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Federal Department of the Environment,
Transport, Energy and Communications DETEC

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Abteilung Internationales

Switzerland's Sixth National Report to the United Nations Convention on Biological Diversity

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Contents

061.6-02.3-01-05-00002/00003/R514-0040

1 Section I. Information on the targets pursued at the national level

1.1 Use biodiversity sustainably

National target: Use biodiversity sustainably, Strategic Goal 1
Rationale for the National Target:
A wide variety of sectors have a significant influence on biodiversity and also benefit from numerous ecosystem services. Hence the use, conservation and promotion of biodiversity must be optimally coordinated. This cannot be achieved through nature conservation measures alone. To maintain the ecosystem services, the economic and political sectors must recognise the importance of biodiversity and take it into account in their actions and decisions. Fields of action have been described within several sectors (forestry, agriculture, hunting and fishing, tourism, sport and leisure, transport, renewable energies, sites, buildings and facilities in federal ownership, production services/trade and consumption). Most sectors possess specific environmental objectives, which are derived from existing legislation. Spatial planning with its coordination function assumes a particularly important role.

Goal of the Swiss biodiversity Strategy:
By 2020, the use of natural resources and interventions involving them are sustainable so that the conservation of ecosystems and their services as well as of species and their genetic diversity is ensured.

The Swiss Biodiversity Strategy Strategic Goal 1 is directly relevant to the Aichi Target 4, because it aims at establishing and implementing sustainable production and consumption practices across the several above-mentioned sectors of activity. It is also relevant to the Aichi Target 7, because it directly addresses the sustainability of forestry and agriculture practices.

Level of application: National/Federal

Main related Aichi biodiversity Targets: 4, 7
Other related Aichi Targets:

Other relevant information:
The measures of the Action Plan 1.3, 2.2, 2.3, 2.6, 3.2, 3.3, 3.5 are central to the Strategic Goal 1. The measures 1.1, 1.2, 1.4, 2.1, 2.4, 2.5, 2.7, 3.1, 3.4, 3.6, 5.1, 5.2, 5.3, 5.5, 5.6, 5.8 represent a further contribution towards the goal.
Several strategies and programs that include sustainable use of biodiversity are implemented at the national level:
Swiss Landscape Concept (currently under revision)
Landscape 2020
Forest policy 2020
Agricultural policy 2014-2017
Action plan Green Economy
Sustainable development strategy and its action plan

Relevant links: Swiss Biodiversity Strategy and Action Plan
https://www.bafu.admin.ch/bafu/en/home/topics/biodiversity/info-specialists/massnahmen-zur-erhaltung-und-foerderung-der-biodiversitaet/strategie-biodiversitaet-schweiz-und-aktionsplan.html
Landscape 2020
https://www.bafu.admin.ch/bafu/en/home/topics/landscape/publications-studies/publications/landscape-2020-guiding-principles.html
Forest policy 2020
https://www.bafu.admin.ch/bafu/en/home/topics/forest/publications-studies/publications/forest-policy-2020.html
Agricultural policy 2014-2017
https://www.blw.admin.ch/blw/fr/home/politik/agrarpolitik/ap-14-17.html

Action plan Green Economy
https://www.bafu.admin.ch/bafu/en/home/topics/economy-consumption/info-specialists/green-economy/green-economy-action-plan--priority-areas.html
Sustainable development strategy and its action plan
https://www.are.admin.ch/are/en/home/sustainable-development/strategy-and-planning/sustainable-development-strategy-2016-2019.html

1.2 Develop ecological infrastructure

National target: Develop ecological infrastructure, Strategic Goal 2
Rationale for the National Target:
Effectively conserved, interconnected and functioning habitats constitute a fundamental prerequisite for a biodiversity that is rich and has the capacity to react to change (e.g. climate change). Existing protected areas must be extended and improved in qualitative terms. Ecological connection areas shall ensure the passability between the protected areas.

Goal of the Swiss biodiversity Strategy:
By 2020, an ecological infrastructure consisting of protected and connected areas is developed. The state of threatened habitats is improved

The Swiss Biodiversity Strategy Strategic Goal 2 is directly relevant to the Aichi Target 5, because it aims at reducing habitat fragmentation and loss. It is also relevant to the Aichi Target 11, because it aims at increasing the national area that is protected and improving the ecological connection between these areas. Eutrophication and further pollution are amongst the main drivers of habitat destruction in Switzerland. Improving the quality of the protected areas thus implies to tackle those issues in direct relation to the Aichi Target 8. Measures to improve the quality of protected areas as well as the conservation of forests and mires are directly linked to the Aichi Target 15. The Strategic Goal 2 finally aims at conserving the functionality of habitats, which is essential for the safeguarding of ecosystem services as stated in the Aichi target 14.

The Strategic Goal 2 is also essential to fulfil the objectives of the European Emerald Network of the Bern Convention that require the extension of protected areas.

Level of application: National/Federal

Main related Aichi biodiversity Targets: 5, 8, 11, 14, and 15.
Other related Aichi Targets:

Other relevant information:
The measures of the Action Plan 1.1, 1.2, 2.1, 3.1 and 5.1 are central to the Strategic Goal 2. The measures 1.3, 1.4, 2.3, 2.5, 2.7, 3.2, 3.3, 3.4, 3.5, 3.6, 5.2 and 5.8 represent a further contribution towards the goal.

Relevant links: Swiss Biodiversity Strategy and Action Plan
https://www.bafu.admin.ch/bafu/en/home/topics/biodiversity/info-specialists/massnahmen-zur-erhaltung-und-foerderung-der-biodiversitaet/strategie-biodiversitaet-schweiz-und-aktionsplan.html

Relevant files:

1.3 Improve the conservation status of national priority species

National target: Improve the conservation status of national priority species, Strategic Goal 3
Rationale for the National Target:

Individual species or groups of species cannot be promoted sufficiently through habitat protection alone and also need additional specific measures in future to guarantee the survival of their populations. Introduced invasive species can pose a threat to native species and lead to their loss.

Goal of the Swiss biodiversity Strategy: By 2020, the conservation status of the populations of national priority species is improved and their extinction prevented insofar as possible. The spread of invasive alien species with the potential to cause damage is contained.

The Swiss Biodiversity Strategy Strategic Goal 3 is directly relevant to the Aichi Target 12, because it aims at preventing the extinction of native species that are known to be threatened, for which Switzerland has a particular responsibility and whose conservation requires urgent action. It is also relevant to the Aichi Target 9 as it aims at containing the spread and damage of invasive alien species.

Threatened species and invasive alien species are referred in several international treaties. Switzerland has undertaken to cooperate at the international level to conserve wild flora and fauna and combat invasive alien species under the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention, concluded in 1979 and ratified by Switzerland in 1982). In particular, Switzerland has to strictly control the establishment of non-native species.

The Regulation of the European Parliament and of the Council on the prevention and management of the introduction and spread of alien invasive species entered into force on January 1st 2015. The centrepiece of the Regulation is a list of priority species, i.e. alien invasive species considered of concern to the Union as a whole. The list must be established within twelve months of the entry into force of the Regulation. Although they are not legally binding on our country, these provisions are relevant to Switzerland because of its geographical position at the heart of the European continent.

Level of application: National/Federal

Main related Aichi biodiversity Targets: 9, 12
Other related Aichi Targets:

Other relevant information (Please use this field to provide any other relevant information, such as the process of developing and adopting the national target, the stakeholders involved or the strategies and plans in which this national target has been included.):
The Strategic Goal 3 is central to the elaboration of the Swiss Invasive Alien Species strategy that was published in 2016 and the Swiss species conservation plan and action plans for species of national priority.

The measures of the Action Plan 1.4 and 3.4 are central to the Strategic Goal 3. The measures 1.1, 1.2, 1.3, 2.1, 2.3, 2.7, 3.1, 3.3, 3.5, 3.6, 5.1, 5.2 and 5.8 represent a further contribution towards the goal.

Relevant links:
Swiss Biodiversity Strategy and Action Plan
https://www.bafu.admin.ch/bafu/en/home/topics/biodiversity/info-specialists/massnahmen-zur-erhaltung-und-foerderung-der-biodiversitaet/strategie-biodiversitaet-schweiz-und-aktionsplan.html
Swiss Invasive Alien Species strategy
https://www.bafu.admin.ch/dam/bafu/fr/dokumente/biodiversitaet/fachinfo-daten/strategie_der_schweizzuinvasivengebietsfremdenarten.pdf.download.pdf/strategie_de_la_suisserelativeauxespecesexotiquesenvahissantes.pdf
Espèces prioritaires pour la conservation au niveau national
https://www.bafu.admin.ch/dam/bafu/fr/dokumente/biodiversitaet/uv-umwelt-vollzug/liste_der_nationalprioritaerenarten.pdf.download.pdf/liste_des_especesprioritairesauniveaunational.pdf
Plan de conservation des espèces en Suisse
https://www.bafu.admin.ch/dam/bafu/fr/dokumente/biodiversitaet/fachinfo-

daten/konzept_artenfoerderungschweiz.pdf.download.pdf/plan_de_conservationdesespecesensuisse.pdf
Plans d'action pour les espèces prioritaires au niveau national
https://www.bafu.admin.ch/dam/bafu/fr/dokumente/biodiversitaet/fachinfo-daten/aktionsplaene_fuernationalprioritaererarten.pdf.download.pdf/plans_d_action_pourlesespecesprioritairesauniveaunational.pdf

Relevant files:

1.4 Conserve and promote genetic diversity

National target: Conserve and promote genetic diversity, Strategic Goal 4
Rationale for the National Target:
A high level of genetic diversity enables species to adapt better to altered environmental conditions. It is the basis for the survival of species and maintenance of ecosystem services. It is also a source of genetic resources for agriculture and forestry research and industry. As for animal genetic resources, a concept has been developed to conserve agricultural livestock. The Confederation supports and promotes various measures and projects to conserve and sustainably use genetic diversity in the forest, such as the implementation of near-natural forestry with natural regeneration, the conservation of locally adapted populations and their potential adaptability in forests of particular genetic interest, or the use of locally adapted reproductive material (seeds, seedlings) for the artificial regeneration of populations. As for microorganisms, the Confederation contributes to the development of a national collection of microorganisms.

Goal of the Swiss biodiversity Strategy:
By 2020, genetic impoverishment is decelerated and, if possible, halted. The conservation and sustainable use of genetic resources, including that of livestock and crops, is ensured.

The Swiss Biodiversity Strategy Strategic Goal 4 is directly relevant to the Aichi Target 13, because it asks for the continuation and further development of the conservation and sustainable use of genetic diversity. It is also relevant to the Aichi Target 16, because it requires the ratification of the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization.

Level of application: National/Federal

Main related Aichi biodiversity Targets: 13, 16
Other related Aichi Targets:

Other relevant information:
The genetic diversity of wild species is promoted through species conservation measures and its protection is one of the central tenet of the national plan for species conservation. The measures aiming at building a functioning ecological infrastructure will also indirectly promote the genetic diversity of wild species by enabling genetic exchange between populations. The Confederation is committed to protecting and promoting genetic diversity in crop plants by implementing the "National Action Plan for the Conservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture" (NAP-PGREL) through the financial support and the regulation of the Federal ordonnance on conservation and sustainable use of genetic resources for food and agriculture (PGRELV). The FOEN also supports the "Swiss Barcode of Life" (SwissBOL) network, whose goal is to record Switzerland's biodiversity through DNA barcodes. This knowledge is used for national monitoring of biological diversity and, by extension, the improvement of protection strategies.

The measures of the Action Plan 5.2 and 5.3 are central to the Strategic Goal 4. The measures 1.1, 1.2, 1.3, 1.4, 2.1, 2.3, 2.7, 3.1, 3.2, 3.3, 3.4, 3.5 and 5.8 represent a further contribution towards the goal.

Relevant links:
Swiss Biodiversity Strategy and Action Plan
https://www.bafu.admin.ch/bafu/en/home/topics/biodiversity/info-specialists/massnahmen-zur-erhaltung-und-foerderung-der-biodiversitaet/strategie-biodiversitaet-schweiz-und-aktionsplan.html
Plan de conservation des espèces en Suisse
https://www.bafu.admin.ch/dam/bafu/fr/dokumente/biodiversitaet/fachinfo-daten/konzept_artenfoerderungschweiz.pdf.download.pdf/plan_de_conservationdesespecesensuisse.pdf

Plan d'action national RPGAA
https://www.blw.admin.ch/blw/fr/home/nachhaltige-produktion/pflanzliche-produktion/pflanzengenetische-ressourcen/nap-pgrel.html
SwissBOL
http://www.swissbol.ch
Ordonnance sur la conservation et l'utilisation durable des ressources phytogénétiques pour l'alimentation et l'agriculture (ORPGAA)
https://www.admin.ch/opc/fr/classified-compilation/20151992/index.html
Relevant files:

1.5 Evaluate financial incentives

National target: Evaluate financial incentives, Strategic Goal 5
Rationale for the National Target:
In addition to incentives that promote biodiversity, today's tax and funding system (subsidies in the broad sense) contains some incentives that have a negative impact on biodiversity. As a result, taxes and subsidies must be examined. Important action fields exist at cantonal and international levels in addition to national level. Positive experience has already been gained in individual cantons with incentive and funding mechanisms for the promotion of the ecosystem services that are not directly marketable.

Goal of the Swiss biodiversity Strategy:
By 2020, the negative impacts of existing financial incentives on biodiversity are identified and avoided, if possible. Where appropriate, new positive incentives are created.

The Swiss Biodiversity Strategy Strategic Goal 5 has a similar goal and is thus directly relevant to the Aichi Target 3.

Level of application: National/Federal

Main related Aichi biodiversity Targets: 3
Other related Aichi Targets:

Other relevant information (Please use this field to provide any other relevant information, such as the process of developing and adopting the national target, the stakeholders involved or the strategies and plans in which this national target has been included.):

The measure 2.4 of the Action Plan is central to the Strategic Goal 5. The measures 2.3, 2.8, 3.2, 5.3 represent a further contribution towards the goal.

Study: Rodewald R., Neff C. 2001: Bundessubventionen – landschaftszerstörend oder landschaftserhaltend? Praxis-analyse und Handlungsprogramm. Bern: Stiftung Landschaftsschutz Schweiz

Relevant links:
Optimization of the financial incentives on biodiversity
http://www.ub.unibas.ch/digi/a125/sachdok/2014/BAU_1_6291443.pdf

Relevant files:

1.6 Record ecosystem services

National target: Record ecosystem services, strategic goal 6
Rationale for the National Target:
A healthy environment is crucial for the well-being of a country. Gross domestic product (GDP), the standard measure of growth, does not provide any information on this as it is based on financial transactions; the services provided by ecosystems and hence the importance of biodiversity for well-being are not visible in this form of measurement. To conserve and promote biodiversity, it is important to record ecosystem services using indicators and incorporate these into both public and private decision-making and market mechanisms. The indicators do not have to be monetary, however; the services can also be made visible in the form of bio-physical indicators (e.g. the accessibility of urban recreational areas).

Goal of the Swiss biodiversity Strategy:
By 2020, ecosystem services are recorded quantitatively. This enables their consideration in the measurement of welfare as complementary indicators to gross domestic product and in regulatory impact assessments.

The Swiss Biodiversity Strategy Strategic Goal 6 is relevant to the Aichi Target 2, as it aims at incorporating ecosystem services indicators to official statistics such as the gross domestic product. It also relates to the Aichi Target 3 because the quantitative recording of ecosystem services should provide a basis for the assessment of conflicts of both harmful and positive incentives on biodiversity. While the Strategic Goal 6 does not directly address the mobilization of financial resources, it is a prerequisite to reach the Aichi Target 20. Indeed, valuing ecosystem services modifies the cost-benefits balance and thus helps mobilizing resources for biodiversity financing.

Level of application: National/Federal

Main related Aichi biodiversity Targets: 2, 3, and 20.
Other related Aichi Targets:

Other relevant information (Please use this field to provide any other relevant information, such as the process of developing and adopting the national target, the stakeholders involved or the strategies and plans in which this national target has been included.):

The Strategic Goal 6 involves several Departments of the Swiss administration but also researchers and international collaborations.

The measure 2.5 of the Action Plan is central to the Strategic Goal 6. The measures 2.9 and 5.4 represent a further contribution towards the goal.

Relevant links:
Relevant files:

1.7 Generate and disseminate knowledge

National target: Generate and disseminate knowledge, Strategic Goal 7
Rationale for the National Target:
Economic and social decision-makers influence biodiversity directly or indirectly through their daily actions. Conversely, they also benefit in a variety of ways from biodiversity as the central basis of life. Detailed knowledge about species, ecosystems and their services, and an understanding of how personal and political decisions influence biodiversity are the basis on which responsibility can be taken for the conservation of biodiversity. The precondition for this is the availability of the necessary knowledge and information for the administration, practitioners, politicians and the public.

Goal of the Swiss biodiversity Strategy:
By 2020, sufficient knowledge about biodiversity is available to society and provides the basis for the universal understanding of biodiversity as a central pillar of life, and for its consideration in relevant decision-making processes.

The Swiss Biodiversity Strategy Strategic Goal 7 has very similar aims to both Aichi target 1 and 19 as it aims at increasing the awareness of society to biodiversity and knowledge at the same time.

Level of application: National/Federal

Main related Aichi biodiversity Targets: 1, 19
Other related Aichi Targets:

Other relevant information (Please use this field to provide any other relevant information, such as the process of developing and adopting the national target, the stakeholders involved or the strategies and plans in which this national target has been included.):

The Strategic Goal 7 involves the administration (Confederation, cantons and communes), institutions such as museums, zoological and botanic gardens, and nature conservation centres, researchers and the Swiss National Science foundation (SNF) as well as different actors in the practice, business and politics.

The measures of the Action Plan 3.6, 5.4, 5.5 and 5.6 are central to the Strategic Goal 7. The measures 1.3, 1.4, 2.1, 2.2, 2.3, 2.5, 2.6, 2.9, 3.1, 3.4, 3.5, 5.2, 5.3, 5.7 and 5.8 represent a further contribution towards the goal.

