment of the Agriculture Act: https://bua.regierung.li/BuA/default.aspx?year=2013&nr=98&content=1188822251&erweitert=true.
[109] Office of Statistics (2021), Agriculture Statistics 2020: https://www.statistikportal.li/statistikportal/publications/745-landwirtschaftsstatistik/2020/01/1/745.2020.01_01_landwirtschaftsstatistik-2020.pdf.

B.2.1.7 **Additional subsidy for roughage-consuming livestock**	
Subsidy	The subsidy per RCLU is determined in accordance with Article 14(d) LEV. At least one RCLU must be kept, and there must be a sufficient on-farm supply of roughage. Depending on the region, the stocking rate is limited to a specific number of animals per hectare of grassland.
Impact on biodiversity	Livestock farming can negatively impact biodiversity and place stress on ecosystems due to excessive nitrogen inputs. Particularly high nitrogen levels occur where imported feed is used and artificial fertilisers are applied. However, recognised farms are required to maintain a balanced fertiliser budget in accordance with Article 10 LBAV. The aim is to close nutrient cycles as much as possible.[110] In Switzerland, it is assumed that although farms comply with nutrient balance requirements, overfertilisation still occurs because these balances are not aligned with the ecological carrying capacity of the sites. Guntern et al. (2020) therefore identify the following as one of several possible approaches: "Adaptation of agricultural production intensity to the potential and ecological carrying capacity of the site."[111] In the Alps, overly intensive farming practices – such as the use of heavy animals, fertilisers, and concentrated feed – can disrupt the sensitive habitats of meadows and pastures. This may lead to the loss of small landscape features and mountain flowers, depriving insects, reptiles and breeding birds that depend on them of their habitats.[112]
Degree of harmful impact on biodiversity	High
Subsidy type	On-budget
Level of subsidy	CHF 2,211,754 (in 2020)[113]
Harmful proportion of subsidy	Depending on implementation
Regulatory framework	Articles 12, 21 and 22 LEV
Political trade-offs	Securing the income of Liechtenstein's farms vs. preserving and promoting biodiversity
Possible solutions	(i) The stocking rate per hectare – and thus the nutrient input – is reduced to a level that promotes biodiversity. (ii) Subsidies are granted only for site-adapted breeds that, for example, do not require concentrated feed.

[110] Federal Office of the Environment (2024), Biodiversität: Das Wichtigste in Kürze: https://www.bafu.admin.ch/bafu/de/home/themen/biodiversitaet/inkuerze.html#:~:text=Besonders%20negativ%20auf%20die%20Biodiversit%C3%A4t,Drittel%20der%20empfindlichen%20%C3%96kosysteme%20belasten.

111 Guntern J. et al. (2020), Übermässige Stickstoff- und Phosphoreinträge schädigen Biodiversität, Wald und Gewässer. Swiss Academies Factsheet 15 (8), p. 5: https://zenodo.org/records/4269631.

[112] Pro Natura (2024), Die Alpen sind unter Druck: https://www.pronatura.ch/de/alpen.

[113] Office of Statistics (2021), Agriculture Statistics 2020: https://www.statistikportal.li/statistikportal/publications/745-landwirtschaftsstatistik/2020/01/1/745.2020.01_01_landwirtschaftsstatistik-2020.pdf.

B.2.1.8 **Soil improvement measures for agricultural production**	
Subsidy	In agriculture, buildings, facilities and measures for soil improvement are subsidised by the State. This includes drainage and recultivation (excluding landfills using debris sludge and excavation from construction sites), as well as permanently installed irrigation systems and pumping stations.[114] Two projects aimed at improving soils were approved in 2022.[115] According to Article 3(1)(d) BVV, subsidised buildings, facilities and measures for soil improvement must comply with the provisions on soil protection, environmental protection, and nature and landscape conservation, and must give due consideration to the principles of local and regional planning.
Impact on biodiversity	Drainage contributes to the further loss of (potential) wetland habitats. Irrigation has an intensifying effect and contributes to the loss of dry and nutrient-poor habitats.
Degree of harmful impact on biodiversity	Drainage in organic soils: High Irrigation: Low
Subsidy type	On-budget
Level of subsidy	CHF 174,130[116] (in 2022)
Harmful proportion of subsidy	Entire
Regulatory framework	BVV
Political trade-offs	Increasing agricultural production vs. preserving and promoting biodiversity
Possible solutions	Soil improvements are financially supported only if they do not harm local biodiversity. If potential wetland sites are lost due to soil improvement measures, equivalent sites are created elsewhere.

B.2.2 Market promotion measures

Liechtenstein supports measures to promote the marketing and processing of agricultural products.[117] This support amounted to CHF 1,453,000 in 2022 and comprised a contribution to the Agricultural Marketing Foundation, product-related allowances, and participation in Swiss agricultural marketing. In 2022, income included CHF 807,485 from participation in the auctioning of tariff quotas, and in 2021, CHF 33,606 from compensation within the joint market with Switzerland.[118]

B.2.2.1 **Subsidy to the Agricultural Marketing Foundation**	
Subsidy	The Agricultural Marketing Foundation was established in 2008 to ensure the sustainable success of sales promotion measures.[119] As a result of the agricultural policy report adopted by Parliament in 2022, the foundation was to be replaced by a

[114] Ordinance of 29 September 2009 on Soil Improvements in Agriculture (Soil Improvement Ordinance; BVV), LGBI. 2009 No. 254.
[115] Government of the Principality of Liechtenstein (2023), Accountability Report 2022.
[116] Government of the Principality of Liechtenstein (2023), Accountability Report 2022.
[117] Agriculture Act (LWG) of 11 December 2008, LGBI. 2009 No. 042.
[118] Government of the Principality of Liechtenstein (2023), Accountability Report 2022.
[119] Report and Motion No. 90/2007 concerning the financial resolution on the approval of a commitment credit for participation in agricultural marketing measures: https://bua.regierung.li/BuA/default.aspx?nr=111&year=2022&filter1=agrarpolitischer+bericht&backurl=modus%3dsearch%26filter1%3dvt%26filter2%3dagrarpolitischer+bericht&sh=1918113611.

	commission and has therefore been in liquidation since September 2024.[120] During the same period, the Government enacted the Ordinance on the Promotion of Processing and Sales of Domestic Agricultural Products (LVAV), which established the legal basis for the creation of a commission. The Commission for the Promotion of Processing and Sales of Domestic Agricultural Products is dedicated to supporting the processing and marketing of domestic agricultural products. Its aims are to strengthen the value chains of domestic agricultural products and the circular economy in agriculture, increase the consumption of domestic agricultural products, and support the processing sector in developing innovative agricultural products.[121]
Impact on biodiversity	State-funded marketing measures have so far been used – and may continue to be used – to promote the sale of meat and eggs. This could lead to an increase in biodiversity-relevant ammonia emissions and greater use of agricultural land for animal production.[122]
Degree of harmful impact on biodiversity	Medium
Subsidy type	On-budget
Level of subsidy	CHF 220,000 (in 2022)[123]
Harmful proportion of subsidy	Partial
Regulatory framework	Agricultural Products Processing and Sales Promotion Ordinance (LVAV)[124]
Political trade-offs	Protection from foreign competition vs. preserving and promoting biodiversity
Possible solutions	(i) State contributions for market promotion are granted only for agricultural products that are produced in a location-adapted and biodiversity-promoting manner. (ii) No contributions are granted for the market promotion of meat and eggs.

B.2.2.2 **Participation in Swiss agricultural measures**

Subsidy	Liechtenstein participates in various Swiss agricultural measures. In addition to sales promotion, this includes measures in animal breeding, dairy farming, livestock farming, and other areas. A complete list can be found in Annex 1 of the Agreement between Liechtenstein and Switzerland governing Liechtenstein's Participation in Market and Price Support Measures under Swiss Agricultural Policy of 28 September 2020.[125]
Impact on biodiversity	The various supported agricultural measures – for example, marketing in favour of meat and eggs – can have a harmful impact on biodiversity.

[120] Liechtenstein Commercial Register (2024), Agricultural Marketing Liechtenstein Foundation in Liquidation: https://handelsregister.li/cr-portal/auszug.xhtml?uid=FL-0002.289.507-0.
[121] Ordinance of 10 September 2024 on the Promotion of Processing and Sales of Domestic Agricultural Products (Agricultural Products Processing and Sales Promotion Ordinance; LVAV), LGBl. 2024 No. 331.
[122] Federal Office for Agriculture and State Secretariat for Economic Affairs (2024), Beilage Agrar- und regionalpolitische Evaluationen: https://www.newsd.admin.ch/newsd/message/attachments/88327.pdf.
[123] Government of the Principality of Liechtenstein (2023), Accountability Report 2022.
[124] Ordinance of 10 September 2024 on the Promotion of Processing and Sales of Domestic Agricultural Products (Agricultural Products Processing and Sales Promotion Ordinance; LVAV), LGBl. 2024 No. 331.
[125] Agreement between Liechtenstein and Switzerland governing Liechtenstein's Participation in Market and Price Support Measures under Swiss Agricultural Policy, entry into force: 1 January 2020, LGBl. 2020 No. 347.

Degree of harmful impact on biodiversity	Medium
Subsidy type	On-budget
Level of subsidy	CHF 591,961[126]
Harmful proportion of subsidy	Partial
Regulatory framework	Agreement between Liechtenstein and Switzerland governing Liechtenstein's Participation in Market and Price Support Measures under Swiss Agricultural Policy (including: SR 916.010, Ordinance of 9 June 2006 on Support for the Promotion of Sales of Agricultural Products)
Political trade-offs	Protection from foreign competition vs. preserving and promoting biodiversity
Possible solutions	Liechtenstein works, within the scope of its possibilities, to ensure that Switzerland aligns the supported promotional measures in a manner that promotes biodiversity.

[126] Government of the Principality of Liechtenstein (2023), Accountability Report 2022.

B.2.2.3 **Product-specific subsidies**	
Subsidy	In addition to the market and price support measures implemented by Switzerland, in which Liechtenstein participates financially, Liechtenstein also provides its own contributions in the form of product-linked allowances, based on the agreement with Switzerland. These allowances are paid for commercial milk and cereals.[127]
Impact on biodiversity	Product-specific subsidies lower prices, which generally leads to increased demand. Greater demand for commercial milk can result in higher livestock numbers or more intensive production, leading to increased ammonia emissions – relevant to biodiversity – in both air and soil.[128]
Degree of harmful impact on biodiversity	Low
Subsidy type	On-budget
Level of subsidy	CHF 641,043[129]
Harmful proportion of subsidy	Partial
Regulatory framework	Article 2(f) LWG Agreement between Liechtenstein and Switzerland governing Liechtenstein's Participation in Market and Price Support Measures under Swiss Agricultural Policy (including: SR 916.010, Ordinance of 9 June 2006 on Support for the Promotion of Sales of Agricultural Products)
Political trade-offs	Protection from foreign competition vs. preserving and promoting biodiversity
Possible solutions	Liechtenstein works, within the scope of its possibilities, to ensure that Switzerland limits the product-specific allowances for milk and cereals to those produced in a manner that promotes biodiversity.