Relevant links:
Relevant files:

1.8 Promote biodiversity in settlement areas

National target: Promote biodiversity in settlement areas, Strategic Goal 8
Rationale for the National Target:
Biodiversity must also have a place in settlement areas. It fulfils important natural and climate functions, and also promotes good health, recreation and awareness among the population. Green and open spaces in settlement areas must be increasingly secured and connected; above all, their quality must be improved in the interest of their multifunctional use.

Goal of the Swiss biodiversity Strategy:
By 2020, biodiversity in settlement areas is promoted so that settlement areas contribute to the connection of habitats, settlement-specific species are conserved and the population is able to experience nature in the residential environment and in local recreational areas.

Because of the spread of settlement areas in Switzerland, it is particularly important to take those surfaces into account while addressing the underlying causes of biodiversity loss. The Swiss Biodiversity Strategy Strategic Goal 4 aims at promoting biodiversity in settlement areas and thus making development in those areas more sustainable. The Strategic Goal 4 is thus relevant to the Aichi Targets 4 and 7.

Level of application: National/Federal

Main related Aichi biodiversity Targets: 4, 7
Other related Aichi Targets:

Other relevant information

The measure 2.7 of the Action Plan is central to the Strategic Goal 8. The measures 3.1, 3.5, 3.6, 5.1 and 5.2 represent a further contribution towards the goal.

Relevant links:
Relevant files:

1.9 Strengthen international commitment

National target: Strengthen international commitment, Strategic Goal 9
Rationale for the National Target:
In addition to conserving its own biodiversity, Switzerland is reliant on the conservation of biodiversity at global level for its economic and social well-being. The maintenance of the stability of ecosystems at global level is also in the interest of Switzerland. Hence, the efforts made at international level must be strengthened.

Goal of the Swiss biodiversity Strategy:
By 2020, Switzerland's commitment to the conservation of global biodiversity at international level is strengthened.

Switzerland's biodiversity footprint is far in excess of a level that can be accommodated by the planetary boundaries. It has increased significantly in recent years. The rising resource consumption is causing an ever larger share of the consumption-based biodiversity footprint to take its toll abroad: It was just over half in 1996 and more than roughly two-thirds in 2011. This high share is tied to the fact that Switzerland's small open economy is increasingly dependent upon imports. The maintenance of the global ecosystems are thus highly important for Switzerland.
Switzerland, as a landlocked country, is not directly affected by coral bleaching or ocean acidification. However, over 90% of the fish, shellfish and crustaceans consumed in Switzerland are imported from abroad. The ordinance on controlling the lawful origin of imported marine fishery products came into force on 1 March 2017. This new ordinance is designed to ensure that only fishery products of lawful origin – i.e. no products from illegal, unreported and unregulated fishing activities – are imported into Switzerland. In general, the high ecological footprint of Switzerland (GHG emissions, international trade and tourism) impacts the conservation of coral reefs. Switzerland has thus a particular responsibility to strengthen its commitment to the conservation of global biodiversity at international levels. In the context of the Strategic Goal 9, it is particularly relevant to the Aichi Target 6 and 10.
Switzerland is committed to conserve and sustainably use agrobiodiversity, and to promote coherency and mutual supportiveness among the relevant international instruments. This is done though Switzerland's involvement with the CBD, but also through its strong engagement with the Food and Agriculture Organization of the United Nations (FAO), the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), the Commission on Genetic Resources for Food and Agriculture (CGRFA), the Sustainable Food Systems Programme (SFS) and the Global Soil Partnership. International commitment is also strengthened by the ratification of the Nagoya Protocol, making this Strategic Goal directly relevant to the Aichi Target 16.
Switzerland has no indigenous communities as understood by the Convention. Switzerland's local communities, however, are fully integrated in the implementation of the Convention, as described in the principles of Swiss federalism, e.g. through environmental protection organisations' collective right of appeal. The protection of traditional knowledge, innovations and practices as well as the rights of the indigenous and local communities, is an important pillar of Switzerland's technical cooperation at the international level, making this Strategic Goal relevant to the Aichi target 18.
Assuring sufficient funding is a main goal of the Strategic Goal 9 making it directly relevant to the Aichi Target 20.

Level of application: National/Federal

Main related Aichi biodiversity Targets: 6, 10, 16, 18 and 20.
Other related Aichi Targets:

Other relevant information:
The measures of the Action Plan 2.8, 2.9 and 5.7 are central to the Strategic Goal 9. The measures 2.5 and 5.4 represent a further contribution towards the goal.

Relevant links:
Relevant files:

1.10 Monitor changes in biodiversity

National target: Monitor changes in biodiversity, Strategic Goal 10
Rationale for the National Target:
The reliable observation of changes in biodiversity in Switzerland must be made possible. Based on the monitoring system that already exists today, a monitoring system shall be developed for all levels of biodiversity (diversity of ecosystems, species and genes). This is an important precondition for the monitoring of the implementation and success of national and sectoral environmental targets and the Swiss Biodiversity Strategy.

Goal of the Swiss biodiversity Strategy:
By 2020, the monitoring of changes in ecosystems and in species and genetic diversity is ensured.

Because the Strategic Goal 10 is a precondition to monitor the success of the Swiss Biodiversity Strategy and Action Plan it is thus directly related to the Aichi Target 17. Monitoring programs are central to knowledge acquisition making this Strategic goal directly relevant to the Aichi Target 19.

Level of application: National/Federal

Main related Aichi biodiversity Targets: 17, 19
Other related Aichi Targets:

Other relevant information:

The measure 5.8 of the Action Plan is central to the Strategic Goal 10. The measures 1.2, 2.2, 2.5 and 3.5 represent a further contribution towards the goal.

Relevant links:
Relevant files:

2 Section II. Implementation measures, their effectiveness, and associated obstacles and scientific and technical needs to achieve national targets

2.1 Sustainable use of biodiversity

Describe a measure taken to contribute to the implementation of your country's national biodiversity strategy and action plan.

The protection and use of biodiversity are not necessarily mutually exclusive. For example in spaces in which biodiversity is under pressure (e.g. agricultural land and built-up areas), there is major potential for the promotion of biodiversity (e.g. near-natural areas with connectivity and habitat function as a part of the ecological infrastructure) with direct positive impacts for the population (e.g. conservation and improvement of soil quality, regulation of air quality and microclimate, noise reduction, nature as an alternative to the built environment). Several measures of the Action Plan aim at making the use of natural resources more sustainable. The agriculture and forestry sectors are each concerned by a measure. A further measure aims at incorporating biodiversity factors into existing sustainability standards. Finally the Confederation is developing a Swiss soil strategy with the aim of ensuring the long-term conservation of the soil as a non-renewable resource and of its natural functions.

Agriculture: In accordance with the findings of the report compiled in response to parliamentary postulate 13.4284 and in fulfilment of the objectives of the Swiss Biodiversity Strategy, the target deficits identified in the environmental objectives for agriculture will be remedied, particularly in relation to biodiversity and nitrogenous atmospheric pollutants.

To remedy the deficit in the area of biodiversity, existing production systems will be evaluated and further developed. In addition, the question as to whether and to what extent a "Biodiversity evaluation, criteria and consultancy system" would add value for the specific promotion of species and habitats will be examined. To eliminate the deficits in relation to nitrogenous atmospheric pollutants in agriculture, the Confederation and cantons will improve the implementation of emissions reduction measures (sheds, manure stores and manure spreading). In addition, the direct payment instruments for the promotion of biodiversity in grassland and arable areas contained in the Direct Payments Ordinance (biodiversity compensation areas, habitat connectivity and structural elements) will be examined in relation to their biological impact on the promotion of native species and habitats. The design of these instruments, their service requirements and compensation will be improved with a view to increasing effectiveness.

Forestry: The programme agreements between the Confederation and cantons in the area of forest biodiversity will be further developed and impact analyses will be carried out to ensure the consistent implementation of the objectives for natural forest development defined in the Forest Policy 2020.

The Forest Policy 2020 stipulates that the existing area accounted for by forest reserves (6.3% of forest area as of the end of 2016 shall be increased to 8% by 2020 and to 10% by 2030. The objective of creating a minimal number of 15 big forest reserves (>500 ha) by then has already been reached (17 big forest reserves in 2016). This shall enable the attainment of the Federal Council's Vision 2030 regarding the sustainable use of the natural resource forest. Natural forest reserves facilitate a natural dynamic in which the world of organisms and their inanimate environment are left to develop naturally. In this way, natural forest reserves afford the protection of processes necessary for the long-term conservation of biodiversity and also provide important reference areas for the monitoring of natural processes and objects of study for nature education. Special forest reserves will also be created for the implementation of habitat promotion measures for national priority forest species and communities and for the promotion of ecologically valuable forest habitats.

Sustainability standards: Based on its label strategy, the Confederation will support the incorporation of concrete biodiversity criteria into sustainability standards and their increasing consideration in the financial decisions of different sectors.

Sustainability standards shall be based more specifically on criteria for the protection and promotion of biodiversity and be applied more frequently, for example in the context of construction projects, public sector procurement decisions, private companies, the financial market processes of private financial

services providers and pension schemes, and in international negotiations and investments, and projects carried out in developing and newly industrialised countries. The Confederation will also establish the conditions necessary for assessing the impact of products on biodiversity based on life cycle assessments (LCA).

Soil strategy: The Swiss soil strategy shall present measures for sustainable and integrated soil management. It is aimed to establish a “National Competence Centre for Soil” for the management and provision of information about soil (in fulfilment of parliamentary motion 12.4230). In addition, policy implementation in relation to soil matters shall be intensified and efforts introduced for increasing the awareness of users and the general public of the importance of the resource soil. Concrete measures will be formulated in the context of the development of the Swiss soil strategy.

For the implementation measure, please indicate to which national or Aichi Biodiversity target(s) it contributes
The measure is a central contribution to the national target 1 and contributes further to national targets 2, 3, 4, 5 and 7.

Assessment of the effectiveness of the implementation measure taken in achieving desired outcomes
- Unknown

Please explain the selection and where possible indicate the tools or methodology used for the assessment of effectiveness above
The implementation of the measures in Switzerland is currently in the first phase that runs in between 2017 and 2023. It is thus too early to assess the effectiveness of the measure. The monitoring program “Agricultural Species and Habitats (ALL-EMA)” is recording data since 2015 and will be able from 2020 and onwards to assess the state of biodiversity in agriculture. It is designed so as to be able to assess whether the environmental objectives for agriculture are reached or not. The Swiss National Forest Inventory (NFI) will be used to assess the progress of the Forest Strategy. The MONET indicator system is regularly updated to assess if Switzerland is on the road to sustainable development.

Relevant websites, links, and files (Please use this field to indicate any relevant websites, web links or documents where additional information related to this assessment can be found.)
None available

Other relevant information, including case studies to illustrate how the measure taken has resulted in (or is expected to result in) outcomes that contribute to the implementation of the NBSAP

Other relevant website address or attached documents (Please use this field to indicate any relevant websites, web links or documents where additional information can be found)
https://www.agroscope.admin.ch/agroscope/en/home/topics/environment-resources/monitoring-analytics/all-ema.html
https://www.bfs.admin.ch/bfs/en/home/statistics/sustainable-development/monet.html

Obstacles and scientific and technical needs related to the measure taken: Please describe what obstacles have been encountered and any scientific and technical needs for addressing these, including technical and scientific cooperation, capacity development activities or the need for guidance materials.
The urgent need for action in relation to biodiversity is undisputed. However, political reality and, particularly, financial and temporal conditions in Switzerland pose an obstacle to the implementation of measures in support of biodiversity. The tense budgetary situation and efforts to achieve savings at federal and cantonal levels considerably limit the capacity to provide additional financial and human resources for improving the state of the environment and guaranteeing the provision of these resources for extended periods. For this reason, the practical implementation of the measures contained in the Action Plan will take place in phases and across extensive areas using existing resources.
Relevant websites, web links and files (Please use this field to indicate any relevant websites, web links or documents where additional information related to these obstacles and scientific and technical needs can be found.)

2.2 Develop an ecological infrastructure

Describe a measure taken to contribute to the implementation of your country's national biodiversity strategy and action plan.

By 2040, Switzerland should have a functioning ecological infrastructure in both rural and urban areas, on the Plateau, in the Jura and in the Alps. The Swiss Biodiversity Strategy Action Plan describes the measures and timetable needed to this end, firstly to fill certain gaps in the system of protected areas and to enhance their value. Moreover, networking areas must be completed and made permanent throughout the territory. All sectors will have to contribute to the construction of the ecological infrastructure.

In cooperation with the cantons, the Confederation is developing a holistic system of targets for the ecological infrastructure incorporating substantive and spatial principles and objectives for the safeguarding of space for the long-term conservation of biodiversity (quantitatively, qualitatively and regionally distributed). Existing elements of ecological infrastructure in the regions shall be conserved or promoted through the establishment and development of the countrywide ecological infrastructure.

Working in close cooperation with the cantons and other interested circles – primarily actors involved in the protection and use of biodiversity – the Confederation is beginning by developing a conceptual basis for the further development of the ecological infrastructure. Data available for the portrayal of the ecological infrastructure will be verified and deficits identified. Further measures ensuring an efficient and comprehensive portrayal will be applied. The added value of a concept in accordance with Art. 13 of the Spatial Planning Act (RPG) and the integration of the principles of ecological infrastructure into an existing planning instrument (e.g. Swiss Landscape Concept, LKS) will be examined.

There is a backlog in relation to the maintenance and remediation of existing protected areas, both for the biotopes of national importance in accordance with the Protection of Nature and Heritage Protection Act (NCHA) and for the wildlife areas and wildlife reserves in accordance with the Federal Act on the Hunting and Protection of Wild Mammals and Birds (HuntA). The implementation of the remediation measures will be agreed between the Confederation and cantons, defined in management and maintenance plans, and phased and prioritised on the basis of the criteria: action requirement, significance, upgrading potential and feasibility. The Confederation will develop a system for the monitoring of the maintenance and remediation measures and will systematically monitor the quality of their implementation. The cantons will ensure that similar measures are formulated and implemented for biotopes of regional and local importance. With a view to enabling the greater integration of biotopes into spatial planning, an effort will also be made to ensure the binding guaranteeing of biotopes among landowner.

The Forest Policy 2020 stipulates that the existing area accounted for by forest reserves (6.3% of forest area as of the end of 2016) shall be increased to 8% by 2020 and to 10% by 2030.The objective of creating a minimal number of 15 big forest reserves (>500 ha) by then has already been reached (17 big forest reserves in 2016).This shall enable the attainment of the Federal Council's Vision 2030 regarding the sustainable use of the natural resource forest. Natural forest reserves facilitate a natural dynamic in which the world of organisms and their inanimate environment are left to develop naturally. In this way, natural forest reserves afford the protection of processes necessary for the long-term conservation of biodiversity and also provide important reference areas for the monitoring of natural processes and objects of study for nature education. Special forest reserves will also be created for the implementation of habitat promotion measures for national priority forest species and communities and for the promotion of ecologically valuable forest habitats.

For the implementation measure, please indicate to which national or Aichi Biodiversity target(s) it contributes

The measure is a central contribution to the national target 2 and contributes further to national targets 1, 3, 4 and 10.

Assessment of the effectiveness of the implementation measure taken in achieving desired outcomes

- Unknown

Please explain the selection and where possible indicate the tools or methodology used for the assessment of effectiveness above

The implementation of the measure in Switzerland is currently in the first phase that runs in between 2017 and 2023. It is thus too early to assess the effectiveness of the measure. The monitoring of the effectiveness of habitat conservation in Switzerland (WBS) will be used in the following year to assess the effectiveness of the measure.

Relevant websites, links, and files (Please use this field to indicate any relevant websites, web links or documents where additional information related to this assessment can be found.)

https://www.wsl.ch/en/microsites/monitoring-the-effectiveness-of-habitat-conservation-in-switzerland.html

Other relevant information, including case studies to illustrate how the measure taken has resulted in (or is expected to result in) outcomes that contribute to the implementation of the NBSAP

Other relevant website address or attached documents (Please use this field to indicate any relevant websites, web links or documents where additional information can be found)

Obstacles and scientific and technical needs related to the measure taken: Please describe what obstacles have been encountered and any scientific and technical needs for addressing these, including technical and scientific cooperation, capacity development activities or the need for guidance materials.

The urgent need for action in relation to biodiversity is undisputed. However, political reality and, particularly, financial and temporal conditions in Switzerland pose an obstacle to the implementation of measures in support of biodiversity. The tense budgetary situation and efforts to achieve savings at federal and cantonal levels considerably limit the capacity to provide additional financial and human resources for improving the state of the environment and guaranteeing the provision of these resources for extended periods. For this reason, the practical implementation of the measures contained in the Action Plan will take place in phases and across extensive areas using existing resources.

Relevant websites, web links and files (Please use this field to indicate any relevant websites, web links or documents where additional information related to these obstacles and scientific and technical needs can be found.)

2.3 Species conservation

Describe a measure taken to contribute to the implementation of your country's national biodiversity strategy and action plan.

Building on the "Swiss Species Promotion Plan", the Confederation will develop action plans for the promotion of national priority species, based on which the cantons will plan and implement region-specific species promotion measures. National consultancy offices will be established and supplemented by regional ones. The training of species experts will also be funded.

The action plans in accordance with the "Swiss Species Promotion Plan" will be based, *inter alia*, on the habitat requirements of the national priority species and their species groups. In addition, areas will be identified in which measures for the promotion of the national priority species and/or species communities shall be carried out. Adapted use and species promotion are not mutually exclusive. The action plans and identified areas will provide the cantons with a basis for the planning and implementation of region-specific measures for the long-term conservation and promotion of national priority species. The protection objectives and the implementation of specific promotional measures for national priority species will be defined in the context of the programme agreements and thus funded by the Confederation. The cantons will ensure that analogue measures are defined and implemented for the regional priority species.

For the implementation measure, please indicate to which national or Aichi Biodiversity target(s) it contributes
The measure is a central contribution to the national target 3 and contributes further to national targets 1, 2, 4 and 7.

Assessment of the effectiveness of the implementation measure taken in achieving desired outcomes
- Unknown

Please explain the selection and where possible indicate the tools or methodology used for the assessment of effectiveness above
The implementation of the measure in Switzerland is currently in the first phase that runs in between 2017 and 2023. It is thus too early to assess the effectiveness of the measure. The update of red lists as well as the data collected by the biodiversity monitoring programs (BDM, WBS, ALL-EMA) will be used to assess the effectiveness of the measure in the future.

Relevant websites, links, and files (Please use this field to indicate any relevant websites, web links or documents where additional information related to this assessment can be found.)
https://www.bafu.admin.ch/bafu/fr/home/themes/biodiversite/etat/biodiversite---programmes-de-surveillance.html

Other relevant information, including case studies to illustrate how the measure taken has resulted in (or is expected to result in) outcomes that contribute to the implementation of the NBSAP

Other relevant website address or attached documents (Please use this field to indicate any relevant websites, web links or documents where additional information can be found)

Obstacles and scientific and technical needs related to the measure taken: Please describe what obstacles have been encountered and any scientific and technical needs for addressing these, including technical and scientific cooperation, capacity development activities or the need for guidance materials.
The urgent need for action in relation to biodiversity is undisputed. However, political reality and, particularly, financial and temporal conditions in Switzerland pose an obstacle to the implementation of measures in support of biodiversity. The tense budgetary situation and efforts to achieve savings at federal and cantonal levels considerably limit the capacity to provide additional financial and human resources for improving the state of the environment and guaranteeing the provision of these resources for extended periods. For this reason, the practical implementation of the measures contained in the Action Plan will take place in phases and across extensive areas using existing resources.

Relevant websites, web links and files (Please use this field to indicate any relevant websites, web links or documents where additional information related to these obstacles and scientific and technical needs can be found.)

2.4 Evaluate financial incentives

Describe a measure taken to contribute to the implementation of your country's national biodiversity strategy and action plan.
The Confederation will present an overall evaluation of the impacts of federal subsidies and other incentives with consequences for biodiversity by 2023.

The impacts of existing federal subsidies and other incentives with impacts on biodiversity will be examined and options for optimisations will be demonstrated. Selected issues will be analysed in detail and processed for the overall evaluation. The latter will provide a comprehensive overview of the progress attained up to 2023. Resulting possibilities for improvement will be indicated and recommendations for optimising policy implementation will also be made.

For the implementation measure, please indicate to which national or Aichi Biodiversity target(s) it contributes

The measure is a central contribution to the national target 5 and contributes further to national target 1.

Assessment of the effectiveness of the implementation measure taken in achieving desired outcomes
- Unknown

Please explain the selection and where possible indicate the tools or methodology used for the assessment of effectiveness above
The implementation of the measure in Switzerland is currently in the first phase that runs in between 2017 and 2023. It is thus too early to assess the effectiveness of the measure. A specific monitoring is planned to assess the effectiveness of the measure.

Relevant websites, links, and files (Please use this field to indicate any relevant websites, web links or documents where additional information related to this assessment can be found.)
None available

Other relevant information, including case studies to illustrate how the measure taken has resulted in (or is expected to result in) outcomes that contribute to the implementation of the NBSAP

Other relevant website address or attached documents (Please use this field to indicate any relevant websites, web links or documents where additional information can be found)

Obstacles and scientific and technical needs related to the measure taken: Please describe what obstacles have been encountered and any scientific and technical needs for addressing these, including technical and scientific cooperation, capacity development activities or the need for guidance materials.
The urgent need for action in relation to biodiversity is undisputed. However, political reality and, particularly, financial and temporal conditions in Switzerland pose an obstacle to the implementation of measures in support of biodiversity. The tense budgetary situation and efforts to achieve savings at federal and cantonal levels considerably limit the capacity to provide additional financial and human resources for improving the state of the environment and guaranteeing the provision of these resources for extended periods. For this reason, the practical implementation of the measures contained in the Action Plan will take place in phases and across extensive areas using existing resources.

Relevant websites, web links and files (Please use this field to indicate any relevant websites, web links or documents where additional information related to these obstacles and scientific and technical needs can be found.)

2.5 Ecosystem services

Describe a measure taken to contribute to the implementation of your country's national biodiversity strategy and action plan.
The Confederation will initiate and support groundwork for the definition of indicators that demonstrate the economic and social significance of ecosystem services for the Swiss economy and society. The indicators will be examined every four years and adapted and updated if required.

Reliable information about many ecosystem services is lacking and this makes it difficult to take sufficient account of them in political, economic and social decision-making processes. For this reason, the Confederation would like to record, quantify and communicate information about these services in a coordinated fashion. The international project "The Economics of Ecosystems and Biodiversity" (TEEB) provides a model for this process. First, a system of indicators for ecosystem services and the natural capital will be developed. Synergies with existing monitoring programmes, environmental surveys and research platforms operating at both national and international levels will be exploited. Based on this indicator system, instruments will be developed that facilitate the incorporation of the ecosystem services into technical, political and economic decision-making processes. The Confederation will also engage in knowledge transfer on the topic of ecosystem services. The focus here will be on the practical application and integration of ecosystem services, in particular in the context of spatially-relevant

decisions by authorities and construction clients. The insights gained from this work will be used to raise awareness among decision makers and society in general.

For the implementation measure, please indicate to which national or Aichi Biodiversity target(s) it contributes
The measure is a central contribution to the national target 6 and contributes further to national targets 1, 2, 7, 9 and 10.

Assessment of the effectiveness of the implementation measure taken in achieving desired outcomes
- Unknown

Please explain the selection and where possible indicate the tools or methodology used for the assessment of effectiveness above
The implementation of the measure in Switzerland is currently in the first phase that runs in between 2017 and 2023. It is thus too early to assess the effectiveness of the measure.

Relevant websites, links, and files (Please use this field to indicate any relevant websites, web links or documents where additional information related to this assessment can be found.)
None available

Other relevant information, including case studies to illustrate how the measure taken has resulted in (or is expected to result in) outcomes that contribute to the implementation of the NBSAP

Other relevant website address or attached documents (Please use this field to indicate any relevant websites, web links or documents where additional information can be found)

Obstacles and scientific and technical needs related to the measure taken: Please describe what obstacles have been encountered and any scientific and technical needs for addressing these, including technical and scientific cooperation, capacity development activities or the need for guidance materials.
The urgent need for action in relation to biodiversity is undisputed. However, political reality and, particularly, financial and temporal conditions in Switzerland pose an obstacle to the implementation of measures in support of biodiversity. The tense budgetary situation and efforts to achieve savings at federal and cantonal levels considerably limit the capacity to provide additional financial and human resources for improving the state of the environment and guaranteeing the provision of these resources for extended periods. For this reason, the practical implementation of the measures contained in the Action Plan will take place in phases and across extensive areas using existing resources.

Relevant websites, web links and files (Please use this field to indicate any relevant websites, web links or documents where additional information related to these obstacles and scientific and technical needs can be found.)

2.6 Promote biodiversity in settlement areas

Describe a measure taken to contribute to the implementation of your country's national biodiversity strategy and action plan.
With a view to promoting biodiversity in built-up areas, the Confederation will develop model building regulations and make them available to the cantons and communes as guidelines. The implementation of the model building regulations may require the adaptation of the cantonal building legislation.

Model building regulations will provide the cantons and communes with guidelines for local planning and for the formulation, verification and implementation of legal building and planning regulations. The legal requirements for ecological compensation in built-up areas, that is the promotion of habitats and their connectivity, will be substantiated in the model building regulations. In addition, biodiversity-relevant factors will be taken into account in the context of invitations to tender for planning projects, the assessment of planning applications, and the assessment and authorisation of building projects.

For the implementation measure, please indicate to which national or Aichi Biodiversity target(s) it contributes
The measure is a central contribution to the national target 8 and contributes further to national targets 1, 2, 3 and 4.

Assessment of the effectiveness of the implementation measure taken in achieving desired outcomes
- Unknown

Please explain the selection and where possible indicate the tools or methodology used for the assessment of effectiveness above
The implementation of the measure in Switzerland is currently in the first phase that runs in between 2017 and 2023. It is thus too early to assess the effectiveness of the measure. A specific monitoring is planned to assess the effectiveness of the measure.

Relevant websites, links, and files (Please use this field to indicate any relevant websites, web links or documents where additional information related to this assessment can be found.)
None available

Other relevant information, including case studies to illustrate how the measure taken has resulted in (or is expected to result in) outcomes that contribute to the implementation of the NBSAP

Other relevant website address or attached documents (Please use this field to indicate any relevant websites, web links or documents where additional information can be found)

Obstacles and scientific and technical needs related to the measure taken: Please describe what obstacles have been encountered and any scientific and technical needs for addressing these, including technical and scientific cooperation, capacity development activities or the need for guidance materials.
The urgent need for action in relation to biodiversity is undisputed. However, political reality and, particularly, financial and temporal conditions in Switzerland pose an obstacle to the implementation of measures in support of biodiversity. The tense budgetary situation and efforts to achieve savings at federal and cantonal levels considerably limit the capacity to provide additional financial and human resources for improving the state of the environment and guaranteeing the provision of these resources for extended periods. For this reason, the practical implementation of the measures contained in the Action Plan will take place in phases and across extensive areas using existing resources.

Relevant websites, web links and files (Please use this field to indicate any relevant websites, web links or documents where additional information related to these obstacles and scientific and technical needs can be found.)

2.7 Strengthen international commitment

Describe a measure taken to contribute to the implementation of your country's national biodiversity strategy and action plan.
In accordance with the "Dispatch on Switzerland's International Cooperation 2017-2020", Switzerland will focus on the protection and sustainable management of natural resources and ecosystems.

Switzerland will intensify its commitment to biodiversity in the context of international cooperation. The focus is set on the sustainable use of biodiversity, the sustainable management of natural resources and ecosystems, the promotion of sustainable production methods, the promotion of sustainable trade, and the implementation of the principles of Access and Benefit-Sharing (ABS).
Switzerland will also provide the maximum possible support for the secretariats of biodiversity-relevant multilateral agreements (e.g. Convention on Biological Diversity, Bonn Convention, Ramsar Convention, CITES Convention).

Switzerland will intensify its commitment to international organisations and collaborate on international reporting so that political decisions relating to the topic of biodiversity can be based on comprehensive scientific knowledge.

Switzerland will provide financial support for projects for the provision and global exchange of biodiversity-relevant information by institutions such as UNEP-Grid, IUCN, UNEP-WCMC and the GBIF and will support the CBD's scientific expert groups. Switzerland will also contribute to GEO-BON, one of the most important global coordination bodies that records information about biodiversity (in particular on the monitoring of biodiversity and its change over time), and intensify its commitment to the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES), e.g. by supporting the Technical Support Unit (TSU) for Europe/Central Asia which is based in Switzerland.

For the implementation measure, please indicate to which national or Aichi Biodiversity target(s) it contributes
The measure is a central contribution to the national target 9 and contributes further to national targets 5, 6 and 7.

Assessment of the effectiveness of the implementation measure taken in achieving desired outcomes
- Unknown

Please explain the selection and where possible indicate the tools or methodology used for the assessment of effectiveness above
The implementation of the measure in Switzerland is currently in the first phase that runs in between 2017 and 2023. It is thus too early to assess the effectiveness of the measure.

Relevant websites, links, and files (Please use this field to indicate any relevant websites, web links or documents where additional information related to this assessment can be found.)
None available

Other relevant information, including case studies to illustrate how the measure taken has resulted in (or is expected to result in) outcomes that contribute to the implementation of the NBSAP

Other relevant website address or attached documents (Please use this field to indicate any relevant websites, web links or documents where additional information can be found)

Obstacles and scientific and technical needs related to the measure taken: Please describe what obstacles have been encountered and any scientific and technical needs for addressing these, including technical and scientific cooperation, capacity development activities or the need for guidance materials.
The urgent need for action in relation to biodiversity is undisputed. However, political reality and, particularly, financial and temporal conditions in Switzerland pose an obstacle to the implementation of measures in support of biodiversity. The tense budgetary situation and efforts to achieve savings at federal and cantonal levels considerably limit the capacity to provide additional financial and human resources for improving the state of the environment and guaranteeing the provision of these resources for extended periods. For this reason, the practical implementation of the measures contained in the Action Plan will take place in phases and across extensive areas using existing resources.

Relevant websites, web links and files (Please use this field to indicate any relevant websites, web links or documents where additional information related to these obstacles and scientific and technical needs can be found.)

3 Section III. Assessment of progress towards each national target

3.1 Object of the assessment: Use biodiversity sustainably, Strategic Goal 1

Category of progress towards the implementation of the selected target
Progress towards target but at an insufficient rate

Additional information (Please provide information on the evidence used in the assessment of this target, drawing upon relevant information provided in section II, including obstacles in undertaking the assessment):

The measures for sustainable use of biological diversity have two main pillars.

- They are decisive in supporting the functions of ecological infrastructure by promoting protected areas and contributing to the networking of natural or near natural habitats.
- They ensure the sustainability of the preservation and development of biodiversity and ecosystem services throughout the country by optimizing the ecological quality of the surfaces used.

Switzerland's ecosystems are under threat. As a result of the constantly growing and increasingly mobile population, combined with the demand for land by trade and industry, the need for living and commercial space, as well as for transport infrastructure, is on the rise. In addition, the demand for residential space per person is continuing to increase. Every second, approximately a square meter of agricultural land is lost, and this means that spatial development in Switzerland is by no means as sustainable as called for in the Federal Constitution.

The federal government is introducing a variety of measures, in order to counter this trend, including a revision of the Federal Spatial Planning Act with aims at diminishing the loss of agricultural land and stopping the practice of land speculation. Excessively large development zones will be reduced and better use is to be made of existing land reserves. This will result in more compact housing development and will protect the landscape and preserve the attractiveness of Switzerland as a place to live and work. The focus of the second phase of the revision will be on the protection of arable land and better spatial harmonization of infrastructure. In this process, the framework for orientation and action is the spatial concept for Switzerland developed jointly by the federal government, the cantons as well as urban and municipal authorities.

Spatial planning involves, among other things, the spatial coordination of the spatially relevant sectoral policies that are detailed below into eight partial targets.

<u>Forestry</u>

The Forest Policy 2020 sets the goal of forest biodiversity conservation and targeted improvement. Based on the Swiss Biodiversity Strategy and the Forest Policy 2020, the FOEN has formulated concrete goals and measures aimed at conserving forest biodiversity. The Confederation supports the cantons with program agreements to promote forest biodiversity. Measures are principally aimed at creating forest reserves and old-growth islands, retaining biotope trees, enhancing edges and forest habitats and conserving species. The lists of national priority species and habitats developed by the FOEN are the bases for determining the forest biodiversity promotion goals and measures. To conserve more challenging species such as the fungi that live on wood, large old-growth stocks are required. The conditions are favorable in natural forest reserves: They have nearly three times more dead-wood on average than the average Swiss forest. For several national priority species such as the capercaillie and the middle spotted woodpecker, the Confederation is developing specific action plans. Regional contributions to the achievement of these national implementation goals vary because each region of Switzerland has different natural values and forest use requirements.

Several indicators are showing that the biological quality of the forest is generally increasing in Switzerland. The area of natural regeneration is continuously increasing and today represents 89% of the entire young woodland area. Dead-wood stocks are also increasing as well as the area of forest reserves. Those positive results explain why the partial target is assessed as “On track to achieve target”.

<u>Agriculture</u>

In 2008, the FOEN and the FOAG formulated environmental goals for agriculture. These were derived from existing laws, ordinances, international agreements and Federal Council decisions. Accordingly, agriculture should “make a considerable contribution to the conservation and promotion of biodiversity” as well as using natural resources sustainably. To achieve this goal, qualitative and quantitative targets

were set in 2013 for the various agricultural zones and five main regions, which were chosen based on the potential spread of the target and index species. In addition to biodiversity priority areas with environmental quality goals, specific promotional measures are required in all regions for target species and national priority index species.

The proportion of ecologically high quality area that is considered necessary to conserve biological diversity is far from being reached in all regions especially in lowlands were they represent only 3 to 4.5% (goal 12 to 15%). Significant efforts are needed to develop the appropriate areas in the right place and at the appropriate quality level in order to conserve the approximately 1700 target species and characteristics listed under the environmental objectives for agriculture. In many places, extensive exploitation is not enough; in some cases, habitats need to be recreated in the right place, in other words on sites with adequate potential.

Current agricultural policy measures increasingly focus on enhancing ecological quality and networking of the area reserved for promoting biodiversity (ARPB). The proportion of quality level II ARPBs and ARPBs that are networked increases continuously but is still on average across regions too low. In the areas of crop rotation it is about 1%. Moreover, the trophic buffer zones around biotopes of national and regional importance have significant shortcomings as many are not yet implemented by the Cantons.

Atmospheric deposition of nitrogen compounds has a decisive impact on vegetation and consequently also on fauna. Nitrogen loads come mainly from livestock production. In Switzerland, natural atmospheric deposition of biologically active nitrogen compounds amounts to 0.5 kg per hectare per year. Today, on average, 19 kg of atmospheric nitrogen compounds per hectare are deposited each year on the soil. All (100%) of high marshes, 84% of lowland marshes and 42% of grasslands and dry pastures are affected by excessive atmospheric deposition of nitrogen compounds. They induce such major changes in environmental conditions in these areas that specialized species disappear in the medium to long term.

The state of plants, and animals in agricultural lands as measured by several monitoring programs is worrying. Indicators show that species communities are increasingly more similar across regions. This homogenization process reveals the effect of the nitrogen surplus and of the land use types that are becoming more similar. Adventitious or weed flora is among the most threatened vegetation type in Switzerland. The effectives of bird species that have been identified as characteristic or flagship species for the agricultural lands have decreased by 25% since 1990.