[127] Agreement between Liechtenstein and Switzerland governing Liechtenstein's Participation in Market and Price Support Measures under Swiss Agricultural Policy, entry into force: 1 January 2020, LGBl. 2020 No. 347.
[128] Federal Office for Agriculture and State Secretariat for Economic Affairs (2024), Beilage Agrar- und regionalpolitische Evaluationen: https://www.newsd.admin.ch/newsd/message/attachments/88327.pdf.
[129] Government of the Principality of Liechtenstein (2023), Accountability Report 2022.

B.2.2.4 **Third-party services (agricultural advisory, research and self-help)**	
Subsidy	State-supported third-party services relate to the following areas: agricultural advisory services, agricultural research, and the initiative of agricultural self-help organisations. Advisors are supported if they provide services in business management, production technology, agroecology, social matters, or animal welfare. The purpose of research is to generate scientific knowledge and technical foundations for sustainable and ecological agriculture, to inform agricultural policy decisions and the implementation of agricultural legislation, and to develop, accompany, and evaluate agricultural policy measures. Funding for self-help is primarily directed towards sector and producer organisations, machinery and farm support groups, machinery cooperatives, advisory and quality assurance services, and breeders' associations. Self-help measures may include information exchange, public relations, advisory services, and sales promotion.[130]
Impact on biodiversity	Third-party services can promote agricultural production that is harmful to biodiversity – for example, through the intensification of production or structural improvement measures.
Degree of harmful impact on biodiversity	Unclear
Subsidy type	On-budget
Level of subsidy	CHF 183,082[131] (in 2022)
Harmful proportion of subsidy	Partial
Regulatory framework	LDFV[132]
Political trade-offs	Support for farmers through information, knowledge, further training, and strengthening self-help vs. preserving and promoting biodiversity
Possible solutions	(i) Agricultural advisory services focus on sustainable, biodiversity-preserving and environmentally friendly recommendations, and support farmers in phasing out practices that are harmful to biodiversity. (ii) Subsidies to advisory organisations, producer and industry associations, or breeding associations are critically reviewed. Alternatively, such subsidies could be paid directly to farms, allowing them to independently select the service providers and services they wish to use.

[130] Ordinance of 14 July 2009 on the Promotion of Third-Party Services in Agriculture (Agricultural Services Promotion Ordinance; LDFV), LGBl. 2009 No. 214.
[131] Government of the Principality of Liechtenstein (2023), Accountability Report 2022.
[132] Ordinance of 14 July 2009 on the Promotion of Third-Party Services in Agriculture (Agricultural Services Promotion Ordinance; LDFV), LGBl. 2009 No. 214.

B.2.2.5 **Subsidies for animal breeding (direct performance comparisons)**	
Subsidy	Animal breeding organisations, such as the Liechtenstein Animal Breeding Interest Group, are supported through contributions to animal breeding.[133] The work of the interest group focuses on cattle, pigs, sheep, goats, equidae, New World camelids, rabbits, poultry, and bees. In 2022, funding was provided for three premium markets and eleven projects related to market development, exhibitions, and the promotion of animal breeding achievements.[134]
Impact on biodiversity	If promotion focuses on high-performance breeds, it contributes to the maintenance of intensive livestock production, which has negative effects on biodiversity.
Degree of harmful impact on biodiversity	Low
Subsidy type	On-budget
Level of subsidy	CHF 64,000[135]
Harmful proportion of subsidy	Depending on implementation
Regulatory framework	TZV[136]
Political trade-offs	Animal breeding vs. biodiversity conservation and promotion
Possible solutions	Financial support for animal breeding is tied to the aim of promoting location-adapted and robust breeds.

[133] Ordinance of 17 August 2021 on the Promotion of Animal Breeding (Animal Breeding Promotion Ordinance; TZV), LGBI. 2021 No. 060.
[134] Government of the Principality of Liechtenstein (2023), Accountability Report 2022.
[135] Government of the Principality of Liechtenstein (2023), Accountability Report 2022.
[136] Ordinance of 17 August 2021 on the Promotion of Animal Breeding (Animal Breeding Promotion Ordinance; TZV), LGBI. 2021 No. 060.

B.2.2.6 **Maintenance of mountain areas and slopes**	
Subsidy	State subsidies are granted for the management of green spaces in mountain areas, on slopes, and at marginal yield sites.[137] The conditions for this support are that the total cultivated area must be at least 50 ares and must be properly managed (e.g. no overuse or trampling damage). For marginal yield sites, there must also be a public interest, and the area must not have been cultivated during the past three years.[138]
Impact on biodiversity	The impact of such maintenance subsidies is not clear. In Switzerland, it has been shown that cultural landscape contributions (which the support for the maintenance of mountain areas and slopes discussed here likely resembles) can have a negative impact on biodiversity. In contrast, biodiversity-related subsidies have a positive impact.[139]
Degree of harmful impact on biodiversity	Low
Subsidy type	On-budget
Level of subsidy	CHF 508,517[140] (in 2022)
Harmful proportion of subsidy	Depending on implementation
Regulatory framework	Ordinance of 2 March 2010 on the Promotion of Landscape Conservation of Mountain Areas, Slopes and Marginal Yield Sites (Landscape Conservation Promotion Ordinance; LPFV)[141]
Political trade-offs	Compensation for production-related challenges in mountain areas, slopes and marginal yield sites, landscape conservation efforts, and widespread management of agricultural land vs. biodiversity conservation and promotion
Possible solutions	The subsidies are tied to biodiversity promotion criteria.

[137]Office of Statistics (2021), Agriculture Statistics 2020: https://www.statistikportal.li/statistikportal/publications/745-landwirtschaftsstatistik/2020/01/1/745.2020.01_01_landwirtschaftsstatistik-2020.pdf.
[138] Ordinance of 2 March 2010 on the Promotion of Landscape Conservation of Mountain Areas, Slopes and Marginal Yield Sites (Landscape Conservation Promotion Ordinance; LPFV), LGBl. 2010 No. 053.
[139] Bystricky, M., Mack, G., Gailard G. et al. (2024), Evaluation agrarpolitischer Massnahmen bezüglich Biodiversitätswirkung Versorgungssicherheitsbeiträge und Grenzschutz, Agroscope Science Agroscope, 187: https://ira.agroscope.ch/de-CH/publication/56506.
[140] Government of the Principality of Liechtenstein (2023), Accountability Report 2022.
[141] Ordinance of 2 March 2010 on the Promotion of Landscape Conservation of Mountain Areas, Slopes and Marginal Yield Sites (Landscape Conservation Promotion Ordinance; LPFV), LGBl. 2010 No. 053.

B.2.3 Structural support measures (subsidies for agricultural infrastructure)

Liechtenstein supports the improvement of agricultural structures through various subsidies to ensure the economic viability of farms. In 2022, a total of CHF 1,110,997 was paid out in subsidies for structural support measures.[142]

B.2.3.1 **Subsidies for new construction and renovations**	
Subsidy	This budget is used to support the following types of farm infrastructure: the construction, renovation or expansion of agricultural buildings or facilities, including operational equipment and access routes, as well as the construction of new livestock buildings and facilities, provided these comply with the standards for particularly animal-friendly housing systems. A prerequisite for all projects is that the buildings and facilities are planned, designed, and constructed in accordance with the provisions of spatial planning, building, animal welfare, and environmental protection legislation. The subsidy covers 40% of eligible investment costs, with 50% of the subsidy paid as a one-off amount and the remaining 50% disbursed in instalments over time.[143]
Impact on biodiversity	New buildings and their expansion, as well as new or extended roads and paths, fragment the landscape, contribute to habitat loss, and thereby harm biodiversity. Furthermore, new infrastructure can lead to the intensification of agriculture, which also has negative consequences for biodiversity.
Degree of harmful impact on biodiversity	Medium
Subsidy type	On-budget
Level of subsidy	One-off subsidy: CHF 199,791[144] (in 2022) Staggered subsidy: CHF 404,947[145] (in 2022)
Harmful proportion of subsidy	Partial
Regulatory framework	Ordinance of 14 July 2009 on the Promotion of Farm Infrastructure (Farm Infrastructure Promotion Ordinance; LIFV)
Political trade-offs	Supporting farmers with investments vs. preserving and promoting biodiversity
Possible solutions	(i) Subsidies are tied to biodiversity criteria. (ii) Due to their highly negative impact on biodiversity, new roads and paths continue to be excluded from funding.

[142] Government of the Principality of Liechtenstein (2023), Accountability Report 2022.
[143] Ordinance of 14 July 2009 on the Promotion of Farm Infrastructure (Farm Infrastructure Promotion Ordinance; LIFV), LGBl. 2009 No. 211.
[144] Government of the Principality of Liechtenstein (2023), Accountability Report 2022.
[145] Government of the Principality of Liechtenstein (2023), Accountability Report 2022.

B.2.3.2 **Interest service**	
Subsidy	This subsidy is used to reduce the cost of loans for the following infrastructure projects on recognised agricultural holdings: the construction, renovation or expansion of agricultural buildings or facilities, including operational equipment and access routes, as well as the construction of new livestock buildings and facilities, provided these comply with the standards for particularly animal-friendly housing systems. All projects must be planned, designed and implemented in accordance with the provisions of spatial planning, construction, animal welfare and environmental protection legislation. Liechtenstein covers the interest on external financing for 50% of the eligible costs, provided these fall between CHF 100,000 and CHF 550,000.[146]
Impact on biodiversity	As a rule, new buildings and their expansion, as well as new or extended roads and paths, fragment the landscape, contribute to habitat loss, and thereby harm biodiversity. Furthermore, new infrastructure can lead to the intensification of agriculture, which also has negative consequences for biodiversity.
Degree of harmful impact on biodiversity	Medium
Subsidy type	On-budget
Level of subsidy	CHF 101,591[147] (in 2022) (budgeted for 2023: CHF 200,000[148])
Harmful proportion of subsidy	Partial
Regulatory framework	LIFV
Political trade-offs	Supporting farmers with investments vs. preserving and promoting biodiversity
Possible solutions	The assumption of interest is tied to biodiversity criteria for the respective investments.