Improved agricultural measures to promote biodiversity have helped to halt the loss of indigenous species and habitats in recent years. Nevertheless, the gaps to be met in order to achieve the target for areas of promotion of biodiversity of high ecological quality remain important; populations of target species and characteristics for agriculture still show a downward trend. The partial objective is therefore assessed as “Progress towards target but at an insufficient rate”.

Hunting and fishing

The Federal Act on the Hunting and Protection of Wild Mammals and Birds (HuntA) compels the cantons to regulate their numbers of ungulates by hunting or other measures so as not to impede the natural rejuvenation of forests and to prevent serious damage to agricultural crops. In case of a population decline in a species that can be hunted under the law, the cantons have an obligation to restrict hunting. Threatened species must be protected. In order to protect and conserve some rare and endangered species of mammals and wild birds and to maintain the numbers of healthy and locally adapted species that can be hunted, the Confederation has created a network of wildlife reserves and reserves for waterbirds and migratory birds of international and national Importance. This network is complemented by protected areas and wildlife areas created by the cantons.

The provisions on the protection and exploitation of fish and crayfish populations are stated in the Federal Fisheries Act and its implementing ordinance. The natural diversity of species, native species of fish, crayfish, organisms on which they feed and their habitats should be conserved, improved and restored where possible. The protection and exploitation of fish stocks must reconcile biological and

economic imperatives. Other legal acts relevant to the Swiss fishery are the Federal Water Protection Act and the Federal Animal Welfare Act and their related ordinances.

The Federal Act on the Hunting and Protection of Wild Mammals and Birds (HuntA) takes into account biodiversity and sustainable resources use, and the situation has been improved in the Federal Fisheries Act. However it is still unclear whether the improvements will be sufficient to reach the partial target of conserving species and genetic diversity by 2020. This is why the partial target is assessed as “Progress towards target but at an insufficient rate”.

Tourism, sport and leisure

Intact biodiversity and beautiful landscapes are important assets for tourism, sporting and recreational activities. However, they have multiple impacts on the environment. The FOEN seeks to impose the principle of sustainable development on the use of biodiversity, landscape and ecosystem services for tourism and sporting purposes. It examines the impact of federally licensed cableway projects, encourages users to become more respectful, and supports and advises the cantons in delineating areas of tranquility for wildlife.

In the "Swiss Landscape" concept, in the chapter "Sports, leisure and tourism", the Federal Council defined the binding objectives assigned to the relevant federal services. The concept is currently being updated. The FOEN has also set clear objectives for the sports and tourism sector: "To preserve the quality of natural environments by preventing the occurrence of irreversible damage and by encouraging a respectful use of biodiversity by all sport and tourist activities carried out on the national territory."

Despites the measures taken, the pressure coming from touristic or sport activities and infrastructure is growing (such as the amount of slope area supplied with artificial snow for example). It is thus unlikely that by 2020 tourism, sport and leisure activities will be sustainable regarding natural resources. This is why the partial target is assessed as “Progress towards target but at an insufficient rate”.

Transport

The FOEN has been given a legal mandate to study the effects of transport on the environment, to propose solutions to limit them and to implement them within the framework of its competences.

The wide permanent routes of wildlife are called wildlife corridors. Wildlife corridors of supraregional importance connect certain populations on a large perimeter. There are 303 wildlife corridors of supraregional importance in Switzerland that are listed and described (state 2012). An overall assessment of wildlife corridors leads to the following conclusion: 47 (16%) of the 303 wildlife corridors are severely damaged and can no longer be used by wildlife. The functionality of more than half of the corridors is severely compromised (171 corridors, 56%). One third of the corridors (85 corridors, 28%) are intact. It was decided in 2011 to refurbish 51 wildlife corridors of supraregional importance with wildlife-specific structures. Work is currently ongoing.

Since 2014, the Federal Roads Office (FEDRO) has established two new directives to develop and maintain green areas of national roads and to show how to reduce the separation effect that national roads have on species.
The actual plan is to finish the refurbishing of wildlife corridors by 2030-35. This is why the partial target is assessed as “Progress towards target but at an insufficient rate”.

Renewable energies

Climate protection and the exit from nuclear power lead to increased production of energy from the sun, biomass, wind and hydraulic power. The exploitation of renewable energies may conflict with the objectives of biodiversity conservation if it causes the destruction or degradation of natural environments.

The energy strategy 2050 plans to build in priority installations which maximize the production of electricity while minimizing the impact on nature. By approving the revision of the Energy Act in May 2017, Swiss voters gave the go-ahead to a first series of measures to restructure the country’s energy

system. The Energy Act and related ordinances are likely to enter into force in early 2018. It is thus too early to assess this partial target.

Sites, building and facilities in federal ownership

The Confederation is in possession of many properties, buildings and facilities, either directly or through participations. The Swiss Federal Department of Defense, Civil Protection and Sport (DDPS), as well as the national roads, with their central lane and embankments, make the Confederation the largest landowner in Switzerland. The Confederation can therefore make an important contribution to the conservation of biodiversity and ecological infrastructure, and must set an example.

In order to best reconcile the respective interests of national defense and nature protection, the DDPS has developed the "Nature, Landscape and Army" program. At large sites such as exercise place, shooting range or air bases, it has referenced the natural values as well as the activities of the army or third parties, identified conflicts of interest, then defined and applied measures to defuse them. Corresponding records are updated periodically or during major changes.

The DDPS has also established an inventory of combat and command structures of ecological value, such as the "Toblerones". These relatively long dam positions, which cross intensive farming areas, play an essential role in linking the various biotopes and therefore deserve to be conserved.

The action plan pilot project (A6.1) that will tackle the issue has not yet started. The partial target is thus assessed as “Progress towards target but at an insufficient rate”.

Production, services/trade and consumption

Without sufficient biodiversity, there can be no dynamic and sustainable economy in the long term. The Confederation seeks to include biodiversity conservation and development in the areas of the production of goods and services, trade and consumption. The Green Economy action plan provides an important contribution to the development of production and consumption patterns respectful of resources and therefore of biodiversity.

To successfully transition to a sustainable and forward-looking economy, the FOEN focuses on the efficient use of resources, the promotion of innovation, better market transparency and the use of economic instruments. The DETEC's Green Economy Action Plan, explicitly recognizes the need for action to promote biodiversity. It was approved by the Federal Council at its meeting on 8 March 2013. The Action Plan includes 26 measures to conserve natural resources, encourage greener consumption and strengthen the circular economy. Implementation of the measures will contribute to the preservation of biodiversity.

In terms of economic development cooperation, Switzerland also has programs that promote sustainable trade and investments in biodiversity products (e.g. food, pharmaceutical and cosmetic ingredients, ornamental flowers), the protection of tropical forests and the establishment of sustainability labels in the international commodity trade, among other things.

The environmental pollution caused by Switzerland has not grown to the same extent as its economy in the last 15 years, which means that resource efficiency has improved. However, is still far from environmentally-friendly resource consumption levels. The partial target is thus assessed as “Progress towards target but at an insufficient rate”.

In conclusion, one target was assessed as “On track to achieve target”, six as “Progress towards target but at an insufficient rate” and one was not assessed. This is why the strategic goal 1 is assessed as “Progress towards target but at an insufficient rate”.

Indicators and other tools used in this assessment

Has your country used indicators to assess progress towards this national target?

Yes

Please provide a list of indicators used for the assessment of this target

Forestry
Area of naturally regenerated woodland
Proportion of dead-wood
Area of forest reserves

Agriculture
Total area reserved for promoting biodiversity
Proportion of near natural ecosystems with overshooting nitrogen load (Nitrogen critical loads)
Swiss Bird Index
Diversity of species community in meadows and pastures

Hunting and fishing
Population of ungulates
Yield of professional fishing

Tourism, sport and leisure
-

Transport
Wildlife corridors

Renewable energies
-

Sites, building and facilities in federal ownership
-

Production, services/trade and consumption
Biodiversity footprint
Total material requirement

Please describe any other tools or means used for assessing progress.
An assessment of projects, action plans and measures was done to assess the progress of each partial target.

Relevant websites, web links and files (Please use this field to indicate any relevant websites, web links or documents where additional information related to this assessment can be found).
Objectifs environnementaux pour l'agriculture
https://www.bafu.admin.ch/bafu/fr/home/themes/biodiversite/publications/publications-biodiversite/objectifs-environnementaux-agriculture.html

Energy Strategy 2050
https://www.uvek.admin.ch/uvek/en/home/energy/energy-strategy-2050.html

Passage à faune
https://www.bafu.admin.ch/bafu/fr/home/themes/biodiversite/info-specialistes/mesures-de-conservation-de-la-biodiversite/infrastructure-ecologique/passages-a-faune.html

Consommation et production respectueuses de la biodiversité
https://www.bafu.admin.ch/bafu/fr/home/themes/biodiversite/info-specialistes/mesures-de-conservation-de-la-biodiversite/utilisation-durable-de-la-biodiversite/consommation-et-production-respectueuses-de-la-biodiversite.html

Level of confidence of the above assessment
Based on partial indicator information and expert opinion

Please provide an explanation for the level of confidence indicated.
Indicators were available for most of the partial targets. For those lacking indicators, an assessment of projects, action plans and measures was done to assess the progress of the target.

Adequacy of monitoring information to support assessment
Monitoring related to this target is partial (e.g. only covering part of the area or issue)

3.2 Object of the assessment: Develop ecological infrastructure, Strategic Goal 2

Category of progress towards the implementation of the selected target
Progress towards target but at an insufficient rate

Additional information (Please provide information on the evidence used in the assessment of this target, drawing upon relevant information provided in section II, including obstacles in undertaking the assessment):
The Strategic Goal 2 can be separated in three partial targets.
Increase of protected area.
The largest modification of the areas designed under protection since 2012 occurred in September 2017 when the Federal Council approved the revision of the biotopes of national importance. The total area of the inventories of national importance has been expanded by nearly 16 000 hectares and now represents 2.2% of the Swiss territory. The new objects were often already protected at the regional level or by private law. They will now benefit from the uniform protection and better conservation of the federal inventories. The increase in area concerns in particular amphibian breeding sites and alluvial zones. These sites and their fauna and flora are among the most threatened objects and species in Switzerland. The surface of biodiversity designated area covers now about 12.5% of the Swiss national territory. Given the current political context, it is unlikely that biodiversity designated areas will cover 17% of the Swiss territory in 2020, this is why this partial target is assessed as “Progress towards target but at an insufficient rate”

Ecological connection areas
The purpose of ecological connection areas is to link the protected areas to each other and to establish connections with the protected areas in neighboring countries in such a way that species can spread and ecosystems are conserved. Moreover, habitats should also be enabled to adapt to climate-related changes. Ecological connection areas have not been formerly defined. In agriculture, the areas reserved for promoting biodiversity are often (>70%) part of a network. Yet, the status report on the environmental objectives for agriculture published by the FOEN and FOAG states that the connectivity objective will not be met as there still exist deficits in the connectivity and permeability of areas. The Waters Protection Act, which was revised in 2011, provides for the restoration of the natural functions of streams, rivers and lakes. In the next 80 years, approximately 4,000 kilometres of river and stream courses will need to be revitalised. The partially implemented measures also improve flood protection in many cases and create attractive recreational spaces. There are roughly 1,500 withdrawal sites used for hydropower in Switzerland. About half of these must be remediated due to inadequate residual flow quantities. While all those efforts need to be saluted, they are not sufficient to meet the partial target. This is why it is assessed as “Progress towards the target but at an insufficient rate”.

State threatened habitats
Experts estimate that 79 % of raised bogs, 30 % of fens, 30 % of alluvial zones, 25 % of amphibian spawning sites and 20 % of dry meadows and pastures of national importance need to be remediated. It is also important for biotopes to be properly maintained. Under federal law, cantons must ensure that protection requirements for landowners and long-term maintenance of national biotopes are guaranteed. A FOEN survey of the cantons in 2014 shows that the legal protection and maintenance of only 58 % of the inventoried sites were guaranteed. Implementation efforts for mires are the most advanced: 94 % of raised bogs and 79 % of fens now have protected status and a maintenance plan. However, the statutory buffer zones are insufficient in many places. According to the cantonal survey, 11 % of fens and 7 % of raised bogs still do not have sufficient nutrient buffer zones. In addition, there are no protection requirements for landowners or maintenance agreements for 16 percent of alluvial zones, 5 percent of

amphibian spawning sites and 29 percent of dry meadow and pasture sites. Management contracts are lacking for dry meadows and pastures, especially in summering pastures. The main reasons for the meagre biotope protection situation are the inadequate financial and human resources of the Confederation and cantons. Biotope protection takes a great deal of effort and is expensive. The negotiations for a maintenance contract are often long and complicated. Another hurdle is the high cost of maintenance since the objects are often located in difficult terrain or on steep slopes. These tasks can only be fulfilled if the available resources match the size and diversity of the natural habitats. Furthermore, more financial resources are required than previously. The FOEN estimates that the necessary maintenance measures require twice the amount of funds than are currently used. One-time investments are also required to enhance and revitalise sites. In 2016, the Federal Council decided to allocate funds to take urgent improvement and revaluation measures in the biotopes of national importance during the next four years. Those measures will improve the quality of those threatened habitats. It is yet unlikely that those measures will already have taken effect in 2020 and this is why the partial target is assessed as “Progress towards the target but at an insufficient rate”.
The three partial targets are all assessed as “Progress towards the target but at an insufficient rate”, this is why the same assessment is given to the Strategic Goal.

Indicators and other tools used in this assessment
Has your country used indicators to assess progress towards this national target?
Yes

Please provide a list of indicators used for the assessment of this target
Statistics of biodiversity designated areas
Indicators of the biological state, and level of implementation of the biotopes of national importance

Please describe any other tools or means used for assessing progress.
The preliminary results of the program “Monitoring the Effectiveness of Habitat Conservation in Switzerland” were consulted to make this assessment.

Relevant websites, web links and files (Please use this field to indicate any relevant websites, web links or documents where additional information related to this assessment can be found).
Monitoring the Effectiveness of Habitat Conservation in Switzerland
http://www.wsl.ch/biotopschutz/index_EN

Indicators:
Aires protégées
Biotopes d’importance nationale

Level of confidence of the above assessment
Based on comprehensive indicator information

Please provide an explanation for the level of confidence indicated.
Data and indicators are available for each partial target. All indicators have been updated recently.

Adequacy of monitoring information to support assessment
Monitoring related to this target is adequate

3.3 Object of the assessment: Improve the conservation status of national priority species, Strategic Goal 3

Category of progress towards the implementation of the selected target
Progress towards target but at an insufficient rate

Additional information (Please provide information on the evidence used in the assessment of this target, drawing upon relevant information provided in section II, including obstacles in undertaking the assessment):
The Strategic Goal 3 can be separated in two partial targets.

Threatened species

The FOEN's species promotion concept assumes that all species should be basically conserved in their natural home range. Specific promotional measures focus on species which are endangered in Switzerland, for which Switzerland bears particular responsibility at the international level, and which require urgent measures for their conservation. The basis for these measures is the list of national priority species. It currently includes around 3,600 species and is used as a tool to promote species and habitats. There are four priority levels. Accordingly, around 10 % of these species are given very high priority (priority 1), 20 % high priority (priority 2), 30 % middle priority (priority 3) and 40 % moderate priority (priority 4). The list is currently updated. The Swiss species promotion concept describes how national priority species should be conserved.

The FOEN has released Red Lists for 27 organism groups in Switzerland. To date, one-fourth of the 46,000 known species have been assessed for the Red Lists. 36 % of these species are threatened – this percentage is significantly higher than the average in OECD countries. 3 % (255) of the surveyed species are "extinct in Switzerland". 10 % of the species are considered "near threatened" (NT) and require special attention because there is a risk that they could be moved to a higher category of threat in the future. The percentage of endangered species varies by organism group. The Swiss Bird Index for breeding bird species on the Red List has shown a negative trend since 1990. However, in recent years, this sub-index seems to be stabilising slightly. The coming years will determine whether the trend can be effectively reversed for breeding birds. While progress is being made regarding the Swiss species promotion concept, it is yet insufficient to reach the partial target by 2020. This is why the partial target is assessed as "Progress towards the target but at an insufficient rate".

Invasive alien species

In May 2016, the Federal Council adopted the Swiss Invasive Alien Species Strategy. It defines the principles, goals and measures for prevention and control of these species. A report on alien species in Switzerland published by the FOEN lists over 800 established alien species and provides data sheets for around 100 problem species. The lists are a tool for various public and private actors. They help them make decisions and set priorities in the prevention and control of invasive neophytes. The Confederation's Swiss crayfish action plan is the first implementation tool to be published that administers the conservation of native species and the control of alien crayfish species. The adoption of the Swiss Invasive Alien Species Strategy is a big step forward in the direction of the partial target. The implementation of the measures is currently happening. It is however too early to assess whether the partial target will be reached by 2020.

With one partial target assessed as "Progress towards the target but at an insufficient rate" and another that is not yet measurable, the Strategic Goal 3 is assessed as "Progress towards the target but at an insufficient rate".

Indicators and other tools used in this assessment

Has your country used indicators to assess progress towards this national target?

Yes

Please provide a list of indicators used for the assessment of this target

Red list indicators
Swiss Bird Index
Invasive Alien Species indicator

Please describe any other tools or means used for assessing progress.

Relevant websites, web links and files (Please use this field to indicate any relevant websites, web links or documents where additional information related to this assessment can be found).

Conservation des espèces

https://www.bafu.admin.ch/bafu/fr/home/themes/biodiversite/info-specialistes/mesures-de-conservation-de-la-biodiversite/protection-et-conservation-des-especes/conservation-des-especes.html

Swiss Invasive Alien Species Strategy
https://www.bafu.admin.ch/dam/bafu/fr/dokumente/biodiversitaet/fachinfo-daten/strategie_der_schweizzuinvasivengebietsfremdenarten.pdf.download.pdf/strategie_de_la_suisserelativeauxespecesexotiquesenvahissantes.pdf

Espèces exotiques envahissantes
https://www.bafu.admin.ch/bafu/fr/home/themes/biodiversite/info-specialistes/mesures-de-conservation-de-la-biodiversite/protection-et-conservation-des-especes/especes-exotiques-envahissantes.html

Indicators:
Listes rouges
Swiss Bird Index
Espèces exotiques envahissantes

Level of confidence of the above assessment
Based on comprehensive indicator information

Please provide an explanation for the level of confidence indicated.
Data and indicators are available for each partial target. All indicators have been updated recently. Many species of national priority are not assessed by the existing monitoring schemes in Switzerland, this is why the monitoring related to the target is assessed as partial.

Adequacy of monitoring information to support assessment
Monitoring related to this target is partial (e.g. only covering part of the area or issue)

3.4 Object of the assessment: Conserve and promote genetic diversity, Strategic Goal 4

Category of progress towards the implementation of the selected target
Progress towards target but at an insufficient rate

Additional information (Please provide information on the evidence used in the assessment of this target, drawing upon relevant information provided in section II, including obstacles in undertaking the assessment):
The Strategic Goal 4 can be separated in three partial targets.

Crop plants and agricultural livestock
The Confederation is committed to protecting and promoting genetic diversity in crop plants by implementing the “National Action Plan for the Conservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture” (NAP-PGREL). As for animal genetic resources, a concept has been developed to conserve agricultural livestock. The Confederation supports and promotes various measures and projects to conserve and sustainably use genetic diversity in forests, such as the implementation of near-natural forestry with natural regeneration. Specific incentives for the *in situ* conservation of fodder plants are currently being assessed in Switzerland and it is planned to integrate them into the future agricultural policy. Those efforts will protect the genetic diversity of fodder crops in extensive grassland and pastures. In order to develop permanent grassland in areas reserved for promoting biodiversity, the Direct Subsidies Ordinance recommends preferring local hay flower or hay seeds obtained by threshing to standardized seed mixtures. The "Regio Flora" project provides farmers with local seeds since 2014. As for microorganisms, the Confederation contributes to the development of a national collection of microorganisms. The FOEN also supports the “Swiss Barcode of Life” (SwissBOL) network, whose goal is to record Switzerland's biodiversity through DNA barcodes. This knowledge is used for national monitoring of biological diversity and, by extension, the improvement of protection strategies. The planned and effective measures allow an evolution in the desired direction for

the genetic diversity of cultivated plant species and livestock but remain marginal and possibly insufficient to reach the partial target by 2020. This is why the partial target is assessed as “Progress towards the target but at an insufficient rate”.

Nagoya Protocol

Switzerland has ratified the Nagoya Protocol on 11 July 2014. Its implementation in the Natural and Cultural Heritage Protection Act came into force for Switzerland on October 12, 2014. The amendments in the Natural and Cultural Heritage Protection Act are published in the annex of the Federal decree on the approval of the Nagoya Protocol on access to genetic resources and the fair and equitable sharing of benefits arising from their utilisation (Nagoya Protocol) and its implementation (Natural and Cultural Heritage Protection Act). The legal amendments are available in a non-official English translation.

The Federal Council passed the Nagoya Ordinance on 11 December 2015. Together with the Nagoya Protocol and the provisions in the Federal Act on the Protection of Nature and Cultural Heritage it forms the basis for the legal use of genetic resources from other countries. The ordinance also regulates the access to genetic resources in Switzerland. The Nagoya Ordinance substantiates the provisions in the Nature and Cultural Heritage Act for the implementation of the Nagoya Protocol in Switzerland and thus ensures greater legal certainty. It came into force on 1st February 2016 hence reaching the partial target ahead of time.

Wild plants and animals

Figures are scarce on the development and state of genetic diversity in wild plants and animals in Switzerland because there are no appropriate monitoring programmes. However, it must be assumed that the population loss and decline experienced by many species due to the destruction, damage and fragmentation of their habitats has caused a loss of genetic diversity. The large number of species on the Red Lists may be a clear sign that genetic diversity is steadily disappearing. Researchers are acting on the assumption that climate change is also a threat to the genetic diversity within species. This overall explain why this partial target is assessed negatively.

With one partial target assessed as “Progress towards target but at an insufficient rate”, one assessed as reached ahead of time and one assessed negatively, the Strategic Goal 4 is assessed as “Progress towards target but at an insufficient rate”.

Indicators and other tools used in this assessment

Has your country used indicators to assess progress towards this national target?

Yes

Please provide a list of indicators used for the assessment of this target

Genetic diversity of crops and livestock

Please describe any other tools or means used for assessing progress.

Projects, action plans and measures were reviewed to assess the progress of the target.

Relevant websites, web links and files (Please use this field to indicate any relevant websites, web links or documents where additional information related to this assessment can be found).

Diversité génétique
https://www.bafu.admin.ch/bafu/fr/home/themes/biodiversite/info-specialistes/mesures-de-conservation-de-la-biodiversite/conservation-de-la-diversite-genetique.html

Nagoya Protocol
https://www.bafu.admin.ch/bafu/en/home/topics/biotechnology/info-specialists/nagoya-protocol.html

Level of confidence of the above assessment

Based on comprehensive indicator information

Please provide an explanation for the level of confidence indicated.

While a monitoring of genetic diversity in wild species is still not existent, enough knowledge exist to assess the Strategic Goal with a high confidence.

Adequacy of monitoring information to support assessment
Monitoring related to this target is partial (e.g. only covering part of the area or issue)

3.5 Object of the assessment: Evaluate financial incentives, Strategic Goal 5

Info: CBD NOTIFICATION No. 2013-050
"Submission of Information for the Review of Implementation of the Strategy for Resource Mobilization"

Category of progress towards the implementation of the selected target
~~on track to exceed target~~
on track to achieve target
~~progress towards the target but at an insufficient rate~~
~~no significant change~~
~~moving away from target~~
~~unknown~~

Switzerland is regularly evaluating the impacts of its incentives on biodiversity. For example, during the elaboration of the biodiversity action plan, FOEN commissioned a study on existing financial incentives (i.e. subsidies) having negative impacts on biodiversity, published in 2013.[1] This study identified a set of incentives with potentially negative effects on biodiversity at the national level and recommended further work on specific issues such as the support of touristic infrastructure.

Existing incentives will be further analysed, both in the context of the implementation of the Biodiversity Action plan and in the context of the further development of the agricultural policy.

Additional information (Please provide information on the evidence used in the assessment of this target, drawing upon relevant information provided in section II, including obstacles in undertaking the assessment):
Some progress in reforming incentives was achieved during the last years in the agricultural sector. For instance, direct payments for husbandry were phased out. These payments were an incentive for farmers to increase husbandry, leading to an excess of manure on the one hand and an increase in feed imports on the other.

Other developments concern the proposed phasing out of export subsidies (“Schoggigesetz”) and their replacement by other measures.

There remains room for further evaluation such as on the contributions for ensuring the food supply, or subsidies on the improvement of structures

Indicators and other tools used in this assessment

Has your country used indicators to assess progress towards this national target?
-
Please provide a list of indicators used for the assessment of this target
-
Please describe any other tools or means used for assessing progress.
-
Relevant websites, web links and files (Please use this field to indicate any relevant websites, web links or documents where additional information related to this assessment can be found).
http://www.ub.unibas.ch/digi/a125/sachdok/2014/BAU_1_6291443.pdf

[1] http://www.ub.unibas.ch/digi/a125/sachdok/2014/BAU_1_6291443.pdf

Level of confidence of the above assessment
~~Based on comprehensive indicator information~~
~~Based on partial indicator information and expert opinion~~
Based on expert opinion

Please provide an explanation for the level of confidence indicated.

Adequacy of monitoring information to support assessment
~~Monitoring related to this target is adequate~~
Monitoring related to this target is partial (e.g. only covering part of the area or issue)
~~No monitoring system in place~~
~~Monitoring is not needed~~

3.6 Object of the assessment: Record ecosystem services, strategic goal 6

Category of progress towards the implementation of the selected target
Progress towards the target but at an insufficient rate

Additional information (Please provide information on the evidence used in the assessment of this target, drawing upon relevant information provided in section II, including obstacles in undertaking the assessment):
The Confederation commissioned the compilation of a catalogue of 23 ecosystem services that are of particular benefit to the Swiss population as well as proposals for indicators for the individual services. The methods developed can be used to further develop the indicators and also for similar studies in other countries. The comprehensive conversion of ecosystem services into sums of money will hardly be feasible from the Swiss perspective. Some Cantons (Geneva) are currently calculating and implementing the indicators at their scale, but since the publication of the catalogue of ecosystem services and indicators, no further national project was launched.

The MONET indicator system developed by the Swiss Federal Statistical Office jointly with the Federal Office for the Environment (FOEN), the Federal Office for Spatial Development (ARE) and the Swiss Agency for Development and Cooperation (SDC) measures whether Switzerland is on the road to sustainable development. This contributes partially to the Strategic Goal.
The Biodiversity Action plan adopted by the Swiss government includes a measure that aims at supporting decision makers to better include ecosystem services at stake in their decisions. Indicators will be a crucial ingredient of this measure. As the measure has not yet been implemented, the progress of the Strategic Goal is assessed as “Progress towards the target but at an insufficient rate”.

Indicators and other tools used in this assessment
Has your country used indicators to assess progress towards this national target?
No

Please provide a list of indicators used for the assessment of this target
-

Please describe any other tools or means used for assessing progress.
A review of the work on ecosystem services in Switzerland was done.

Relevant websites, web links and files (Please use this field to indicate any relevant websites, web links or documents where additional information related to this assessment can be found).

Indicators for Ecosystem Goods and Services (Extended summary)
https://www.bafu.admin.ch/bafu/en/home/topics/economy-consumption/economy-and-consumption--publications/publications-economy-and-consumption/indicators-ecosystem.html

Econcept / WSL (2013): Ökosysteme und ihre Leistungen erfassen und räumlich darstellen

https://www.econcept.ch/uploads/media/Schlussbericht_Oekosysteme_Leistungen_erfassen_raeumlich-darstellen.pdf

ETHZ / WSL (2014): http://www.plus.ethz.ch/de/plus-news/2015/03/-machbarkeitsabklaerung-mapping-von-oekosystemleistungen-im-rahmen-der-biodiversitaetsstrategie.html

Tool for spatial practitioners http://oesl-check.ethz.ch/

The MONET indicator system
https://www.bfs.admin.ch/bfs/en/home/statistics/sustainable-development/monet.html

Level of confidence of the above assessment
Based on expert opinion

Please provide an explanation for the level of confidence indicated.
No process indicator is available for ecosystem services.

Adequacy of monitoring information to support assessment
Monitoring is not needed

3.7 Object of the assessment: Generate and disseminate knowledge, Strategic Goal 7

Category of progress towards the implementation of the selected target
Progress towards target but at an insufficient rate

Additional information (Please provide information on the evidence used in the assessment of this target, drawing upon relevant information provided in section II, including obstacles in undertaking the assessment):

Most of the Swiss population is familiar with the term “biodiversity”. This is shown by a survey conducted in 2013. Two-thirds of the respondents had heard or read the term “biodiversity” at least once. The necessity of conserving biodiversity is unchallenged. The main reasons given by respondents for this were “duty to future generations”, “connection” to nature, its “beauty” and a "moral obligation". Surprisingly, the Swiss rate the state of native biodiversity too positively. In surveys on the awareness and attitudes of the Swiss population towards biodiversity, a large majority of the respondents estimates Switzerland’s biodiversity to be in a fairly or very good state, contrasting with scientific findings such as the Red Lists. Yet, the share of people estimating biodiversity to be in a good state decreased between 2013 and 2016 showing an increasing awareness to the state of biodiversity. Moreover, more than 40% of the population agrees to pay more for products that have reduced impact towards biodiversity.

The Strategic Goal 7 can be separated in four partial targets.
Information and awareness
Since the international year of biodiversity in 2010, no official national awareness campaign was launched. The FOEN published during the last years several reports on the state of biodiversity or related to biodiversity topics, but the publication rate has been relatively constant.

In order to make purchasing decisions well informed regarding the preservation of resources, consumers need well-founded, relevant and comprehensive environmental information that encompasses the entire product lifecycle. This is why the FOEN is in charge, under the Green Economy Action Plan adopted by the Federal Council in 2013, of carrying out baseline studies on improving the environmental information given on products. Moreover, the FOEN helps to supplement the data bases available, for example by investing in the Ecoinvent data bank. It contributes also to the improvement of methods of impact assessment, on which the establishment of environmental information is based. At the request of the actors concerned, the FOEN also supports private initiatives in this field.

Despite the several actions undertaken, the efforts are not yet sufficient to reach the partial target by 2020. This is why the partial target is assessed as “Progress towards target but at an insufficient rate”.

Education and outreach
The FOEN supports training projects at the national and cantonal level as well as professional education to develop sustainability skills in natural resources use as well as environmental compliance in companies. The national data centers for biodiversity (Infospecies) regularly organize courses on species identification, thus safekeeping the number of species experts. Those intermittent efforts are not sufficient to reach the partial target, which is thus assessed as “No significant change”.

Research
Currently, 245 research groups are working on topics related to biodiversity in Switzerland. While the research reaches high standards, there is nevertheless a lack of coordination between research groups and institutions. Better networks are also needed to allow exchanges between scientists of different horizons. Because the situation regarding research is very similar to that of the previous years, the partial target is assessed as “No significant change”.

Knowledge exchange between stakeholders
Research on biodiversity present thematic cross-references with other environmental priority areas. The current Master Plan for Environmental Research clarifies the scientific issues affecting several sectors within the Federal Office for the Environment. In addition, there are many issues that also concern areas of competence of other federal offices, such as energy, mobility, agriculture, health and development cooperation. It is important that conflicts of objectives between environmental themes and the tasks of other federal departments result in a weighing of interests based on current research findings that take into account all dimensions of the problem. The master plan provides an overview of the linkages to the tasks and themes of other federal institutions and services, and identifies the cross-cutting themes to be addressed in collaboration with these actors.

The Swiss Biodiversity Forum, founded in 1999, is the scientific competence center for biodiversity in Switzerland. It aims at supporting the research of biodiversity and facilitates the co-operation of scientists and policy-makers in the administration department, in politics, economy and society.

Despite the above-mentioned programs, the efforts are not yet sufficient to reach the partial target by 2020. This is why the partial target is assessed as “Progress towards target but at an insufficient rate”.

With two partial targets assessed as “Progress towards target but at an insufficient rate”, two assessed as “No significant change” and given the positive results of the surveys on population awareness, the Strategic Goal 7 is assessed as “Progress towards target but at an insufficient rate”.

Indicators and other tools used in this assessment
Has your country used indicators to assess progress towards this national target?
Yes

Please provide a list of indicators used for the assessment of this target
Biodiversity awareness
Attitude towards biodiversity

Please describe any other tools or means used for assessing progress.
Further than the indicator, an assessment of the current project on biodiversity knowledge was undertaken.

Relevant websites, web links and files (Please use this field to indicate any relevant websites, web links or documents where additional information related to this assessment can be found).
Informations environnementales sur les produits
https://www.bafu.admin.ch/bafu/fr/home/themes/economie-consommation/info-specialistes/consommation-durable/informations-environnementales-sur-les-produits.html

Master Plan for Environmental Research

https://www.bafu.admin.ch/bafu/en/home/topics/education/environmental-research/master-plan-for-environmental-research.html

Level of confidence of the above assessment
Based on partial indicator information and expert opinion

Please provide an explanation for the level of confidence indicated.
The two indicators available in Switzerland are describing the state of biodiversity awareness in the Swiss population. Expert opinion was required to assess the progress of the relevant processes.

Adequacy of monitoring information to support assessment
Monitoring related to this target is partial (e.g. only covering part of the area or issue)

3.8 Object of the assessment: Promote biodiversity in settlement areas, Strategic Goal 8

Category of progress towards the implementation of the selected target
Progress towards target but at an insufficient rate

Additional information (Please provide information on the evidence used in the assessment of this target, drawing upon relevant information provided in section II, including obstacles in undertaking the assessment):
The growing population, desire for more living space, necessary densification and greater mobility increase the pressure on biodiversity in settlement areas. Meanwhile, 60 percent of the settlement area and 4.7 percent of the entire surface area of Switzerland is sealed. Typical habitats for settlement areas such as fallow land, strips of pioneer vegetation, tree lined avenues and old, near-natural garden spaces are noticeably disappearing. At over 80 percent, the percentage of structure-lined and culverted waterbodies in the settlement area is nearly four times higher than Switzerland's national average. In the meantime, 26 percent of all habitat types in the settlement area are considered threatened.

According to the Biodiversity Monitoring program (BDM), settlements have the highest percentage of surveyed area where absolutely no vascular plants, moss and mollusks have been found. These areas are mostly sealed or “dead” green spaces such as sports fields or football pitches. Increasing soil sealing may also be the main reason that the BDM observed a decline in the numbers of vascular plant species between 2004 and 2015.

The artificial light used in settlements also has negative impacts. Between 1994 and 2012, light emissions more than doubled in Switzerland. The area with nocturnal darkness decreased from around 30 % (1994) to 20 % (2012). Not a single square meter of the Central Plateau has had absolute darkness at night since 1996.

The GRÜNSTADT SCHWEIZ project developed a sustainable urban green space label. The awarding of this label is meant to enhance the image of a city and be a symbol of an innovative and long-term green space policy. GRÜNSTADT SCHWEIZ is supported by the Association of Swiss City Gardens and Parks Departments (VSSG).

Several Swiss cities have also developed concepts to curb the problem of high light emission levels: Zurich, Lucerne, Basel and Geneva are working toward environmentally-compatible night lighting in their municipal territories with a plan known as the “Plan Lumière”.