[146] Ordinance of 14 July 2009 on the Promotion of Farm Infrastructure (Farm Infrastructure Promotion Ordinance; LIFV), LGBl. 2009 No. 211.
[147] Government of the Principality of Liechtenstein (2023), Accountability Report 2022.
[148] Report and Motion No. 111/2022 on the Agricultural Policy Report 2022: https://bua.regierung.li/BuA/default.aspx?nr=111&year=2022&filter1=agrarpolitischer+bericht&backurl=modus%3dsearch%26filter1%3dvt%26filter2%3dagrarpolitischer+bericht&sh=1918113611.

B.2.3.3 **Alpine infrastructure**	
Subsidy	Subsidies for alpine infrastructure are awarded for the construction, renovation or expansion of buildings, facilities, paths, drainage systems and water supplies, as well as for pasture improvements. They are disbursed either as a share of the investment costs or as direct contributions. A prerequisite is appropriate, environmentally friendly and sustainable alpine management.[149]
Impact on biodiversity	Buildings, facilities, paths and drainage systems have a fragmenting impact on ecosystems. They contribute to habitat loss and can drive the intensification of land use, which is harmful to biodiversity.
Degree of harmful impact on biodiversity	High (in view of the often still intact habitats concerned)
Subsidy type	On-budget
Level of subsidy	CHF 48,465[150] (in 2022)
Harmful proportion of subsidy	Entire
Regulatory framework	AIFV
Political trade-offs	Alpine management vs. preserving and promoting biodiversity
Possible solutions	(i) When supporting alpine infrastructure, explicit requirements are set to promote biodiversity. (ii) The legal requirement for these subsidies (appropriate, environmentally friendly and sustainable alpine management) is met and put into practice.

[149] Ordinance of 7 July 2009 on the Promotion of Alpine Infrastructure (Alpine Infrastructure Promotion Ordinance; AIFV), LGBI. 2009 No. 198.
[150] Government of the Principality of Liechtenstein (2023), Accountability Report 2022.

B.2.3.4 **Support for economic viability (loans for entering agriculture)**	
Subsidy	Before the age of 36, recognised farmers can make use of a one-off start-up aid in the form of an interest-free loan, determined according to the farm's labour requirements and repayable within ten years.[151]
Impact on biodiversity	Without defined criteria for promoting biodiversity, the loan can be used to support intensive agriculture that is harmful to biodiversity.
Degree of harmful impact on biodiversity	Unclear
Subsidy type	Off-budget
Level of subsidy	The amount of the subsidy corresponds to the interest lost on the loan portfolio, which could not be quantified. In 2022, CHF 280,000 was paid out and CHF 139,200 was received in loan repayments.[152] Assuming a loan portfolio of CHF 1.4 to 2.8 million, the lost interest – at an interest rate of 1.75% – amounts to CHF 24,500 to 49,000 per year.
Harmful proportion of subsidy	Depending on implementation
Regulatory framework	LBMV
Political trade-offs	Start-up aid for farmers vs. preserving and promoting biodiversity
Possible solutions	The interest-free loan is granted only to farmers who manage their farms according to site-appropriate and biodiversity-promoting criteria.

[151] Ordinance of 14 July 2009 on Social Accompanying Measures in Agriculture (Agricultural Accompanying Measures Ordinance; LBMV), LGBl. 2009 No. 212.
[152] Government of the Principality of Liechtenstein (2023), Accountability Report 2022, p. 557.

B.2.3.5 **Reduced VAT on imports of fertilisers, plant protection products and animal feed**	
Subsidy	Liechtenstein grants a reduced VAT rate of 2.6% (instead of 8.1%) on feedstuffs, fertilisers, pesticides and other items.[153] This lowers the cost of using pesticides and supplying fertiliser. The reduced cost of fertilisers, feedstuffs and pesticides promotes intensive production.
Impact on biodiversity	Pesticides place considerable pressure on biodiversity. Fertiliser use can also be harmful to biodiversity when more nitrogen is applied than is removed from the field. This leads to nitrogen accumulation, resulting in nitrate leaching and the emission of NO_2 and ammonia.[154] The use of nitrogen fertilisers also contributes to greenhouse gas emissions. These include direct nitrous oxide emissions from fertilised soils and indirect nitrous oxide emissions caused by the transport of reactive nitrogen compounds (ammonia and nitrate) into sensitive soils[155] that should not be fertilised, such as nutrient-poor habitats, peatlands and forests. Nitrogen input from mineral commercial fertilisers is higher in Liechtenstein than in neighbouring countries.[156] Mineral commercial fertilisers are produced from non-organic materials and can require large amounts of energy during manufacture.
Degree of harmful impact on biodiversity	High
Subsidy type	Off-budget
Level of subsidy	Not quantifiable
Harmful proportion of subsidy	Entire
Regulatory framework	Treaty with Switzerland on Value Added Tax (LGBl. 1995 No. 30), including agreement (LGBl 2012 No. 238)
Political trade-offs	Protection/support of national agriculture vs. preserving and promoting biodiversity
Possible solutions	Liechtenstein is not autonomous in the area of value added tax: within the scope of its possibilities, Liechtenstein works to ensure that Swiss legislation applies the regular VAT rate of 8.1% to animal feed, silage acids, animal bedding, fertilisers and pesticides.

[153] Law of 22 October 2009 on Value Added Tax (Value Added Tax Act; MWSTG), LGBl. 2009 No. 330.
[154] Federal Office for the Environment & Federal Office for Agriculture (2012), Nährstoffe und Verwendung von Düngern in der Landwirtschaft: Ein Modul der Vollzugshilfe Umweltschutz in der Landwirtschaft, partially revised edition 2021: https://www.bafu.admin.ch/bafu/de/home/themen/wasser/publikationen-studien/publikationen-wasser/naehrstoffe-verwendung-duengern-landwirtschaft.html.
[155] Government of the Principality of Liechtenstein 2021, Liechtenstein's Greenhouse Gas Inventory 1990 – 2019, National Inventory Report 2021: https://www.llv.li/files/au/li_2021_nir.pdf.
[156] Report and Application No. 111/2022 on the Agricultural Policy Report 2022: https://bua.regierung.li/BuA/default.aspx?nr=111&year=2022&filter1=agrarpolitischer+bericht&backurl=modus%3dsearch%26filter1%3dvt%26filter2%3dagrarpolitischer+bericht&sh=1918113611.

B.2.3.6 **Border protection**	
Subsidy	Switzerland's high level of border protection in the agricultural sector by international standards also applies in Liechtenstein through the Customs Treaty; the same import duties apply across the entire customs territory of Switzerland and Liechtenstein. Border protection for meat is high. Agricultural inputs such as pesticides, mineral fertilisers and animal feed, on the other hand, are hardly or not at all subject to border duties,[157] which particularly promotes intensive (livestock) production.
Impact on biodiversity	In Switzerland, border protection has been classified as one of eight instruments with the greatest impact on biodiversity.[158] Given that import duties ensure higher prices for domestic agricultural products, these products are consequently produced in larger quantities. This results in more intensive use of agricultural land, which has a harmful impact on biodiversity. Border protection for meat in particular has a strong negative effect in this regard, as it leads to more intensive land use in mountain areas. Similar effects are likely from border protection measures for dairy products and eggs.[159] The low border protection on agricultural input products (such as pesticides, fertilisers and animal feed) significantly supports and lowers the cost of intensive agricultural production, as the end product is protected from imports while inputs can be imported at low cost.
Degree of harmful impact on biodiversity	Medium
Subsidy type	Off-budget
Level of subsidy	Jointly with Switzerland: CHF 3.3 billion (OECD estimate)[160]
Harmful proportion of subsidy	Partial
Regulatory framework	Regulation under the Customs Treaty: FDF Customs Ordinance (CustO-FDF), SR 631.011, and other legal bases
Political trade-offs	Protecting agriculture from foreign competition and safeguarding self-sufficiency vs. preserving and promoting biodiversity
Possible solutions	(i) Liechtenstein monitors developments in Switzerland: According to Agroscope, grassland in the Swiss mountain region would be farmed much more extensively without border protection. If the area is used as a biodiversity promotion area instead of for meat production, this has a positive effect on biodiversity.[161] Swiss customs law, including the determination of import duty levels, is an integral part of the Customs Treaty, and there appears to be no room for manoeuvre on the part of Liechtenstein.

[157] Federal Office for Customs and Border Security (2024), Swiss General Tariff: https://www.google.ch/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwicxuv6596JAxXeR_4FHUJUM6IQFnoECCUQAQ&url=https%3A%2F%2Fwww.bazg.admin.ch%2Fdam%2Fbazg%2Fde%2Fdokumente%2Farchiv%2Fa5%2Fgesetz%2Fgeneraltarif.pdf.download.pdf%2Fgeneraltarif.pdf&usg=AOvVaw17baMoDZbaaRbKz8FfVBJ4&opi=89978449.

[158] The Federal Council (2024), Biodiversität: Gezielte Verbesserungen bei Bundessubventionen: https://www.bafu.admin.ch/bafu/de/home/themen/biodiversitaet/mitteilungen.msg-id-101487.html.

[159] Agroscope (2024): Evaluation agrarpolitischer Massnahmen bezüglich Biodiversitätswirkung: Versorgungssicherheitsbeiträge und Grenzschutz: https://ira.agroscope.ch/de-CH/publication/56506.

[160] Federal Office for Agriculture (2018), Vernehmlassung zur Agrarpolitik ab 2022 (AP22+), Erläuternder Bericht: https://www.newsd.admin.ch/newsd/message/attachments/54525.pdf.

[161] Agroscope (2024), Evaluation agrarpolitischer Massnahmen bezüglich Biodiversitätswirkung: Versorgungssicherheitsbeiträge und Grenzschutz: https://ira.agroscope.ch/de-CH/publication/56506.

B.2.3.7 **Animal disease control**	
Subsidy	To combat animal diseases, contributions are made to the special fund for the control of animal diseases. This fund is financed through State funds, livestock trade patent fees, summering fees for foreign livestock, annual contributions from livestock and bee owners, and other sources.[162]
Impact on biodiversity	Given that the costs of combating animal diseases are not borne entirely by the industry itself, this financial support promotes the production of animal products, which has a harmful impact on biodiversity.
Degree of harmful impact on biodiversity	Low
Subsidy type	On-budget
Level of subsidy	CHF 143,921[163] (in 2022)
Harmful proportion of subsidy	Partial
Regulatory framework	Epizootic Diseases Act (EzDA, SR 916.40), Law on the Control of Animal Diseases
Political trade-offs	Combating highly contagious animal diseases vs. preserving and promoting biodiversity
Possible solutions	The animal disease fund is financed by the industry itself without State support.

[162] Law of 20 October 1966 on the Control of Animal Diseases, LGBI. 1966 No. 027.
[163] Government of the Principality of Liechtenstein (2023), Accountability Report 2022.

Other subsidies with a potential harmful impact on biodiversity

Support instrument	Subsidy level	Potential harmful impact on biodiversity
Regular outdoor access for livestock (category: animal-friendly farm management)	CHF 739,267 (2020)[164]	Supporting livestock numbers
Particularly animal-friendly housing systems (category: animal-friendly farm management)	CHF 300,417 (2020)[165]	Supporting livestock numbers
Additional subsidy for the alpine grazing of roughage-consuming livestock (RCLU)	CHF 309,807 (in 2020)[166]	Supporting livestock numbers
Integrated mountain area rehabilitation: alpine farming	CHF 333,336 (in 2022)[167]	Land consumption, soil sealing and fragmentation of the landscape; supporting livestock numbers; maintaining the status quo and thereby preventing the expansion of alpine wilderness
Refund of mineral oil tax, see Transport chapter	Not quantifiable (for Switzerland in 2021: CHF 81 million)	Subsidisation of CO_2 emissions, intensification of climate change

[164] Office of Statistics (2021), Agriculture Statistics 2020: https://www.statistikportal.li/statistikportal/publications/745-landwirtschaftsstatistik/2020/01/1/745.2020.01_01_landwirtschaftsstatistik-2020.pdf.
[165] Office of Statistics (2021), Agriculture Statistics 2020: https://www.statistikportal.li/statistikportal/publications/745-landwirtschaftsstatistik/2020/01/1/745.2020.01_01_landwirtschaftsstatistik-2020.pdf.
[166] Office of Statistics (2021), Agriculture Statistics 2020: https://www.statistikportal.li/statistikportal/publications/745-landwirtschaftsstatistik/2020/01/1/745.2020.01_01_landwirtschaftsstatistik-2020.pdf.
[167] Government of the Principality of Liechtenstein (2023), Accountability Report 2022.

C Settlement development

C.1. Introduction

The various demands on space and its use present major challenges for spatial planning in Liechtenstein.[168] Of the total land area of 16,046 hectares, 11.3% (around 18 km²) is occupied by settlements.[169] Settlement areas continue to expand, partly through densification and partly through the extension of existing developed areas.[170] Some 58% of all residential buildings are single-family homes. This typical low-density, scattered settlement pattern is highly land-intensive.[171] A 2022 survey of total settlement reserves revealed that 510 hectares of reserve land remain within the designated building zone (which totals 1,761 hectares). Two thirds of these reserves lie within built-up areas, the remainder outside.[172]

Depending on their design, settlement areas can provide habitat for many species. However, they also exert various pressures and cause damage to biodiversity. For instance, soil sealing contributes to habitat loss and alters the water balance. It also leads to microclimate warming, including the formation of heat islands, thereby displacing cold-adapted species. Furthermore, settlements fragment habitats and disrupt them through various emissions, such as light and noise, pesticides from private households and public authorities, or phosphorus and other (micro)pollutants from urban wastewater.[173]

[168] Government of the Principality of Liechtenstein (2020), Liechtenstein Spatial Concept: https://www.regierung.li/files/attachments/raumkonzept-liechtenstein-2020-638354102112186129.pdf.
[169] Office of Statistics (2024), Liechtenstein in Figures 2024: https://www.statistikportal.li/statistikportal/publications/103-liechtenstein-in-figures/2024/01/1/103.2024.01.1_01_liechtenstein-in-figures-2024.pdf.
[170] Hilti Family Foundation Liechtenstein (2023), Entwicklung von Biodiversität und Landschaft in Liechtenstein: https://static1.squarespace.com/static/60058441dfad4a364920430b/t/6488227a1682fe5759ff9310/1686643329031/Biodiversit%C3%A4tsmonitoring+LI+Modellr%C3%A4ume_Massnahmen+Feb23.pdf.
[171] Office of Statistics (2023), Statistisches Jahrbuch Liechtenstein 2023: https://www.statistikportal.li/statistikportal/publications/101-statistisches-jahrbuch/2023/01/1/101.2023.01.1_02_statistisches-jahrbuch-2023.pdf.
[172] Government of the Principality of Liechtenstein (2022), raum+ Abschlussbericht Liechtenstein, Erhebung 2022: https://www.llv.li/serviceportal2/amtsstellen/amt-fuer-hochbau-und-raumplanung/raum-furstentum-liechtenstein-2022-abschlussbericht.pdf.
[173] Gubler et al. (2020).

C.2. Subsidies with a harmful impact on biodiversity

C.2.1 Exemption of landowners from site development costs

Subsidy	The municipality may charge landowners with the site development costs in accordance with Article 38(4) of the Building Act (BauG).[174] Based on this optional provision, only Eschen-Nendeln, of the eleven municipalities in Liechtenstein, levies a site development contribution of at least 35%.[175]
Impact on biodiversity	If landowners are not charged with the site development-related costs, this reduces the cost of land, promoting its use for construction and sealing, and thus contributing to habitat loss.
Degree of harmful impact on biodiversity	Medium
Subsidy type	Off-budget
Level of subsidy	Not quantified
Harmful proportion of subsidy	Entire
Regulatory framework	Article 38(4) BauG
	Responsibility of the municipalities
	Not regulated under EEA
	Not regulated under Customs Treaty
Political trade-offs	Municipal autonomy in determining development contributions vs. preserving and promoting biodiversity
Possible solutions	(i) Liechtenstein works within the scope of its possibilities to ensure that the municipalities pass on a binding share of the site development costs to landowners. (ii) The funds thus released by the municipalities can be used for the ecological enhancement of the settlement area.

[174] Building Act (BauG) of 11 December 2008, LGBl. 2009 No. 044.
[175] Municipality of Eschen-Nendeln (2021), Reglement über die Festlegung und Erhebung von Erschliessungskosten: https://www.eschen.li/wp-content/uploads/2023/03/Festlegung-und-Einhebung-Erschliessungskosten-20210217.pdf.

C.2.2 Waiver or minimal collection of the betterment levy as compensation for planning-related gains in land value	
Subsidy	In accordance with Article 7 of the Building Act (BauG), the municipal council may issue provisions in the building regulations concerning compensation for planning-related betterment. It determines the group of persons liable to pay the levy, the assessment criteria, the timing of the levy and its use.[176]
Impact on biodiversity	A waiver or minimal collection of the betterment levy constitutes a subsidisation of land, promoting its use for construction and sealing, and leading to habitat loss and pressure on adjacent habitats.
Degree of harmful impact on biodiversity	Medium
Subsidy type	Off-budget
Level of subsidy	Not quantified
Harmful proportion of subsidy	Entire
Regulatory framework	Article 7 BauG
	Responsibility of the State
	Not regulated under EEA
	Not regulated under Customs Treaty
Political trade-offs	Municipal autonomy in determining the betterment levy/subsidisation of land vs. preserving and promoting biodiversity
Possible solutions	Liechtenstein works within the scope of its possibilities to ensure that the municipalities introduce a binding levy rate of, for example, 50% on planning benefits, as provided for in the canton of Graubünden.

[176] This is handled inconsistently across the municipalities. In some of the municipalities that apply a betterment levy, the above-mentioned development costs are included.

C.2.3 Housing subsidies for high-density construction	
Subsidy	Liechtenstein promotes the construction, acquisition and renovation of single-family homes and residential units in densely built-up areas within the country, insofar as these are linked to a change of ownership. The funding is provided in the form of interest-free loans, subject to secured credit financing from a domestic bank.
Impact on biodiversity	Although densification reduces land consumption, it also results in habitat loss and reduced connectivity between individual habitats. Single-family homes in particular are land- and resource-intensive.
Degree of harmful impact on biodiversity	Medium
Subsidy type	On-budget
Level of subsidy	Loan portfolio: CHF 3,405,900 (in 2022)[177] Subsidy through interest waiver: an interest rate of 1.975% (average 10-year mortgage rate calculated between 2011 and 2021)[178] results in a subsidy of CHF 67,266.
Harmful proportion of subsidy	Partial
Regulatory framework	Article 2; Articles 20 and 21 of the Housing Construction Promotion Act (WBFG) [179] BauG with respect to proposed solutions:
	Responsibility of the State and the municipalities
	Not regulated under EEA
	Not regulated under Customs Treaty
Political trade-offs	Promoting housing development and densification (thereby limiting land take and urban sprawl) vs. preserving and promoting biodiversity in settlement areas
Possible solutions	(i) No further loans are granted for single-family homes under the housing subsidy programme. (ii) Densification should not be accompanied by additional soil sealing. The allowable gross floor area could be increased based on the permissible green area ratio. (iii) Underbuilt areas are not counted towards the green area ratio. (iv) The loans are subject to conditions that take biodiversity into account (e.g. outdoor space design).[180] (v) A mandatory underbuilding ratio is introduced to enable the design of larger outdoor spaces that promote biodiversity.

[177] Government of the Principality of Liechtenstein (2023), Accountability Report 2022.
[178] Office of Statistics, Statistisches Jahrbuch Liechtensteins 2023: https://www.statistikportal.li/statistikportal/publications/101-statistisches-jahrbuch/2023/01/1/101.2023.01.1_02_statistisches-jahrbuch-2023.pdf.
[179] Law of 30 June 1977 on the Promotion of Housing Construction (Housing Construction Promotion Act); WBFG), LGBl. 1977 No. 046.
[180] Gubler et al. (2020).

C.2.4 Exemption of rental income and property sales from VAT	
Subsidy	The sale and rental of properties and real estate are not subject to VAT. This makes housing more affordable and thus increases land consumption.[181]
Impact on biodiversity	See introductory explanations on biodiversity impacts in Chapter C.1. Settlement development.
Degree of harmful impact on biodiversity	Low
Subsidy type	Off-budget
Level of subsidy	Not quantifiable
Harmful proportion of subsidy	Entire
Regulatory framework	MWSTG
	Responsibility of the State
	Not regulated under EEA
	Treaty between the Principality of Liechtenstein and the Swiss Confederation on Value Added Tax in the Principality of Liechtenstein[182]
Political trade-offs	Tax policy vs. preserving and promoting biodiversity
Possible solutions	Liechtenstein is not autonomous in the area of value added tax. Within the scope of its possibilities in the mutual agreement procedure with Switzerland, Liechtenstein declares a reservation regarding the non-taxation of the rental and sale of real estate.

[181] Gubler et al. (2020).
[182] Treaty between the Principality of Liechtenstein and the Swiss Confederation on Value Added Tax in the Principality of Liechtenstein, entry into force: 1 January 1995, LGBl. 1995 No. 030.