The Strategic Goal 8 can be separated in three partial targets (the two first are joined because measures undertaken are similar).
Connection of habitats in settlement areas and Species conservation in settlement areas
With the support of the authorities, many green spaces in Swiss cities have been ecologically enhanced or redesigned in the last 20 years. For example, the percentage of ecologically valuable area in the city of Zurich is 15 %. The city of Bern’s biodiversity concept is the basis of its urban development approach, which also creates and conserves living spaces and effectively connected habitats for animals and

plants. The city of Geneva uses a large number of instruments such as inventories, laws, action plans and concrete projects to protect and promote biological diversity.
A positive evolution can be observed, but the measures taken to conserve habitat and species in settlement areas remain very heterogeneous. This is why both partial targets are assessed as “Progress towards target but at an insufficient rate”.

Ability of the population to experience nature locally
The land use statistics of Switzerland measure only 6.4% (state 2004-09) of green spaces and relaxing area within settlement area. The square-meter proportion per habitant slightly increased since the 1980s (5.7% in 1979-85). While the evolution is positive, still too few of the green spaces and relaxing areas are of a sufficiently high biodiversity quality (see above) to allow the population to experience nature locally. This is why the partial target is assessed as “Progress towards target but at an insufficient rate”.

The insufficient state of biodiversity in settlement areas and all three partial targets being assessed as “Progress towards target but at an insufficient rate” are the reason why the Strategic Goal 8 is also assessed as “Progress towards target but at an insufficient rate”.

Indicators and other tools used in this assessment
Has your country used indicators to assess progress towards this national target?
Yes

Please provide a list of indicators used for the assessment of this target
Swiss Bird index settlements
BDM results on settlement areas
Built area per capita
Please describe any other tools or means used for assessing progress.
A review of the programs undertaken at the national and local level was undertaken.

Relevant websites, web links and files (Please use this field to indicate any relevant websites, web links or documents where additional information related to this assessment can be found).
Swiss Bird Index
http://www.vogelwarte.ch/downloads/files/projekte/entwicklung/zustandsbericht%202016/SBI_2015_low.pdf
Ville verte Suisse
http://www.gruenstadt-schweiz.ch/fr/
Land use statistics
https://www.bfs.admin.ch/bfs/fr/home/statistiques/espace-environnement/utilisation-couverture-sol/surfaces-habitat-infrastructure.html

Level of confidence of the above assessment
Based on comprehensive indicator information

Please provide an explanation for the level of confidence indicated.
The BDM monitoring program provides indicator on the diversity of plant, snails and mosses in settlement areas. The population of birds living in settlement areas is monitored by the Swiss Ornithological Institute in Sempach. The land use statistics of the past 30 years are available to measure the evolution of settlement areas.
Adequacy of monitoring information to support assessment
Monitoring related to this target is adequate

3.9 Object of the assessment: Strengthen international commitment, Strategic Goal 9

Category of progress towards the implementation of the selected target
Progress towards target but at an insufficient rate

Additional information (Please provide information on the evidence used in the assessment of this target, drawing upon relevant information provided in section II, including obstacles in undertaking the assessment):

Switzerland would like to continue its commitment to the area of biodiversity to ensure that the various biodiversity-related agreements are effectively implemented. This involves strengthening synergies and ensuring the coherent design of the implementation of the CBD and its international instruments and finance mechanism.

Switzerland demands and supports cooperation in the area of biodiversity. In addition to its work in the formal negotiations (Conferences of the Parties, scientific sub-committees), Switzerland is also involved informally through the staging of meetings and joint events with other conventions.

Switzerland supports the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) established in 2012. The IPBES shall assume a central mediation role between science and politics and inform political decision-makers and international forums about the state of and changes in biodiversity and about the necessary responses. The Technical Support Unit (TSU) for the regional assessment of biodiversity and ecosystem services in Europe and Central Asia has been located at the University of Bern since 2015 and receives financial support from Switzerland.

On the 6 July 2017, The Federal Council strengthened the work undertaken since 2004 for a coordinated flow of data at the national level by deciding that Switzerland would become a full member of the Global Biodiversity Information Facility (GBIF). The GBIF Switzerland initiative aims at honoring the commitments entered into by Switzerland by the ratification of the Memorandum of Understanding of GBIF.

Switzerland is one of the first signatory country of CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora), which secretariat is located in Geneva. Switzerland is one of the first signatory country of CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora), which secretariat is located in Geneva. As Depositary Government, Switzerland assumes an important role in the functioning of the Convention. It is further very active in the Scientific Committees as regional representatives for Europe and as chair of the Animals Committee. It promotes the effective implementation of CITES and its role in assuring the sustainable use of biodiversity. Switzerland provides financial (in 2018 CHF 600,000 and from 2019 CHF 1 million annually) and other support for the activities and tasks associated with the agreement.

Switzerland is committed to conserve and sustainably use agrobiodiversity, and to promote coherency and mutual supportiveness among the relevant international instruments. This is done though Switzerland’s involvement with the CBD, but also through its strong engagement with the Food and Agriculture Organization of the United Nations (FAO), the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), the Commission on Genetic Resources for Food and Agriculture (CGRFA), the Sustainable Food Systems Programme (SFS) and the Global Soil Partnership.

The ordinance on controlling the lawful origin of imported marine fishery products came into force on 1 March 2017. This new ordinance is designed to ensure that only fishery products of lawful origin – i.e. no products from illegal, unreported and unregulated fishing activities – are imported into Switzerland.

Switzerland supports initiatives that lead to greater consideration of biodiversity in the infrastructure plans of developing countries and advocates in multilateral panels and funds, particularly in the GEF, for more ample funding for the protection of biological diversity.

The international commitment of Switzerland is strong, and was strengthened during the last years as requested by the Strategic Goal 9. The new ordinance on controlling the lawful origin of imported marine fishery, Switzerland’s commitment for CITES and GBIF are all especially valuable contributions. Nevertheless, more efforts are needed to fulfill all objectives of the Strategic Goal 9. The progress towards the Strategic Goal 9 is thus assessed as “Progress towards target but at an insufficient rate”

Indicators and other tools used in this assessment
Has your country used indicators to assess progress towards this national target?
No

Please provide a list of indicators used for the assessment of this target
-
Please describe any other tools or means used for assessing progress.
A review of the international involvement of Switzerland has been made to assess the progress towards the Strategic Goal 9.

Relevant websites, web links and files (Please use this field to indicate any relevant websites, web links or documents where additional information related to this assessment can be found).
Swiss Information System Biodiversity
http://www.sib.admin.ch/en/index.html

Biodiversity: International affairs
https://www.bafu.admin.ch/bafu/en/home/topics/biodiversity/info-specialists/biodiversity--international-affairs.html

Level of confidence of the above assessment
Based on expert opinion

Please provide an explanation for the level of confidence indicated.
No process indicator was available to assess the progress towards the Strategic Goal 9.
Adequacy of monitoring information to support assessment
No monitoring system in place

3.10 Object of the assessment: Monitor changes in biodiversity, Strategic Goal 10

Category of progress towards the implementation of the selected target
Progress towards target but at an insufficient rate

Additional information (Please provide information on the evidence used in the assessment of this target, drawing upon relevant information provided in section II, including obstacles in undertaking the assessment):

The Confederation uses several monitoring programs to observe various areas of the environment, such as soil, bodies of water, landscape, air and forest. Four monitoring programs are specifically focused on Switzerland's biodiversity:

- Biodiversity Monitoring Switzerland (BDM)
- Agricultural species and habitats monitoring (ALL-EMA)
- Monitoring the effectiveness of habitat conservation in Switzerland (WBS)
- Red Lists

Swiss hunting and fishing statistics, the Swiss breeding bird atlas, the Swiss National Forest Inventory, the biological studies of the national soil monitoring program, the national observation of surface water quality all contribute to the recording of biodiversity.

The collaboration between the national data and information centers has recently been materialized under the Info Species association. Info Species is the Swiss Species Information Center. It is the association of data centers and information on flora, fauna, mushrooms, mosses and lichens. The aim of the association is to promote collaboration between the centers, the State, the cantons and other public or private actors involved in the conservation of species.

On the 6 July 2017, The Federal Council strengthened the work undertaken since 2004 for a coordinated flow of data at the national level by deciding that Switzerland would become a full member of the Global Biodiversity Information Facility (GBIF). The GBIF Switzerland initiative aims at honoring the

commitments entered into by Switzerland by the ratification of the Memorandum of Understanding of GBIF. Its objective is simple, but quite ambitious: in the long term, to register all specimens of botanical, paleontological and zoological collections of Museums, conservatories and botanical gardens in Switzerland. Observational data of all faunistic, floristic and cryptogamic databases are to be collected and the compilation made accessible via a unique national platform, the Swiss GBIF node.

The majority of the monitoring programs base their assessments on species data. There is thus a gap regarding the monitoring of ecosystem and gene diversity. Given the financial context of the Swiss Confederation, it is unlikely that those gaps will be filled by 2020.

Synergies are increasingly created between monitoring program to harmonize the indicators across programs and to better valorize the data available. To this aim, two new expert groups bringing together the monitoring programs, national and cantonal officials as well as scientists were created in 2016 and 2017.

While synergies are created both at the national and international level, gaps are still present in the Swiss monitoring programs. As it is unlikely that those gaps will be filled by 2020, the Strategic Goal 10 is assessed as “Progress towards target but at an insufficient rate”

Indicators and other tools used in this assessment
Has your country used indicators to assess progress towards this national target?
No
Please provide a list of indicators used for the assessment of this target
-
Please describe any other tools or means used for assessing progress.
A survey of the monitoring programs and biodiversity data in Switzerland was made to assess the progress towards the target.

Relevant websites, web links and files (Please use this field to indicate any relevant websites, web links or documents where additional information related to this assessment can be found).
Biodiversité: programmes de surveillance
https://www.bafu.admin.ch/bafu/fr/home/themes/biodiversite/etat/biodiversite---programmes-de-surveillance.html

Global Biodiversity Information Facility Switzerland
http://www.gbif.ch/

Info Species
http://www.infospecies.ch/fr/

Level of confidence of the above assessment
Based on expert opinion

Please provide an explanation for the level of confidence indicated.
No indicators are available regarding the Strategic Goal 10

Adequacy of monitoring information to support assessment
No monitoring system in place

4 Section IV. Description of national contribution to the achievement of each global Aichi Biodiversity Target

4.1 Aichi Biodiversity Target 1. Awareness increased

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:

Most of the Swiss population is familiar with the term “biodiversity”. This is shown by a survey conducted in 2016. 74% of the respondents had heard or read the term “biodiversity” at least once. The necessity of conserving biodiversity is unchallenged. The main reasons given by respondents for this were “duty to future generations”, “connection” to nature, its “beauty” and a "moral obligation". Ecosystem services and biodiversity are generally recognized as the very base of our livelihoods with 80% (2015) of respondents mentioning, among others, economic reasons for the conservation of biodiversity. As in 2013, the Swiss rate the state of native biodiversity too positively. 61 % of the respondents assume that the state of biodiversity is “fairly good” (52 %) or even “very good” (9 %). This rating is quite different from the actual state of biodiversity. Yet, the share of people estimating biodiversity to be in a good state decreased between 2013 and 2016 showing an increasing awareness to the state of biodiversity. Moreover, 86% of the population agrees (46%) or is quite willing (40%) to pay more for products that have reduced impact towards biodiversity.

In conclusion, the awareness of the Swiss population for the term biodiversity is increasing; however, significant additional efforts - such as a coordinated awareness raising strategy - are needed to communicate the state of Switzerland's biodiversity and the implications of biodiversity losses.

Please describe other activities contributing to the achievement of the Aichi Biodiversity Target at the global level (optional):

4.2 Aichi Biodiversity Target 2. Biodiversity values integrated

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:

Switzerland has a comprehensive strategic and programmatic framework ensuring that biodiversity is integrated in national and local planning processes. This can be understood as a clear recognition of the intrinsic value of biodiversity or the value in terms of ecosystem services delivered by biodiversity such as the provisioning, regulating, cultural and habitat services.

However, when addressing the value of biodiversity in monetary terms, the underlying data become scarce and are restricted to singular studies. Today, biodiversity is incorporated as a cross-cutting issue into national accounting only in terms of costs.

The inventory of Final Ecosystem Goods and Services (a catalogue of 23 ecosystem services that are of particular benefit to the Swiss population as well as proposals for indicators for the individual services) is a promising approach to integrating biodiversity values in national accounting as well as in planning processes such as environmental impact assessment and strategic environmental assessment.

In conclusion, biodiversity values are acknowledged in terms of policy instruments, but an economic valuation of biodiversity and ecosystem services is nearly entirely lacking. In order to significantly progress towards this Aichi target, significant efforts to further develop existing processes (e.g. FEGS) as well as to promote the development of additional instruments (e.g. national TEEB study) are needed.

Please describe other activities contributing to the achievement of the Aichi Biodiversity Target at the global level (optional):

The state secretariat for economic affairs (SECO) is one of the main donors supporting the Natural Capital Finance Alliance (NCFA), an initiative launched in 2012 at the Rio + 20 Summit on Sustainable Development, aims to integrate reflections on natural capital in financial products. The NCFA is made up of financial institutions and other partners – all of whom are working together to drive innovation and develop the tools required to better understand risks, pursue opportunities, and establish the foundation

for sustainable long-term economic growth. . This development is based on research carried out within the framework of the TEEB (The Economics of Ecosystems and Biodiversity). The study was launched in 2008 by Germany, which chaired the G8, in collaboration with the European Commission and many other institutions, under the auspices of the UNEP. Its findings show how to determine the economic value of ecosystem services and biodiversity, but above all, the costs of overexploitation and decline in species diversity. The efforts of the NCFA go even further. In collaboration with financial actors, it develops analytical instruments adapted to the practice and makes them freely available to the interested parties.

4.3 Aichi Biodiversity Target 3. Incentives reformed

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:

Financial incentives are provided and regularly reviewed according to the Federal Act on Financial Aid and Compensations (1990, SR 616.1). The last review of compliance (2008) listed a total of 230 financial aids and compensations. Each year since 2014, one or two departments are reviewing their financial incentives. The result is a six-year review cycle. The report on the results of the review is included in the State account. Another study was conducted during the elaboration of the Biodiversity Action plan (Ecoplan 2013). Even though further analysis is needed, there is a common understanding that some of them impact biodiversity. For instance, the Federal Council acknowledges that the current tax and incentive system may affect climate, air and noise as well as soil and biodiversity. The Federal Council highlights that measures have been decided or are planned, e.g. regarding federal taxes, value added tax, mineral oil tax, international air transport, agricultural policy. Further, the Federal Council takes the view that a sectorial approach to incentives having negative impacts is more effective than an overarching framework.

Some progress in phasing out or reforming incentives harmful to biodiversity was achieved in the agricultural sector, but the effect on biodiversity of certain direct payments is still unclear. The reform of incentives is a gradual process that started with anchoring the multifunctional role of agriculture in the constitution (art. 104, 1996), and which influenced the development of the agricultural policy 2014-2017 that is continued in the agricultural policy 2018-2021. For instance, direct payments for husbandry were phased out. These payments were an incentive for farmers to increase husbandry, leading to an excess of manure on the one hand and an increase in feed imports on the other.

While some positive incentives are in place in several sectors, there still is room for further evaluation and improvements on this question.

Please describe other activities contributing to the achievement of the Aichi Biodiversity Target at the global level (optional):

4.4 Aichi Biodiversity Target 4. Sustainable production and consumption

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:

Sustainability is a fundamental principle anchored in the Federal Constitution (art. 73, SR 101, 1999) and guiding Switzerland’s actions. Therefore sustainability is reflected in Switzerland’s legal framework as well as in the programmes and strategies.

Significant progress was achieved in the conservation of utilized species. A strong legislative and programmatic framework is in place for the conservation and the in-situ as well as ex-situ promotion of cultivated plants and domesticated animals. The number of registered varieties of utilized plant species is growing, as is the number of breeds registered in Swiss herdbooks and the extinction risk of one of these varieties or breeds is increasingly lower.

In forestry, it is a matter of principle to interfere as little as possible with the propagation of trees. Naturally regenerated forests are better adapted to site-specific conditions and are usually more diverse Trees regenerate naturally on 82% of the forested area, thus securing the propagation of regional tree genotypes.

Since the middle of the last century, consumption in Switzerland has increased immensely. It affects biodiversity indirectly through land use, the demand for raw materials, environmental pollution from transport and energy demand as well as both upstream and downstream of the entire value chain.

Switzerland's ecological footprint is more than three times larger than its biocapacity. Carbon emissions account for 65% of the ecological footprint, making it the most significant factor overall. It has also grown substantially more than any other factor of the ecological footprint. Another major factor is our use of arable land, forests and pastures, which accounts for 32% of the total ecological footprint.

Switzerland's biodiversity footprint is far in excess of a level that can be accommodated by the planetary boundaries. It has increased significantly in recent years. The rising resource consumption is causing an ever larger share of the consumption-based biodiversity footprint to take its toll abroad: It was just over half in 1996 and more than roughly two-thirds in 2011. This high share is tied to the fact that Switzerland's small open economy is increasingly dependent upon imports. The environmental pollution caused by Switzerland has not grown to the same extent as its economy in the last 15 years, which means that resource efficiency has improved. However, Switzerland still has a ways to go before it reaches environmentally-friendly resource consumption levels.

In conclusion, major progress has been achieved in sustainable use of cultivated plants, domestic animals as well as the various tree species. Switzerland's ecological footprint, however, indicates that Switzerland consumes many more natural resources than available on its territory and Switzerland's biodiversity footprint shows that most of the Swiss impact on biodiversity is made abroad.

Please describe other activities contributing to the achievement of the Aichi Biodiversity Target at the global level (optional):
In terms of economic development cooperation, Switzerland also has programmes that promote sustainable trade and investments in biodiversity products (e.g. food, pharmaceutical and cosmetic ingredients, ornamental flowers), the protection of tropical forests and the establishment of sustainability labels in the international commodity trade, among other things.