C.2.5 Economic policy and support measures

Subsidy	Liechtenstein grants various subsidies to strengthen its position as a business location (securing the location and complementing this with a targeted business attraction policy).[183] These include annually recurring and ad hoc contributions to promote SMEs or to support the implementation of recurring events and projects, as well as contributions under service agreements with various institutions, such as Technopark (Liechtenstein) AG, Ideenkanal Foundation, and the Liechtenstein Hotel and Catering Association (LHGV).
Impact on biodiversity	Strengthening the business location attracts companies and thus creates jobs, which may be accompanied by additional soil sealing and increased commuter traffic. Support for the LHGV can promote additional tourism. These effects can contribute to habitat loss and increased resource consumption.
Degree of harmful impact on biodiversity	Low
Subsidy type	On-budget
Level of subsidy	CHF 1,131,115 (in 2022)[184]
Harmful proportion of subsidy	Partial
Regulatory framework	Law on the Financing of Economic Development Measures[185]
	Responsibility of the State
	Not regulated under EEA
	Not regulated under Customs Treaty
Political trade-offs	Strengthening the business location vs. preserving and promoting biodiversity
Possible solutions	Companies only receive funding if they present and implement strategies to reduce harm to biodiversity or to promote biodiversity (e.g. mobility management, outdoor space design, reduction of energy and resource consumption; and, from a certain company size, also the reduction of biodiversity damage along the value chain).

[183] Government of the Principality of Liechtenstein (2016), Standortstrategie 2.0: https://www.regierung.li/files/attachments/standortstrategie-mai2016-636002834799335119.pdf.
[184] Government of the Principality of Liechtenstein (2023), Accountability Report 2022.
[185] Law of 18 December 1997 on the Financing of Economic Development Measures, LGBl. 1998 No. 033.

D Tourism and recreation

D.1. Introduction

The majority of tourists in Liechtenstein are day visitors.[186] In 2022, accommodation providers reported around 200,000 overnight stays.[187] Tourism and recreational use in general place varying levels of pressure on biodiversity.[188] At the same time, biodiversity contributes to the attractiveness of tourism. The impacts of tourism on biodiversity include:

- Recreational and tourist traffic have a negative impact on biodiversity by accelerating climate change through CO_2 emissions or by polluting habitats, for example through tyre abrasion in road drainage (see also Transport chapter).
- Infrastructure such as cableways, ski lifts, hotels, mountain roads, etc. fragments, reduces and alters the affected habitats.[189]
- Disturbances caused by tourist activities such as hiking, snowshoeing or skiing, as well as trend sports like geocaching, paragliding and (e-)mountain biking.[190]

[186] Office of Statistics (2024), Liechtenstein in Figures 2024: https://www.statistikportal.li/statistikportal/publications/103-liechtenstein-in-figures/2024/01/1/103.2024.01.1_01_liechtenstein-in-figures-2024.pdf.

187 Report and Motion No. 114/2022 concerning the construction and renovation of transport infrastructure in Liechtenstein (Transport Infrastructure Report 2023): https://bua.regierung.li/BuA/default.aspx?nr=114&year=2022&backurl=modus%3dnr%26filter1%3d2022.

[188] Government of the Principality of Liechtenstein (2020), Liechtenstein Spatial Concept: https://www.regierung.li/files/attachments/raumkonzept-liechtenstein-2020-638354102112186129.pdf.

[189] Ketterer Bonelame et al. 2014, p. 8.

[190] Hilti Family Foundation Liechtenstein (2023), Entwicklung von Biodiversität und Landschaft in Liechtenstein: https://static1.squarespace.com/static/60058441dfad4a364920430b/t/6488227a1682fe5759ff9310/1686643329031/Biodiversit%C3%A4tsmonitoring+LI+Modellr%C3%A4ume_Massnahmen+Feb23.pdf.

D.2. Subsidies with a harmful impact on biodiversity

D.2.1 Bergbahnen Malbun

Subsidy	Liechtenstein supported the Bergbahnen Malbun mountain lifts in 2022 with a financial restructuring subsidy and a capital increase. In addition, annual contributions are to be made to the mountain lifts in future.[191]
Impact on biodiversity	The Malbun mountain lifts provide easy access to viewpoints and recreational activities in both summer and winter. This increases pressure on habitats in the surrounding area, reducing and impairing them through disturbance and fragmentation. Particularly noteworthy are the harmful impacts of snowmaking facilities, which alter snow-covered habitats by disrupting the water balance and causing the loss of small landscape features due to terrain levelling.[192,193]
Degree of harmful impact on biodiversity	Low
Subsidy type	On-budget
Level of subsidy	One-off: Bergbahnen Malbun financial restructuring: CHF 2,800,000 (in 2022)[194] Capital increase: CHF 2,400,000 (in 2022)[195]
Harmful proportion of subsidy	Entire
Regulatory framework	No statutory basis
	Responsibility of the State
	Not regulated under EEA
	Not regulated under Customs Treaty
Political trade-offs	Recreational travel and tourism vs. preserving and promoting biodiversity
Possible solutions	(i) The State contribution to the Bergbahnen Malbun requires individual biodiversity-promoting measures as a form of compensation. (ii) No expansion or new construction of tourism infrastructure.

[191] The annual structural deficit of the Bergbahnen Malbun, which will persist even after the restructuring, is to be covered in the long term by annual State contributions of around CHF 650,000 and levies from holiday apartment owners amounting to around CHF 250,000 (tourism financing), see Accountability Report 2022.
[192] De Jong, C. (2012), Zum Management der Biodiversität von Tourismus- und Wintersportgebieten in einer Ära des globalen Wandels, Jahrbuch des Vereins zum Schutz der Bergwelt (76./77. Jahrgang 2011, p. 131–168).
[193] Gubler et al. (2020).
[194] Government of the Principality of Liechtenstein (2023), Accountability Report 2022.
[195] Government of the Principality of Liechtenstein (2023), Accountability Report 2022.

D.2.2 Promotion of Liechtenstein as a tourism destination

D.2.2.1 **State contribution to Liechtenstein Marketing**	
Subsidy	Through a budgeted contribution to Liechtenstein Marketing, an independent establishment under public law, Liechtenstein promotes tourism, major events, and the country as a business location.[196]
Impact on biodiversity	For the impact of tourism on biodiversity, see introductory chapter D.1.
Degree of harmful impact on biodiversity	Medium
Subsidy type	On-budget
Level of subsidy	CHF 2,600,000 (total state contribution to Liechtenstein Marketing in 2022)[197] Liechtenstein Marketing promotes tourism services (accommodation, catering, transport, museums, guided tour costs, services from third-party providers), major events, and supports cooperation arrangements and memberships (cooperation agreement with Switzerland Tourism, memberships with Eastern Switzerland Tourism and International Lake Constance Tourism).[198]
Harmful proportion of subsidy	Partial
Regulatory framework	Location Promotion Act (SFG)[199]
	Responsibility of the State
	Not regulated under EEA
	Not regulated under Customs Treaty
Political trade-offs	Recreational travel and tourism vs. preserving and promoting biodiversity
Possible solutions	(i) Liechtenstein makes its financial support for Liechtenstein Marketing conditional on the renunciation of marketing activities in long-haul markets, as Lucerne, for example, has required of Luzern Tourismus AG.[200] (ii) Criteria for the consideration of biodiversity are established for major events, and compliance with these is made mandatory for receiving contributions. (iii) The owner's strategy is adjusted accordingly.

[196] For further promotion of the business location, see the chapter on Settlement development.
[197] Government of the Principality of Liechtenstein (2023), Accountability Report 2022.
[198] Liechtenstein Marketing 2022, Business Report, p. 47: https://www.liechtenstein-marketing.li/application/files/3816/8362/5999/Geschaeftsbericht_2022.pdf.
[199] Law of 20 October 2011 on the Promotion of the Economic and Tourism Development of Liechtenstein as a Business Location (Location Promotion Act; SFG), LGBl. 2011 No. 544.
[200] Luzerner Zeitung, 27 September 2022: https://www.luzernerzeitung.ch/zentralschweiz/stadt-region-luzern/leistungsvereinbarung-2023-2027-luzern-tourismus-darf-geld-der-stadt-nicht-fuer-werbeaktivitaeten-in-fernmaerkten-verwenden-ld.2344954.

D.2.2.2 **Use of the visitor's tax for tourism services**	
Subsidy	The visitor's taxes accrue to Liechtenstein Marketing. Using these taxes for tourism services promotes tourism, which in turn potentially generates more visitor's taxes; this creates a positive feedback loop, which is classified here as a false incentive.
Impact on biodiversity	For the impact of tourism on biodiversity, see introductory chapter D.1.
Degree of harmful impact on biodiversity	Low
Subsidy type	On-budget
Level of subsidy	CHF 563,000[201]
Harmful proportion of subsidy	Entire
Regulatory framework	SFG
	Responsibility of the State
	Not regulated under EEA
	Not regulated under Customs Treaty
Political trade-offs	Recreational travel and tourism vs. preserving and promoting biodiversity
Possible solutions	The revenue from visitor's taxes, or at least a portion of it, is used for measures to promote biodiversity in tourist areas. As tourism benefits significantly from intact natural assets, this ultimately benefits the tourism sector.

[201] Government of the Principality of Liechtenstein (2023), Accountability Report 2022.

E Transport

E.1. Introduction

Transport places a burden on biodiversity, with the type and intensity of the impact varying by mode of transport. In Liechtenstein, road traffic is the dominant factor, as rail transport is not extensively developed. The entire road network in Liechtenstein, including municipal roads, comprises 420 km of paved and 425 km of unpaved roads. Compared to neighbouring countries, Liechtenstein has a very high motorisation rate (vehicles per inhabitant), with 780 passenger cars per 1,000 inhabitants.[202] The motorisation rate increased by 32.3% between 1990 and 2020. During the same period, the share of environmentally friendly passenger transport (public transport, non-motorised transport) declined. In 1990, 33.9% of the working population used no motorised means of transport; by 2020, this had dropped to 24.7%.[203] The steady rise in recreational mobility, along with commuting and cross-border traffic, is driving a continuous increase in motorised private transport.[204] Accordingly, Liechtenstein is planning further expansion, renovation, and maintenance measures for its transport infrastructure.[205]

[202] Office of Statistics (2024), Liechtenstein in Figures 2024: https://www.statistikportal.li/statistikportal/publications/103-liechtenstein-in-figures/2024/01/1/103.2024.01.1_01_liechtenstein-in-figures-2024.pdf.
[203] Hilti Family Foundation Liechtenstein (2023), Entwicklung von Biodiversität und Landschaft in Liechtenstein: https://static1.squarespace.com/static/60058441dfad4a364920430b/t/6488227a1682fe5759ff9310/1686643329031/Biodiversit%C3%A4tsmonitoring+LI+Modellr%C3%A4ume_Massnahmen+Feb23.pdf.
[204] Government of the Principality of Liechtenstein (2020), Liechtenstein Spatial Concept: https://www.regierung.li/files/attachments/raumkonzept-liechtenstein-2020-638354102112186129.pdf.
[205] Report and Motion No. 114/2022 on the Construction and Renovation of Transport Infrastructure in Liechtenstein (Transport Infrastructure Report) 2023): https://archiv.llv.li/files/srk/bua_114_2022_verkehrsinfrastrukturbericht-2023.pdf.

E.2. Subsidies with a harmful impact on biodiversity

E.2.1 Road traffic

E.2.1.1 **Road improvements and new road construction**	
Subsidy	Investments in the complete renewal of existing road infrastructure and in new construction are financed by the State.
Impact on biodiversity	Complete renewals of existing infrastructure cause little to no harm to biodiversity. The situation is different with the expansion and new construction of road infrastructure, which harms biodiversity through soil sealing, fragmentation, and loss of habitats.
Degree of harmful impact on biodiversity	High (expansion and new construction) Low (complete renewal)
Subsidy type	On-budget
Level of subsidy	CHF 10,496,096 (in 2022)[206]
Harmful proportion of subsidy	Partial
Regulatory framework	Article 20(2) of the Constitution
	Responsibility of the State for national roads
	Not regulated under EEA
	Not regulated under Customs Treaty
Political trade-offs	Availability of road infrastructure and motorised transport vs. preserving and promoting biodiversity.
Possible solutions	(i) Liechtenstein no longer finances the new construction or capacity expansion of national roads for motorised private transport. Its transport policy focuses on shifting motorised traffic to biodiversity-friendly forms of mobility (active mobility, public transport) and includes traffic management measures to support this shift. (ii) Road maintenance also includes measures to promote biodiversity (ecologically valuable, interconnected road verges) and the creation of substitute habitats and landscape linkages such as wildlife bridges, small animal passages, or other connectivity structures that mitigate the barrier effect (see also proposals under E.2.1.2 Land acquisition for civil engineering projects).

[206] Government of the Principality of Liechtenstein (2023), Accountability Report 2022.

E.2.1.2 **Land acquisition for civil engineering projects**		
Subsidy		Liechtenstein acquires land for the planned expansion of transport infrastructure.
Impact on biodiversity		Contributes to the effects of road infrastructure described in E.2.1.1. (If the acquired land is already in use as road infrastructure, there is no additional harmful impact, as the sealing is already in place. The situation is different if the land acquired was previously undeveloped.)
Degree of harmful impact on biodiversity		High (if the area was previously undeveloped)
Subsidy type		On-budget
Level of subsidy		Land acquisition for civil engineering projects; CHF 942,102[207]
Harmful proportion of subsidy		Partial
Regulatory framework		Article 20(2) of the Constitution
		Responsibility of the State
		Not regulated under EEA
		Not regulated under Customs Treaty
Political trade-offs		Road infrastructure vs. preserving and promoting biodiversity
Possible solutions	(i)	Liechtenstein does not support any further expansion of infrastructure for motorised road traffic.
	(ii)	Liechtenstein examines a cap on road surface area – newly built roads are to be offset by the deconstruction of existing roads.

[207] Government of the Principality of Liechtenstein (2023), Accountability Report 2022: https://www.llv.li/serviceportal2/amtsstellen/stabstelle-regierungskanzlei/rechenschaftsbericht_2022-web.pdf.

E.2.1.3 **Road maintenance**	
Subsidy	The structural maintenance of national roads is financed through the State budget. This includes value-preserving measures for the ongoing renovation of the roads.
Impact on biodiversity	Optimisation of road traffic, such as improved road layout, signage, and similar measures, has a traffic-promoting effect.
Degree of harmful impact on biodiversity	Low
Subsidy type	On-budget
Level of subsidy	CHF 2,849,857[208]
Harmful proportion of subsidy	Entire
Regulatory framework	Article 20(2) of the Constitution
	Responsibility of the State
	Not regulated under EEA
	Not regulated under Customs Treaty
Political trade-offs	Maintenance of existing transport infrastructure and, in some cases, safety vs. preserving and promoting biodiversity
Possible solutions	See solutions above under E.2.1.1 Road improvements and new road construction

[208] Government of the Principality of Liechtenstein (2023), Accountability Report 2022.

E.2.1.4 **Winter road maintenance**	
Subsidy	Liechtenstein finances winter road maintenance. In 2023, 554 tonnes of salt were spread.
Impact on biodiversity	Winter road maintenance is carried out by spreading salt and grit. The salt largely seeps into the surrounding habitats and harms biodiversity.[209]
Degree of harmful impact on biodiversity	Low
Subsidy type	On-budget
Level of subsidy	CHF 111,785 (in 2022)[210]
Harmful proportion of subsidy	Depending on implementation
Regulatory framework	Article 20(2) of the Constitution
	Responsibility of the State
	Not regulated under EEA
	Not regulated under Customs Treaty
Political trade-offs	Road traffic and road safety vs. preserving and promoting biodiversity
Possible solutions	Where possible, the use of road salt is limited. Accompanying measures such as speed reduction and frequent, rapid clearing are examined to mitigate the risks that may result from reduced salt application.

[209] NABU, Streusalz, https://www.nabu.de/umwelt-und-ressourcen/oekologisch-leben/bauen-und-wohnen/01892.html
[210] Information provided by the Civil Engineering and Geoinformation Office on 29 August 2024.

E.2.1.5 **Exemption from the motor vehicle tax**	
Subsidy	The following vehicles are legally exempt from the motor vehicle tax: vehicles belonging to the State, the Hereditary Prince, the Reigning Prince, vehicles intended exclusively or primarily for the fire service, rescue service or as ambulances, vehicles that do not require a registration certificate or licence plates under the Motor Vehicle Tax Act, solar and electric vehicles, hybrid vehicles, and vehicles powered by natural gas. The exemption constitutes a subsidy for the exempt vehicles and their owners, making road traffic cheaper for them.
Impact on biodiversity	Motorised road traffic leads to various pressures and forms of pollution that are harmful to biodiversity: • CO_2 emissions exacerbate the climate crisis, which in turn accelerates biodiversity loss. • Tyre abrasion, which accounts for around 90% of microparticle pollution in the environment and is also contaminated with heavy metals,[211,212] represents a distinct form of pollution. • Street lighting, which negatively affects the survival and reproduction of nocturnal organisms.[213,214] • Traffic noise, which impairs animals' communication and orientation, leading to an additional barrier effect or reduction of habitats due to the avoidance behaviour of many species. • Traffic mortality, which poses a serious threat to the conservation of population sizes, especially for rare species.[215] Due to its better energy and resource efficiency per passenger kilometre, public transport causes less harm to biodiversity compared to motorised private transport.[216] Substituting motorised private transport with public transport reduces pressure on biodiversity.
Degree of harmful impact on biodiversity	Low
Subsidy type	Off-budget
Level of subsidy	Not quantified (motor vehicle tax revenue is CHF 15.1 million (2022)[217])
Harmful proportion of subsidy	Entire
Regulatory framework	Article 4(a)-(e) of the Motor Vehicle Tax Act[218]

[211] Dimopoulus et al. 2023, p. 5.
[212] Hilti Family Foundation Liechtenstein (2023), Entwicklung von Biodiversität und Landschaft in Liechtenstein: https://static1.squarespace.com/static/60058441dfad4a364920430b/t/6488227a1682fe5759ff9310/1686643329031/Biodiversit%C3%A4tsmonitoring+LI+Modellr%C3%A4ume_Massnahmen+Feb23.pdf.
[213] Giavi, S., Fontaine, C., & Knop, E. (2021). Impact of artificial light at night on diurnal plant-pollinator interactions. Nature Communications. 16 March 2021. https://doi.org/10.1038/s41467-021-22011-8.
[214] Hilti Family Foundation Liechtenstein (2023), Entwicklung von Biodiversität und Landschaft in Liechtenstein: https://static1.squarespace.com/static/60058441dfad4a364920430b/t/6488227a1682fe5759ff9310/1686643329031/Biodiversit%C3%A4tsmonitoring+LI+Modellr%C3%A4ume_Massnahmen+Feb23.pdf.
[215] Hilti Family Foundation Liechtenstein (2023), Entwicklung von Biodiversität und Landschaft in Liechtenstein: https://static1.squarespace.com/static/60058441dfad4a364920430b/t/6488227a1682fe5759ff9310/1686643329031/Biodiversit%C3%A4tsmonitoring+LI+Modellr%C3%A4ume_Massnahmen+Feb23.pdf.
[216] Federal Office for Spatial Development (2019), Externe Effekte des Verkehrs 2015, Aktualisierung der Berechnungen von Umwelt-, Unfall- und Gesundheitseffekten des Strassen-, Schienen-, Luft- und Schiffsverkehrs 2010 bis 2015: https://www.are.admin.ch/dam/are/de/dokumente/verkehr/publikationen/externe-effekte-des-verkehrs-2015-schlussbericht.pdf.download.pdf/20180629%20Externe_Effekte_Verkehr_Aktualisierung_2015_Schlussbericht.pdf.
[217] Government of the Principality of Liechtenstein (2023), Accountability Report 2022.
[218] Law of 14 September 1994 on Motor Vehicle Tax, LGBl. 1994 No. 078.

	Responsibility of the State
	Not regulated under EEA
	Not regulated under Customs Treaty
Political trade-offs	Subsidised ownership of certain vehicles vs. preserving and promoting biodiversity
Possible solutions	The exemption from the motor vehicle tax is abolished for all vehicles (including electric vehicles) that do not serve a charitable purpose, and a mileage-based tax is introduced.[219]

[219] Report and Motion No. 95/2022, Postulate response on the transformation of the motor vehicle tax into a road pricing system: https://bua.regierung.li/BuA/default.aspx?nr=95&year=2022&filter1=Subsidy&backurl=modus%3dsearch%26filter1%3dvt%26filter2%3dSubsidy&sh=259061110).

E.2.1.6 **Subsidised parking fees**	
Subsidy	"Parking space management is a powerful lever for influencing motorised private transport, particularly in the context of recreational and shopping trips."[220] The regulation of parking fees is the responsibility of the municipalities. As a result, fees vary from one municipality to another. In some areas, not all public parking spaces are subject to charges; in many places, the first two hours are free. Parking fees in public car parks are lower than those in private parking garages, and the former barely cover the actual costs.
Impact on biodiversity	The provision of parking spaces promotes motorised private transport, which in turn leads to various pressures and forms of pollution that are harmful to biodiversity (see above).
Degree of harmful impact on biodiversity	Medium
Subsidy type	Off-budget
Level of subsidy	Not quantified
Harmful proportion of subsidy	Entire
Regulatory framework	No explicit basis at national level
	Responsibility of the municipalities
	Not regulated under EEA
	Not regulated under Customs Treaty
Political trade-offs	Privileging motorised private transport vs. preserving and promoting biodiversity
Possible solutions	Liechtenstein works towards a cost-covering structure for parking fees and may align them with the fees charged by private providers.