4.5 Aichi Biodiversity Target 5. Habitat loss halved or reduced

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:
Between 1985 and 2009, the percentage of settlement area in Switzerland increased by 23%. Land use was particularly high in the lowlands, where the settlement percentage in that period grew twice as fast as the national average. There is no end in sight to the growth, even though land use has been slowed in recent years. Today, 0.69 square metres are sealed per second or transformed in most cases into species-poor lawns (golf courses, sports facilities, etc.).

The spread of settlements and infrastructures also causes the division of habitats into separate, disconnected areas and the isolation of animal and plant populations. Species populations and their genetic diversity are becoming smaller, which increases the risk of extinction. In the Central Plateau, landscape fragmentation has doubled in the last 30 years.

Between 1985 and 2009, 54,516 hectares of agricultural area were transformed into settlement area (of which 60 % is sealed). This corresponds to two-thirds of the agricultural area that was lost during this period. Another 9,302 hectares moved to the "Forest and Semi-Natural Areas" category. Forest has spread, especially at higher elevations, into remote and steep areas, due to the abandonment of agriculture.

The remaining agricultural land is often farmed with large quantities of fertilisers and pesticides. These problematic substances not only remain in the soil, but can also enter soil and bodies of water, where they harm soil and water organisms and disturb the ecological balance. Small structures continue to be removed from agricultural land, causing countless species to lose their habitats. Wetlands are drained or filled in. Swiss watercourses are also used intensively, particularly for electricity production or agricultural irrigation.

In conclusion, the state and evolution varies between habitats but are in general negative with many valuable habitats still being degraded, fragmented or entirely lost. Switzerland's total forest area, for instance, has been increasing which while offering new habitats to some species can also replace species rich meadows and pastures. The agricultural ecosystem has been shrinking since many years. Switzerland has suffered heavy losses in inland waters habitats, especially regarding mires and bogs (-82% since 1900) and alluvial zones (-36% since 1900) and losses continue despite legal protection of habitats (e.g. peatlands). Considerable efforts are deployed to restore watercourses.

Please describe other activities contributing to the achievement of the Aichi Biodiversity Target at the global level (optional):

4.6 Aichi Biodiversity Target 6. Sustainable management of marine living resources

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:
Switzerland has a small fishery and aquaculture industry that is mostly managed according to sustainability criteria but over-exploitation of fish populations exists and certain fish stocking measures can have negative effects on local biodiversity. However, the main threats to aquatic biodiversity emanates from water pollution, from the insufficient eco-morphological state of surface waters and from invasive alien species rather than from impacts due to fishery.

In conclusion, main pressures on fish stocks in Switzerland emanate from pollution and the insufficient state of inland water ecosystems, rather than from the management of fish stocks. However, with the high market share of imported fish, crayfish and crustaceans, Switzerland has a particular responsibility regarding the conservation of global biodiversity at international levels. So as to strengthen its commitment in this area, the ordinance on controlling the lawful origin of imported marine fishery products came into force on 1 March 2017. This new ordinance is designed to ensure that only fishery products of lawful origin – i.e. no products from illegal, unreported and unregulated fishing activities – are imported into Switzerland.

Please describe other activities contributing to the achievement of the Aichi Biodiversity Target at the global level (optional):
Over 90% of the fish, shellfish and crustaceans consumed in Switzerland are imported from abroad. Many Swiss retailers promote the Marine Stewardship Council (MSC) label. Nevertheless, the market share of MSC products amounts to merely 12.6% (2012-2013) making the consumption of fish and seafood far from sustainable.

4.7 Aichi Biodiversity Target 7. Sustainable agriculture, aquaculture and forestry

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:
Sustainable agriculture: Through its approval of Article 104 of the Federal Constitution in 1996, the Swiss population established a political basis for sustainable agriculture. Several instruments contribute to this objective, e.g. the proof of ecological performance as the basic condition for direct payments, ecological compensation and ecological quality. With its environmental targets for agriculture (Objectifs environnementaux pour l'agriculture), the federal authorities defined the extent to which agriculture must contribute to different general environmental objectives, in particular relating to biodiversity, air pollution (ammonia, nitrogen oxides), water pollution (nitrate, phosphorous, plant protection products, veterinary drugs) and soil pollution. A recent state report on the environmental targets (2016) noted that while

significant efforts have been made to better manage biodiversity in agriculture, they are not sufficient to ensure the long-term conservation of biodiversity and its ecosystem services. There is a need for instruments which accommodate biodiversity and sustainable use of natural resources.
Further, there are also private initiatives fostering sustainable agriculture based on labels. Today, around 13% of the area used for agriculture is organically farmed. These farms make targeted use of the agricultural policy direct payments incentives for additional ecological services (e.g. through the designation of additional ecological compensation areas and obtain higher market prices for their products. If all farms were to fulfil the criteria of these labels, Swiss agriculture would have considerably fewer environmental deficits.

Sustainable forest management: In its Forest management principles, the Forest Act demands that *"The forest shall be managed in such a way that it can fulfil its functions without interruption or restriction (sustainability)".* Environmentally friendly, socially and economically sustainable forest management is documented through certification. Both of the certification systems (FSC and PEFC) are used in Switzerland. Approximately 50% (606'000 ha in 2018) of Switzerland's forest area is currently certified. In 2009, the certified area was highest, encompassing a total of 706'000 ha. Since then, the certified area has declined due to renounced recertification. The Swiss Confederation publishes regularly reports on sustainable forest management. Moreover, the National forest inventory is the most important instrument for sustainability control. Sustainable forest management is also assessed at the cantonal level. Until 2017, 16 cantons published reports on sustainable forest management based on the 13 core indicators which definition was supported by the Federal office for the environment.

Sustainable aquaculture: Switzerland has no significant aquaculture. The partial target is thus not assessed.

In conclusion, the proof of ecological performance is a success, having been disseminated on almost the whole agricultural area since 2004. However, the label reflects basic requirements that are not sufficient to promote biodiversity in agricultural landscapes, especially when compared to provisions of other labels, e.g. organic farming or IP-Suisse. The forest area certified is high - even though declining - when compared at the international level (surfaces certified (FSC) in 2017: North America 34.9%, Europe: 47.8%).

Please describe other activities contributing to the achievement of the Aichi Biodiversity Target at the global level (optional):
Switzerland is committed to conserve and sustainably use agrobiodiversity, and to promote coherency and mutual supportiveness among the relevant international instruments. This is done though Switzerland's involvement with the CBD, but also through its strong engagement with the Food and Agriculture Organization of the United Nations (FAO), the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), the Commission on Genetic Resources for Food and Agriculture (CGRFA), the Sustainable Food Systems Programme (SFS) and the Global Soil Partnership.

4.8 Aichi Biodiversity Target 8. Pollution reduced

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:
Several monitoring programs are recording pollution in Switzerland. The concentration of nitrate and artificial organic substances in Swiss groundwater is recorded at national level under the NAQUA National Groundwater Monitoring. The NAQUA routine programme tests around 40 different active substances in plant protection products and their degradation products. Air pollutants are recorded through the National Air Pollution Monitoring Net-work (NABEL). The 16 NABEL stations are distributed throughout the country and monitor pollution at typical locations (e.g. city centre streets, residential areas, rural stations). Soil pollution is recorded at national level under the Swiss Soil Monitoring Network (NABO). Since 1984, FOEN and the Federal Office for Agriculture have jointly operated the Swiss Soil Monitoring Network.

Pollutants (all type):

Over the past decades, the development of water treatment facilities has significantly improved the quality of water in Switzerland. The next challenge will be the elimination of micropollutants. From a biological perspective, the state of Swiss watercourses is good, but at varying degrees. The results of the National Surface Water Quality Monitoring Programme (NAWA) show that the ecological functionality of water bodies is insufficient at no fewer than 30 percent of measuring stations. Micropollutants make their way into bodies of water with treated wastewater and through diffuse inputs from sources such as agriculture. They can adversely affect marine biotic communities, even in low concentrations. Heavy metal pollution in Swiss watercourses is on a downward trend.

Requirements exist at the federal level for releases of pollutants from heaters, industrial plants, motor vehicles, construction machines, and fuel and fuel quality requirements. In addition, it is compulsory to use the best techniques for vehicles, industrial and agricultural installations and heating systems. Emissions of air pollutants have decreased in Switzerland since the 1990s. Results from modeling and surveys show decreases from 10% (ammonia) to 93% (lead). These improvements are due to the introduction of more stringent requirements with the consequent increase of technically and economically feasible measurements.

Soil is exposed to a wide range of point and diffuse sources of chemical contaminants. Various measures at the source should reduce them so that soil fertility is not impaired. The FOEN supports the implementation of these measures by preparing the groundwork for the environmentally-friendly use of fertilisers and plant protection products and the reduction of soil pollution by other contaminants. The substitution of lead in petrol, consistent flue gas treatment in municipal waste incineration plants and the limitation of cadmium levels in phosphorus fertilisers have proven to be effective measures in protecting soil from chemical pressures. Significant changes in cadmium, nickel, chrome and cobalt levels have not been observed in the last 20 years. Lead and mercury levels, however, have increased significantly in the topsoil. Steadily rising concentrations of zinc and copper have been observed in the topsoil of intensively used pastures. Particularly sharp increases (> 5% of the target value) have been caused by the application of farm fertilisers (pig and cattle slurry, but also manure). Zinc and copper additives that are included in feed to provide livestock with additional nutrients and improve their performance enter the soil through farm fertilisers. The long-term use of soil for highly specific types of agriculture, such as viticulture and fruit and vegetable production, has led to copper levels that exceed the target values.

Excess nutrients:
Elevated nitrogen inputs have a negative effect on nitrogen-sensitive ecosystems due to over-fertilization. Ammonia emissions from agriculture account for about two-thirds, nitrogen oxide emissions from combustion processes to about one-third of the total nitrogen inputs. In the report «Konzept betreffend lufthygienische Massnahmen des Bundes» (Concept concerning air pollution control measures of the Federal Government) from 11th September 2009 the Swiss Federal Council defined the goal to reduce ammonia emissions by about 40% and nitrogen oxide emissions by about 50% compared to 2005. In this context, further developments in the Agricultural Policy should achieve a substantial reduction of ammonia emissions. Today, internationally recognized critical loads and critical levels established by the UNECE for inputs of nitrogen continue to be exceeded over large areas of Switzerland.

Please describe other activities contributing to the achievement of the Aichi Biodiversity Target at the global level (optional):
Both internationally and in Switzerland it is undisputed that the current situation with respect to the nitrogen input into the environment must be improved. Effect-thresholds in form of Critical Loads and Critical Levels for nitrogen deposition and ammonia concentrations are defined in the framework of the UNECE Convention on Long-range Transboundary Air Pollution (CLRTAP). Both thresholds are exceeded in large parts of Switzerland. The biggest need for action lies in reducing ammonia emissions from agriculture.

4.9 Aichi Biodiversity Target 9. Invasive alien species prevented and controlled

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:

In its 2006 report "Exotic species in Switzerland", the Federal Office for the Environment (FOEN) has inventoried more than 800 exotic species, including 107 invasive species. Documentation including taxonomic status, description and identification, biology and ecology, origin, method of introduction, distribution, impact, management measures is available for all of those species. Although this publication does not cover all taxonomic groups in the same way and has not been updated since, it provides at least an overview of non-native species as well as threats to diversity and for the Swiss economy, based on the expert knowledge.

As stated in chapter 3 (NR6; Strategic Goal 3), the Federal Council adopted the Swiss Invasive Alien Species Strategy in 2016. The strategy is based on the objectives of national provisions and international standards: it sets out these objectives with respect to invasive alien species and sets out the actions to be taken. The catalog of measures combines both the existing activities, and new measures to fill the existing deficits and reach the objectives. The implementation of those measure will start in 2018. It is planned to build on existing activities to bring together and update basic scientific knowledge, provide basic training and on-going training, and organize information exchange between relevant actors at national and international level. It is also necessary, in particular for the Confederation, to undertake harmonizing work to adapt the existing legal bases and to improve the coordination of federal, cantonal and third party activities in the light of the evolution of the legal bases.

Please describe other activities contributing to the achievement of the Aichi Biodiversity Target at the global level (optional):
Invasive alien species are covered by several treaties and conventions. International cooperation takes place within specialized organizations, for example in the field of human and animal health, biodiversity protection or agriculture. The most relevant international conventions for this strategy are those which have been ratified by the Parliament and which therefore require the establishment of a framework for action at the level of the Confederation and the cantons without delay. These include the Convention on Biological Diversity, the Berne Convention and the EU Regulation on alien invasive species.

Under the Global Invasive Alien Species Information Partnership (GIASIP), Switzerland is committed to contributing to the development of international information exchange in this field. Under the Convention on the Conservation of European Wildlife and Natural Habitats (Berne Convention, concluded in 1979 and ratified by Switzerland in 1982), Switzerland has also undertaken to cooperate at the international level to combat invasive alien species. In particular, Switzerland has to strictly control the implantation of non-native species.

4.10 Aichi Biodiversity Target 10. Pressures on vulnerable ecosystems reduced

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:
Switzerland, as a landlocked country, is not directly affected by coral bleaching or ocean acidification. However, in a way or another, almost all ecosystems are affected by climate change and anthropogenic pressures. Moreover, most of the impacts of Switzerland as recorded by the ecological footprint are happening abroad.

The high quality and long climate measurement series dating back to the 19th century form a very good basis for estimating the current climate development in Switzerland. Analyses show a rise in temperature in Switzerland of about 1.8°C is clearly detectable since the beginning of industrialization (1864) to 2012, thus exceeding the global value of 0.85°C by more than double. Changes in mean precipitation have hardly been observable to date due to large annual fluctuations.

Biodiversity in Switzerland is also under pressure due to climate change. During the last 50 years, winter and spring precipitation quantities at most monitoring stations in Switzerland have decreased, while average temperatures have increased. Species react differently to factors such as temperature and humidity. Climate changes can cause their natural ranges to shift. For instance, butterflies, dragonflies, birds and several plant species from the Mediterranean region are spreading into Switzerland. According to the Biodiversity Monitoring data, drought-resistant species and neophytes with short life spans have in particular increased significantly at lower altitudes. The BDM also shows that warmth-loving plants,

butterflies and birds are moving into previously cooler areas, causing entire species communities to shift their altitudinal distribution. Within only eight years, plants have moved 8 metres higher on average, while birds and butterflies have moved 40 metres higher. The displacement of vegetation areas is causing the alpine and nival altitudinal belts to shrink. Characteristic alpine plant species may be placed under greater pressure in the future.

In conclusion, in Switzerland almost all ecosystems are affected by climate change and anthropogenic pressures. The strategy "Adaptation to climate change in Switzerland" provides the basis for future action using a broad approach not specifically targeted to defined ecosystems.

Please describe other activities contributing to the achievement of the Aichi Biodiversity Target at the global level (optional):
Switzerland actively campaigns for a global climate regime that ensures adequate reductions in green-house gases and supports developing countries in their efforts to adapt to climate change.

4.11 Aichi Biodiversity Target 11. Protected areas increased and improved

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:
The area designated as biodiversity conservation area – which includes the inventoried alluvial zones, raised bogs, fens, amphibian spawning sites, dry meadows and pastures, as well as water and migratory bird reserves, Swiss game reserves and the Swiss National Park – has (except for the water and migratory bird reserves, which were revised in 2001 and 2009) remained stable between 2012 and 2016. In 2017, a revision of the biotopes of national importance was approved by the Federal Council. The total size of national protected areas increased from 29’449 ha in 1991 to 272’574 ha in 2018, which corresponds to 6.6% of the country’s area. Cantons also protect some sites at the regional and local level for another 3.09% of the country’s expanse.
In addition to the national, regional and local protected areas, there are other designated areas for the protection and promotion of biodiversity in Switzerland. In contrast to the abovementioned protected areas, however, there is no legally binding protection. Nonetheless, these areas are delineated and targets and measures are agreed on by the owners. Those sites account for another 3.38% of the national area. Because of some overlap between the areas, it is estimated that the current area that is designed for biodiversity conservation covers around 520’000 ha which represents 12.5% of the total area of Switzerland.

Protected areas are important refuges for threatened species. In fact, national biotope inventory sites, which make up around 2.2 percent of the national territory, are home to about half of the species with the highest national priority. However, the populations of threatened species are also decreasing in the protected areas. The existing areas are often too small and not sufficiently connected, which causes a limited or total absence of individual exchanges between populations or the re-colonisation of abandoned areas. In many cases, inadequate ecological quality is also a problem. Analyses of the programme for monitoring the effectiveness of habitat conservation in Switzerland (WBS) show that the state of around one-third of the surveyed amphibian spawning sites does not meet the statutory goals. The ecological state of the majority of the 326 alluvial sites of national importance also does not meet the statutory requirements. The dynamic and geomorphology of the rivers in the Central Plateau and the Southern Alps are particularly heavily damaged. But there are positive developments as well: 49 alluvial zones in the inventory are in “good condition”. When monitoring the effectiveness of mire protection efforts, it was noted that over one-fourth of mires had become significantly dryer between the monitoring periods of 1997/2001 and 2002/2006, the nutrient supply had increased significantly in one-fourth of the mires, more woody plants were growing in nearly one-third of the mires, and the humus content of the soil had decreased in around one-fifth of the mires. The area occupied by raised bogs in the entire mire area has decreased by 10 % due to these quality losses in the same period. Many dry meadows and pastures of national importance are still not being used in accordance with the legislation. Bush encroachment has increased in over 600 of the surveyed dry meadow and pasture sites (total investigated: 1,358) since the inventory period (1994–2004), and very heavily at some sites. But there are also many cases (approximately 350 sites) where bush encroachment has decreased. The biotopes of national importance tend to be rather small (70.7% of all nationally protected areas are smaller than

10 ha and only 4.29% bigger than 100 ha), which is why uses or abandoned use in the direct vicinity affect them even more heavily when a sufficient buffer zone is lacking.