[220] Ecoplan, EBP (2014), Fehlanreize im Mobilitätsbereich aus Sicht des Energieverbrauchs, External final report commissioned by the Swiss Federal Office of Energy, p. 62.

E.2.1.7 **Design and exemptions of the heavy goods vehicle charge (HGVC)**	
Subsidy	Vehicles under Article 5(1) of the Heavy Vehicle Charge Act (SVAG) [221] are exempt from the heavy goods vehicle charge(e.g. agricultural vehicles, police vehicles, vintage vehicles). In addition, a flat-rate HGVC applies to passenger and goods transport, with a maximum amount of CHF 5,000 as stipulated in Article 6 SVAG. As a result, the performance-based principle is not consistently applied. The fee structure is also capped (Article 11(1) SVAG).
Impact on biodiversity	Exemptions and lump sums favour heavy traffic, which – like other forms of transport, and possibly to an even greater extent – harms biodiversity (see above).
Degree of harmful impact on biodiversity	Low
Subsidy type	Off-budget
Level of subsidy	Not quantified
Harmful proportion of subsidy	Entire
Regulatory framework	SVAG
	Responsibility of the State
	Not regulated under EEA
	(Treaty of 11 April 2000 between Liechtenstein and Switzerland on the Heavy Goods Vehicle Charge) including associated agreement[222]
Political trade-offs	Reduction of travel costs for heavy vehicles vs. biodiversity
Possible solutions	Liechtenstein is not autonomous in this matter. Within the scope of its possibilities, Liechtenstein works to ensure that (i) the exemption of vehicles from the heavy goods vehicle charge is lifted (ii) and the flat-rate levy and the limitation to a maximum amount are abolished

[221] Law of 25 October 2000 on the Heavy Goods Vehicle Charge (Heavy Vehicle Charge Act; SVAG), LGBl. 2000 No. 273.
[222] Treaty between the Principality of Liechtenstein and the Swiss Confederation on the Heavy Goods Vehicle Charge in the Principality of Liechtenstein, entry into force: 1 January 2001, LGBl. 2000 No. 271.

E.2.1.8 **Refund of the mineral oil tax**	
Subsidy	The mineral oil tax is refunded for licensed transport companies, snow groomers, and vehicles used in agriculture and forestry, natural stone extraction, and commercial fishing (Article 18(1ter)-(2) MinOTA).
Impact on biodiversity	The consumption of fossil fuels negatively affects the climate and, in turn, biodiversity. Consumption-based incentives such as tax refunds on fossil fuels can encourage the use of fossil-fuelled vehicles and machinery, weakening economic incentives to switch to alternative-powered options where available, with the aim of reducing greenhouse gas emissions and air pollutants. In agriculture, such rebates may also incentivise increased use of machinery, which further harms biodiversity.[223]
Degree of harmful impact on biodiversity	Low
Subsidy type	Off-budget
Level of subsidy	Not quantified
Harmful proportion of subsidy	Entire
Regulatory framework	Swiss Mineral Oil Tax Act[224,225]
	Responsibility of the State
	Not regulated under EEA
	Regulated under Customs Treaty
Political trade-offs	Privileging individual sectors and occupational groups vs. preserving and promoting biodiversity
Possible solutions	Due to the Customs Treaty, there appears to be no scope for an independent solution by Liechtenstein. Liechtenstein monitors developments in Switzerland and, should an opportunity arise, works towards exempting the provisions on tax refunds for selected sectors from the applicability of the Customs Treaty and advocates for the abolition of the mineral oil tax refund.

[223] State Secretariat for Economic Affairs (SECO) (2023), Revision der Rückerstattungen der Mineralölsteuer, Regulierungsfolgenabschätzung: https://www.bing.com/ck/a?!&&p=1c6746b17f78f2ad87437cfbdd879a722da0938650a3f5f3c64f92dc9279a84eJmltdHM9MTcyOTU1NTIwMA&ptn=3&ver=2&hsh=4&fclid=2f9c5f16-f770-696a-3aec-4b9ef62b6892&psq=SECO+Revision+der+R%c3%bcckerstattungen+der+Mineral%c3%b6lsteuer+Regulierungsfolgenabsch%c3%a4tzung&u=a1aHR0cHM6Ly93d3cuc2Vjby5hZG1pbi5jaC9kYW0vc2Vjby9kZS9kb2t1bWVudGUvQXVzc2Vud2lydHNjaGFmdC9JbnRlcm5hdGlvbmFsZSUyME9yZ2FuaXNhdGlvbmVuL1dUTy9SRkElMjBNaW5lcmFsJUMzJUI2bHN0ZXVlci1SJUMzJUJDY2tlcnN0YXR0dW5nZW4lMjBTY2hsdXNzYmVyaWNodCUyMGZpbmFsLnBkZi5kb3dubG9hZC5wZGYvUkZBJTlwTWluZXJhbCVDMyVCNmxzdGV1ZXItUiVDMyVCQ2NrZXJzdGF0dHVuZ2VuJTlwU2NobHVzc2JlcmljaHQlMjBmaW5hbC5wZGY&ntb=1.

[224] Mineral Oil Tax Act (MinOTA) of 21 July 1996, SR 641.61

[225] FDF Ordinance on Tax Concessions for Mineral Oil Tax of 22 November 2013, SR 641.612.

E.2.1.9 **Lack of a CO_2 levy on fuels**	
Subsidy	While a CO_2 levy is charged on combustibles, this is not the case for fuels. This can be seen as a subsidy for motorised transport. However, fuel imports are subject to a compensation obligation under Article 34 of the CO_2 Ordinance (with the exception of fuels exempt from mineral oil tax). The compensation rate is 23% from 2024, and according to Article 10 of the CO_2 Act, the compensation surcharge on fossil fuels may not exceed an average of 5 centimes per litre over the years 2021 to 2030.
Impact on biodiversity	The exemption of fuels from the CO_2 tax lowers the cost of CO_2 emissions and provides no incentive to reduce fuel consumption and associated CO_2 emissions. CO_2 emissions accelerate climate change, a significant driver of biodiversity loss.
Degree of harmful impact on biodiversity	Medium
Subsidy type	On-budget
Level of subsidy	The subsidy arises from the difference between the compensation payments made and the CO_2 levy. The amount of the subsidy could not be quantified.
Harmful proportion of subsidy	Entire
Regulatory framework	CO2 Act[226] CO2 Ordinance[227] LGBl. 2010 No. 012[228] LGBl. 2010 No. 013[229]
	Responsibility of the State
	Not regulated under EEA
	Not regulated under Customs Treaty, but agreement LGBl (see above)
Political trade-offs	Privileging fuels and combustibles through reduced levies vs. preserving and promoting biodiversity
Possible solutions	(i) Liechtenstein works within the scope of its possibilities to introduce a levy on fuels (if fixed thresholds are exceeded for new vehicle registrations), as proposed in the currently suspended Amendments to the Motor Vehicle Tax Act.[230,231] (ii) Liechtenstein introduces a CO_2 levy on fuels. (iii) Liechtenstein considers introducing minimum share of domestic offsetting of fuel emissions.

[226] Law of 6 September 2013 on the Reduction of CO_2 Emissions (CO_2 Act), LGBl. 2013 No. 358.
[227] Ordinance of 29 October 2013 on the Reduction of CO_2 Emissions (CO_2 Ordinance), LGBl. 2013 No. 359.
[228] Treaty between the Principality of Liechtenstein and the Swiss Confederation on Environmental Levies in the Principality of Liechtenstein, LGBl. 2010 No. 012
[229] Agreement on the Treaty between the Principality of Liechtenstein and the Swiss Confederation on Environmental Levies in the Principality of Liechtenstein, LGBl. 2010 No. 013.
[230] Ministry of Infrastructure and Justice (2023), Consultation report concerning the amendment of the Law on the Promotion of Energy Efficiency and Renewable Energy Sources (Energy Efficiency Act; EEG): https://www.llv.li/serviceportal2/amtsstellen/stabstelle-regierungskanzlei/vnb_abaenderung-vnb-energieeffizienzgesetz-eeg.pdf.
[231] Government of the Principality of Liechtenstein (2024), Press release of 12 July 2024, Abänderung Motorfahrzeugsteuergesetz – Sistierung der Arbeiten. Medienmitteilungen - Regierung.li: https://www.regierung.li/medienportal-medium/16182/232275/0/medienmitteilung

E.2.1.10 **Partial subsidy for LIEmobil**	
Subsidy	The independent transport company LIECHTENSTEINmobil (LIEmobil) is financed through fare revenue and an annual State contribution. The cost recovery rate varies between 1.7% and 99.2% depending on the route. For several years, LIEmobil's self-financing ratio has exceeded the 30% threshold set in the service agreement with the Government.[232]
Impact on biodiversity	Public transport also has a negative impact on biodiversity. However, compared to motorised private transport, this impact is significantly lower due to a better energy and resource balance per passenger kilometre. Replacing motorised private transport with public transport therefore reduces pressure on biodiversity.
Degree of harmful impact on biodiversity	Unclear
Subsidy type	On-budget
Level of subsidy	State contribution: CHF 12,424,070 (in 2022)[233]
Harmful proportion of subsidy	Partial
Regulatory framework	Law on the LIECHTENSTEINmobil Transport Company (VLMG)[234]
	Responsibility of the State
	Not regulated under EEA
	Not regulated under Customs Treaty
Political trade-offs	Promotion of public transport and modal shift from motorised private transport) vs. preserving and promoting biodiversity; intra-ecological trade-off: positive impact from substituting motorised private transport with public transport; negative impact of public transport on biodiversity.
Possible solutions	When expanding transport infrastructure, Liechtenstein prioritises the potential for shifting from motorised private transport to public transport (e.g. dedicated bus lanes, bus priority) and to active mobility (footpaths, cycle paths, etc.).

[232] The self-financing ratio amounted to 32.4% in 2022 (Liechtensteinmobil, Business Report 2022, p. 42: https://liemobil.li/static/Geschaftsbericht-2022-5ea76d7ba6be8e0684a64a12b4fc9910.pdf).
[233] Liechtensteinmobil, Business Report 2022, p. 42: https://liemobil.li/static/Geschaftsbericht-2022-5ea76d7ba6be8e0684a64a12b4fc9910.pdf.
[234] Law of 29 July 2011 on the LIECHTENSTEINmobil Transport Company (VLMG), LGBl. 2011 No. 345).

E.2.2 Rail transport

A railway line runs through Liechtenstein, spanning 9 km and comprising three stops.[235] LIEmobil is responsible for commissioning the services. The regional train services are currently operated by the Austrian Federal Railways (ÖBB), which also owns the railway infrastructure in Liechtenstein and is responsible for its maintenance. In 2022, the services provided by ÖBB were remunerated by LIEmobil with CHF 246,320.[236] This payment constitutes a subsidy for public rail transport.

E.2.2.1 **Compensation for rail transport services**	
Subsidy	The regional train services operated by ÖBB on the railway line between Feldkirch and Buchs are co-financed by LIEmobil.
Impact on biodiversity	The impact of rail transport on biodiversity is lower than that of motorised private transport. However, since environmental impacts remain, there is an intra-ecological trade-off. Railway lines also fragment habitats, and traffic causes harm – especially to animals – through light and noise emissions. Rail abrasion contaminates the soil near the tracks with heavy metals,[237] and depending on the energy source used, energy generation can cause additional environmental damage.
Degree of harmful impact on biodiversity	Unclear
Subsidy type	On-budget
Level of subsidy	Contribution of LIEmobil to ÖBB: CHF 246,320[238]
Harmful proportion of subsidy	Partial
Regulatory framework	Railway Act
	Responsibility of the State
	Not regulated under EEA
	Not regulated under Customs Treaty
Political trade-offs	Privileging public passenger transport vs. preserving and promoting biodiversity
Possible solutions	Together with ÖBB, Liechtenstein works to improve the maintenance of railway lines and embankments with regard to biodiversity (creating new habitats and addressing the fragmenting effect of the railway).

[235] Office of Statistics (2024), Liechtenstein in Figures 2024, p. 38: https://www.statistikportal.li/statistikportal/publications/103-liechtenstein-in-figures/2024/01/1/103.2024.01.1_01_liechtenstein-in-figures-2024.pdf.
[236] Liechtensteinmobil, Business Report 2022: https://liemobil.li/static/Geschaftsbericht-2022-5ea76d7ba6be8e0684a64a12b4fc9910.pdf.
[237] For information on abrasion and heavy metals, see the Canton of Zurich Soil Protection Department. https://www.zh.ch/content/dam/zhweb/bilder-dokumente/themen/umwelt-tiere/boden/bodendauer%C3%BCberwachung/bahnlinien_factsheet.pdf.
[238] Liechtensteinmobil, Business Report 2022, p. 45: https://liemobil.li/static/Geschaftsbericht-2022-5ea76d7ba6be8e0684a64a12b4fc9910.pdf.

E.2.3 Aviation

The heliport in Balzers is operated and financed privately by Heliport Balzers AG. No subsidies are provided.

F Forests

F.1. Introduction

With an area of 7,312 hectares, forests in Liechtenstein cover 45.5% of the national territory.[239] The majority is publicly owned: 38% of Liechtenstein's forest belongs to the municipalities, 37% to citizens' cooperatives, 18% to alpine cooperatives, and 7% to private individuals. Until the 1950s, despite an existing ban on large-scale clear-cutting, the forest landscape was shaped by deforestation and overuse. In the 1990s, forests were recognised as habitats worthy of protection under the Forest Act[240] and granted stronger protection. The condition of the forest area is considered positive, with the biotope value[241] showing a positive trend. The natural quality of the forest has been successfully enhanced in recent years. The Forest Strategy 2030+ aims to further strengthen the diverse functions of the forest to create a resilient ecosystem for both people and nature.[242]

According to the technical report on protection forest designation (2024), 40% of the forest area serves a protective function. These protective functions are categorised by process and sub-process type.[243]

Of the wood felled, 26.3% is used as timber, 1.4% as industrial wood, and 70% as energy wood (data from 2022). Around 2% of the felled wood remains in the forest (excluding windthrow wood).[244] Maintenance of protection forests accounts for the largest share of annual financial expenditure. The ageing trend in these forests poses a long-term risk to their protective function.[245]

[239] National Forest Inventory 2022.
[240] Forest Act (WaldG) of 25 March 1991, LGBI. 1991 No. 042.
[241] The biotope value is an ecological indicator used to assess the quality of habitats.
[242] Government of the Principality of Liechtenstein (2024), Liechtenstein Forest Strategy 2030+: https://www.regierung.li/files/attachments/waldstrategie-2030-.pdf.
[243] Impuls AG, 2024, Schutzwaldausscheidung (SWA) Liechtenstein. Schutzwaldausscheidung Phase 2.1, Vorgehen. Technischer Bericht. Thun https://www.llv.li/serviceportal2/amtsstellen/amt-fuer-umwelt/wald-natur-landschaft/wald-und-holz/dokumentation_schutzwaldausscheidung_phase_2-1_20241108_fvf.pdf.
[244] Government of the Principality of Liechtenstein (2022). Accountability Report 2022, p. 317; on the issue of energy wood in the context of promoting energy efficiency, see chapter on Energy generation and supply.
[245] Government of the Principality of Liechtenstein (2023), Accountability Report 2022.

F.2. Subsidies with a harmful impact on biodiversity

F.2.1 Prevention of wildlife damage

Subsidy	In accordance with Article 49 of the Hunting Act, the State provides financial assistance covering 60% of the costs of wildlife damage prevention. In private and cooperative forests, 40% of the forest owners' share of the costs is covered by the municipality.
Impact on biodiversity	An excessively high density of game threatens natural regeneration, which harms forest biodiversity. According to Article 49 of the Hunting Act, the costs of preventive measures to avoid potential wildlife damage are borne by the State. Without this subsidy, there could be a stronger incentive to reduce game density to a sustainable level, including through the presence of large carnivores.
Degree of harmful impact on biodiversity	Low
Subsidy type	On-budget
Level of subsidy	CHF 184,043 (in 2022)[246]
Harmful proportion of subsidy	Partial
Regulatory framework	Article 49 of the Hunting Act[247] in conjunction with Article 23 WaldG
	Responsibility of the State
	Not regulated under EEA
	Not regulated under Customs Treaty[248]
Political trade-offs	Preventing damage caused by game vs. preserving and promoting biodiversity through and with large carnivores
Possible solutions	In addition to passive wildlife damage prevention through fencing, Liechtenstein also supports active measures by creating ecological corridors, enhancing and restoring habitats, planting browsing shrubs, and facilitating effective hunting through forest thinning.

[246] Government of the Principality of Liechtenstein (2023), Accountability Report 2022.
[247] Hunting Act of 30 January 1962, LGBI. 1962 No. 004.
[248] The Swiss Forest Act is applicable in certain areas, but not in matters relating to the prevention of wildlife damage. See the Promulgation of 9 April 2024 on the Swiss legal provisions applicable in the Principality of Liechtenstein under the Customs Treaty (Annexes I and II).

F.2.2 Financial assistance for forest-related measures in mountain rehabilitation areas	
Subsidy	Under Article 41(2) of the Forest Act (WaldG), the state provides financial assistance covering 85% of the costs for the construction, acquisition, and repair of access infrastructure within the mountain area restoration zone, insofar as these are necessary for alpine and forest management.
Impact on biodiversity	Developments can have both positive and negative effects on biodiversity. They fragment habitats and hinder the exchange between populations, increase accessibility and thus attract recreational visitors – leading to additional disturbances – and can facilitate the spread of invasive species. However, roadsides can also serve as habitats for native species.
Degree of harmful impact on biodiversity	Medium
Subsidy type	On-budget
Level of subsidy	Total expenditure for mountain rehabilitation area development in 2022 amounted to CHF 54,612, with the national share totalling CHF 46,420. Expenditure on forestry projects in the mountain region amounted to CHF 170,586.[249]
Harmful proportion of subsidy	Partial
Regulatory framework	Article 41(2) WaldG
	Responsibility of the State
	Not regulated under EEA
	Not regulated under Customs Treaty
Political trade-offs	Developing mountain areas vs. preserving and promoting biodiversity
Possible solutions	(i) No new developments are subsidised; where possible, alternative methods of timber transport (e.g. cable cranes) are used. (ii) Measures to combat the spread of invasive species continue to be implemented. (iii) Subsequent use by recreational users is prevented, for example through consistent enforcement of driving bans.

[249] Government of the Principality of Liechtenstein (2023), Accountability Report 2022; the contributions to development also served alpine farming and therefore also relate to agriculture (see chapter on Agriculture).

F.2.3 Protection forest maintenance	
Subsidy	Under the Forest Act, Liechtenstein subsidises the maintenance of protection forests to safeguard infrastructure and people from natural hazards. These maintenance measures are financed by the State.
Impact on biodiversity	Protection forest management positively impacts biodiversity in many ways – such as fostering a diverse age structure and creating regeneration gaps – and is often compatible with targeted species conservation programmes. However, due to their primary function of providing protection, protection forests inhibit dynamic gravitational processes. From an ecological perspective, these periodic disturbances are highly valuable as they contribute significantly to species diversity.[250] If the exposed damage potential is very low and the ecological value of the relevant forest areas is high, a cautious and balanced approach to protection forest designation is therefore desirable from a biodiversity perspective. If (dead) wood is removed from protection forests for maintenance purposes, this can interrupt natural succession, which may negatively impact biodiversity. Furthermore, access roads constructed for protection forest maintenance can fragment habitats and may lead to subsequent recreational use (e.g. by tourists, cyclists), increasing disturbance in sensitive areas.
Degree of harmful impact on biodiversity	Low
Subsidy type	On-budget
Level of subsidy	CHF 640,000 (in 2022)[251]
Harmful proportion of subsidy	Depending on implementation
Regulatory framework	Articles 38 and 39 WaldG
	Responsibility of the State
	Not regulated under EEA
	Not regulated under Customs Treaty
Political trade-offs	Protecting people and infrastructure vs. preserving and promoting biodiversity
Possible solutions	(i) New developments are avoided where possible. (ii) Species promotion programmes are combined with the protection function, provided that the latter is not compromised. (iii) In protection forests with a general protection function,[252] Liechtenstein examines whether declaring large forest areas as protection forests is necessary and whether more gravitational processes can be permitted without endangering property or people.

[250] Gubler et al. (2020).
[251] Government of the Principality of Liechtenstein (2023), Accountability Report 2022, p. 319.
[252] Schutzwaldausscheidung (SWA) Liechtenstein (2024), Technischer Bericht: https://www.llv.li/serviceportal2/amtsstellen/amt-fuer-umwelt/wald-natur-landschaft/wald-und-holz/dokumentation_schutzwaldausscheidung_phase_2-1_20241108_fvf.pdf.

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