The main reasons for the meagre biotope protection situation are the inadequate financial and human resources of the Confederation and cantons. Biotope protection takes a great deal of effort and is expensive. The negotiations for a maintenance contract are often long and complicated. Another hurdle is the high cost of maintenance since the objects are often located in difficult terrain or on steep slopes. These tasks can only be fulfilled if the available resources match the size and diversity of the natural habitats. Furthermore, more financial resources are required than previously. An expert report estimates that the necessary maintenance measures require twice the amount of funds than are currently used. One-time investments are also required to enhance and revitalise sites.

As part of its biodiversity policy, the Confederation attaches particular importance to protected areas. By ratifying the United Nations Convention on Biological Diversity, Switzerland had already expressed its intention to the international community to establish an ecologically representative network of well – connected, effectively and equitably managed protected areas, and to take other effective spatial conservation measures. This goal has not yet been achieved.

Please describe other activities contributing to the achievement of the Aichi Biodiversity Target at the global level (optional):

4.12 Aichi Biodiversity Target 12. Extinction prevented

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:

The decline in populations of many animal, plant, fungus and lichen species is reflected in the Red Lists of threatened species. 3 percent (255) of the species assessed to date (10,350) are deemed to be “extinct in Switzerland”, 5 percent (554) are considered “critically endangered”, 11 percent (1,144) are assessed as “endangered” and 17 percent (1,788) are considered “vulnerable”. 10 % (1,053) of species are assessed as “near threatened” and require special attention. These groups may be moved into a higher category of threat in the future. Along with the already endangered species, nearly half of all assessed native Swiss species are in an at-risk situation. The Red Lists of vascular plants (2016) and breeding birds (2010) have been updated in recent years, which makes it possible to estimate the changes. According to both lists, the overall situation has hardly improved for endangered species in the last 10 years. While the percentage of endangered species has stayed almost the same, many species are still experiencing shrinking ranges and thinning populations.

The FOEN’s species promotion concept assumes that all species should be basically conserved in their natural home range. Specific promotional measures focus on species which are endangered in Switzerland, for which Switzerland bears particular responsibility at the international level, and which require urgent measures for their conservation. The basis for these measures is the list of national priority species. It currently includes around 3,600 species and is used as a tool to promote species and habitats. There are four priority levels. Accordingly, around 10 % of these species are given very high priority (priority 1), 20 % high priority (priority 2), 30 % middle priority (priority 3) and 40 % moderate priority (priority 4). Similar to the Red Lists, the list of national priority species is periodically updated. The Swiss species promotion concept describes how national priority species should be conserved.

In conclusion, despite the number of measures undertaken, the multiple pressures on species from land-use change and habitat fragmentation, climate change and invasive alien species are high and levels of threat are expected to remain stable, if not increase.

Please describe other activities contributing to the achievement of the Aichi Biodiversity Target at the global level (optional):

4.13 Aichi Biodiversity Target 13. Genetic diversity maintained

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:

Figures are scarce on the development and state of genetic diversity in wild plants and animals in Switzerland because there are no appropriate monitoring programmes. However, it must be assumed that the population loss and decline experienced by many species due to the destruction, damage and fragmentation of their habitats has caused a loss of genetic diversity. The large number of species on the Red Lists may be a clear sign that genetic diversity is steadily disappearing. Researchers are acting on the assumption that climate change is also a threat to the genetic diversity within species.

The Confederation is committed to protecting and promoting genetic diversity in crop plants by implementing the “National Action Plan for the Conservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture” (NAP-PGREL). As for animal genetic resources, a concept has been developed to conserve agricultural livestock. The Confederation supports and promotes various measures and projects to conserve and sustainably use genetic diversity in the forest, such as the implementation of near-natural silviculture with natural regeneration, the conservation of locally adapted populations and their potential adaptability in forests of particular genetic interest, or the use of locally adapted reproductive material (seeds, seedlings) for the artificial regeneration of populations.

In conclusion, there is now a sound baseline for the future work on conservation of animal and plant genetic diversity resources in agriculture but effort is needed to assess and maintain the genetic diversity of the crop wild relatives and other wild species.

Please describe other activities contributing to the achievement of the Aichi Biodiversity Target at the global level (optional):

4.14 Aichi Biodiversity Target 14. Ecosystems and essential services safeguarded

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:

An overview of ecosystem services in terms of an inventory of Final Ecosystem Goods and Services (FEGS) exists but the indicators and ecosystems services values have not yet been calculated. Safe-guarding of the forest to secure ecosystem services has a long tradition, be it for drinking water purification or for the protection from natural hazards. Currently, major efforts are being deployed to strengthen the protection of water; based, among other things, on a long-term strategic planning for the restoration of 4’000 km of watercourses. The safeguarding of ecosystems services also requires sustainable use of these services. For instance, implementing integrated water management plans and, sustainable forest management principles (46% of Swiss groundwater zones are in forests); and promoting the efficient use of water; serves to secure the use of water resources.

The prominent service delivered by ecosystems is the provision of food. The vast majority of food is produced in agro-ecosystems, whereas food harvested in natural or near natural ecosystems is of secondary importance. From the import statistics it is apparent that approximately 50% of the food consumed in Switzerland is imported from abroad. The share of imported fish, shellfish and crustaceans is higher even than 90%. Therewith, it becomes apparent that Switzerland benefits from ecosystem services from abroad.

Public participation, particularly thorough direct democracy, is central to Switzerland decision-making process.

In conclusion, it is noted that Switzerland’s ecosystems are under pressure. Successes in restoring and safeguarding essential ecosystem services have been achieved, e.g. through increased water use efficiency or though the protection of forest area. Other pressures on ecosystems are assumed to persist (e.g. land use change) or to increase, e.g. as a result of progressing climate change or increased usage (e.g. carbon stocks through soil use), thus affecting the delivery of ecosystem services. The restoration

and safeguarding of those services despite the decreasing biocapacity of Switzerland's is a major challenge.

Please describe other activities contributing to the achievement of the Aichi Biodiversity Target at the global level (optional):

Switzerland benefits from ecosystem services abroad, and therefore also bears a responsibility to strengthen its commitment to the conservation of ecosystem services at the international level.

4.15 Aichi Biodiversity Target 15. Ecosystems restored and resilience enhanced

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:

The development of an ecological infrastructure composed of all protected and connected areas is established as a national priority of the Federal Council in the Swiss Biodiversity Strategy. For that purpose, protected areas should be enhanced and remediated, area loss and fragmentation slowed, and habitat functionality increased. Current instruments should be expanded so that species promotion in Switzerland can be specifically supported.

When monitoring the effectiveness of mire protection efforts, it was noted that over one-fourth of mires had become significantly dryer between the monitoring periods of 1997/2001 and 2002/2006, the nutrient supply has increased significantly in one-fourth of the mires, more woody plants were growing in nearly one-third of the mires, and the humus content of the soil has decreased in around one-fifth of the mires. The area occupied by raised bogs in the entire mire area has decreased by 10 % due to these quality losses in the same period. The preliminary findings of the programme for monitoring the effectiveness of habitat conservation in Switzerland indicate that this negative trend is continuing: Mires are becoming richer in nutrients, dryer and more compacted. Regeneration measures have been successful, but they have been too infrequent and at too small a scale to compensate for the qualitative losses. There are considerable deficiencies in the implementation and execution of buffer zones.

Experts estimate that 79 % of raised bogs, 30 % of fens, 30 % of alluvial zones, 25 % of amphibian spawning sites and 20 % of dry meadows and pastures of national importance need to be remediated. It is also important for biotopes to be properly maintained. Under federal law, cantons must ensure that protection requirements for landowners and long-term maintenance of national biotopes are guaranteed. The implementation deadlines have since expired, with the exception of the inventory of dry meadows and pastures, which should be implemented by 2020. In 2016, the Federal Council disbursed special funds to take urgent sanitation and revalorisation measures.

In terms of carbon stocks, all types of soil use, with the exception of forests, result in carbon dioxide emissions. These emissions have been relatively stable since the beginning of the 1990s, and so these soils have never contributed to carbon storage. Forest management, on the other hand, has long contributed to increasing biomass, meaning that the forests act as a carbon sink. In signing the Kyoto Protocol, Switzerland committed itself to accounting for changes in the carbon stock in the forest sector resulting from reforestation and clearing (Article 3.3 and 3.4, reporting and accounting of LULUCF). Except for the years of severe storms that cause significant forest mortality (for example after the Lothar storm in December 1999), growth outweighs logging leading to an increase of biomass. An increased harvest of timber, as foreseen in Swiss forest policy in the coming years, would reduce the carbon sink effect of the forest. A reasoned use of wood would, however, mitigate this consequence and maintain the carbon climate protection provision currently stored.

In conclusion, a clear trend cannot be given for the achievement of this Aichi target. Whereas on the one hand, efforts have been deployed for the rehabilitation of watercourses, and the permeability of the landscape is anticipated to increase due to restoration measures; on the other hand, the ability of forests to act as carbon sinks is expected to decrease, and additional efforts are needed to restore the biotopes of national importance. To increase ecosystem resilience and achieve the restoration of at least 15% of degraded ecosystems by 2020, efforts will have to be strongly intensified.

Please describe other activities contributing to the achievement of the Aichi Biodiversity Target at the global level (optional):

4.16 Aichi Biodiversity Target 16. Nagoya Protocol in force and operational

-> Your country has submitted the interim national report on the implementation of the Nagoya Protocol.

4.17 Aichi Biodiversity Target 17. NBSAPs adopted as policy instrument

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:
On 25 April 2012, the Federal Council adopted the Swiss Biodiversity Strategy (SBS) for the conservation of biological diversity in the long term. At the same time, the Federal Department of the Environment, Transport, Energy and Communications (DETEC) was instructed to draw up an action plan for the implementation of the SBS. The Biodiversity Action Plan was approved by the Federal Council on 6 September 2017, and contains 26 measures based on the SBS objectives. The target is thus met by Switzerland.

Please describe other activities contributing to the achievement of the Aichi Biodiversity Target at the global level (optional):

4.18 Aichi Biodiversity Target 18. Traditional knowledge respected and integrated

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:
Switzerland has no indigenous communities or indigenous peoples as commonly understood by the Convention. Switzerland's local communities, however, are fully integrated in the implementation of the Convention through the principles of Swiss federalism, e.g. environmental protection organisations' collective right of appeal.

To implement the Nagoya Protocol, Switzerland amended the Federal Act on the Protection of Nature and Cultural Heritage and adopted a specific “Nagoya-Ordinance”, which entered into force on 1 February 2016. These regulations also contain measures with regard to the utilization of traditional knowledge of indigenous and local communities associated with genetic resources. As a transparency measure to support the implementation of access and benefit sharing, the Swiss Patent Act requires patent applicants to disclose the source of a genetic resource and/or associated traditional knowledge to which the inventor or the patent applicant had access, if the invention is directly based on this resource or knowledge.

As a Party to the UNESCO Convention for the Safeguarding of Intangible Cultural Heritage (16 October 2008), Switzerland pledged to compile and periodically update an inventory of the living traditions found on its territory. The “Inventory of Living Traditions” is accessible online (http://www.lebendige-traditionen.ch). Many living traditions are related to agriculture and therefore interlinked and of relevance for biodiversity conservation, e.g. chestnut farming, fruit growing, herbal knowledge, "Wässermatten", wild hay making etc. Many of these traditional practices are promoted, among others, by public subsidies.

In conclusion, the respect of traditional knowledge relevant for the conservation and sustainable use of biodiversity is integrated in Switzerland's relevant legal provisions and activities.

Please describe other activities contributing to the achievement of the Aichi Biodiversity Target at the global level (optional):
Switzerland is actively participating in the ongoing negotiations of the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC) of the World

Intellectual Property Organization (WIPO) with the objective of reaching an agreement about an international legal instrument (or instruments) for the balanced and effective protection of genetic resources, traditional knowledge and traditional cultural expressions.
The protection of traditional knowledge, innovations and practices as well as the rights of the indigenous and local communities, is an important pillar of Switzerland's technical cooperation.

4.19 Aichi Biodiversity Target 19. Knowledge improved, shared and applied

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:

Switzerland has a comprehensive set of national monitoring programmes related to the environment, and specifically to biodiversity.

The programmes are described in the answer to the Strategic Goal 10 of the national strategy. All information is accessible online (see Swiss Information-System Biodiversity (SIB): www.sib.admin.ch > Convention on Biodiversity > Biodiversity: Data & State).

The major shortcoming for the generation of biodiversity knowledge in the future is the creeping loss of knowledge in systematics in general due to a reorientation of main research axes in Swiss universities. In order to counteract this development, the Swiss Systematic Society (SSS) was founded in 2005. The SSS is a scientific society open to both professionals and amateurs. The basic objective of the SSS is to ensure that expertise in systematics is guaranteed in the long term in Switzerland. More generally, the SSS wants to be an authoritative voice in discussions of systematic-related questions in this country.

Knowledge and how knowledge is used, are two of the most precious resources in designing sustainable development processes. Therefore, basic and professional training as well as research and innovation are supported by the Confederation. The Federal Office for the Environment, for instance, supports the integration of environmental issues in basic and professional training and, to this effect, collaborates with the cantons as well as with its partners (Sanu future learning; FEE – Foundation for Environmental Training; SILVIVA – Foundation for Environmental Training and Forest; and the training centre of the World Wide Fund for Nature WWF).

In conclusion, high quality information on Switzerland's biodiversity is available. However, significant efforts will be needed, not only to secure the availability of such information in future, but also to further develop the knowledge base, e.g. by addressing biodiversity values, and to effectively communicate biodiversity knowledge to promote action to achieve the objectives of the Aichi targets.

Please describe other activities contributing to the achievement of the Aichi Biodiversity Target at the global level (optional):

4.20 Aichi Biodiversity Target 20. Financial resources from all sources increased

-> Your country has submitted the Financial Reporting Framework

4.21 Based on the description of your country's contributions to the achievement of the Aichi Biodiversity Targets, please describe how and to what extent these contributions support the implementation of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals:

Goal 1: End poverty in all its forms everywhere
An official survey of poverty in Switzerland (2010) shows that poor and vulnerable people are often living in urban areas. The link between poverty and access to natural resources is thus not significant in Switzerland. However, many people base their livelihood on natural resources through agriculture, forestry or tourism (see NR6 4.7). Sustainable use of natural resources and awareness towards

ecosystem services (see NR6 4.2 and 4.14) are thus important themes contributing both to the protection of biodiversity and sustainable development.

Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture
Food security, improved nutrition both ensue from functional ecosystems and sustainable use of natural resources. Sustainability is a fundamental principle guiding Switzerland's action and goes further than sustainable agriculture (see NR6 4.4). The Swiss population voted an amendment of the Swiss constitution (24th September 2017) incorporating five elements of food safety: prevent erosion of domestic agricultural production base, make food production more adaptable and efficient, reduce dependence on subsidies, maintain cross-border trade, and reduce waste. So far, the degree of self-sufficiency in Switzerland is 55.4% (2014). Genetic diversity is an important element of food security. Several projects are ongoing that promote genetic diversity in crop plants (see NR6 4.13). Many living traditions are related to agriculture and therefore interlinked and of relevance for biodiversity conservation and are promoted, among others, by means of ecological compensation (see NR6 4.18).

Goal 3: Ensure healthy lives and promote well-being for all at all ages
The links between health and biodiversity are being increasingly recognized. The Swiss Biodiversity Strategy objective 8 aims at promoting biodiversity in settlement areas to promote good health and recreation among the population (see NR6 3.8). Health also indirectly profits from biodiversity promotion measures. For example the efforts to reduce pollutants (see NR6 4.8) or having a more sustainable use of natural resources (see NR6 4.4) all contribute also to human health. Moreover, safeguarding ecosystems and their essential services (see NR6 4.14) also contribute to public health.

Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
Efforts made to raise the public awareness to biodiversity and sustainable development (see NR6 4.1) are key to achieving this goal. The Swiss Confederation supports the integration of environmental issues in basic and professional training making increasingly more people competent in designing sustainable development processes (see NR6 4.19).

Goal 5: Achieve gender equality and empower all women and girls
In the light of biodiversity, the question of gender is not very important in Switzerland. In Switzerland, 37% of the people employed in agriculture are women (2014). Only about 2% are head of the agricultural holding. Women often hold traditional knowledge relevant for the conservation and sustainable use of biodiversity. This knowledge is integrated in Switzerland's relevant legal provisions and activities (see NR6 4.18).

Goal 6: Ensure availability and sustainable management of water and sanitation for all
Over the past decades, the development of water treatment facilities has significantly improved the quality of water in Switzerland. From a biological perspective, the state of Swiss watercourses is good, but the ecological functionality of water bodies is still insufficient at 30 percent of measuring stations (see NR6 4.8). Wet habitats are particularly threatened in Switzerland and this is why they are well represented in biodiversity conservation areas. Yet, despite the protection, the ecological quality of many wet areas is continuously decreasing (see NR6 4.11). Major efforts are being deployed to strengthen the protection of wet areas; based, among other things, on a long-term strategic planning for the restoration of 4'000 km of watercourses (see NR6 4.14) and by taking urgent sanitation and revalorisation measures in the biotopes of national importance (see NR6 4.15).

Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all
The energy strategy 2050 contributes to reducing Switzerland's energy-related environmental impact. By approving the revision of the Energy Act in May 2017, Swiss voters gave the go-ahead to a first series of measures to restructure the country's energy system (see NR6 3.1). Renewable energy offers clean energy but may conflict with the objectives of biodiversity conservation. Implementing integrated and sustainable management plans for natural resources (water, wood, etc.) is thus very important (see NR6 4.14).

Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Switzerland recognizes the value of biodiversity and the services it delivers (see NR6 4.2). Many sectors include sustainability in their development programs (see NR6 4.4). While progress has been made for example in forestry or agriculture, they are often still not sufficient to ensure the long-term conservation of biodiversity and its ecosystem services (see NR6 4.7). The safeguarding of ecosystems services is a major challenge for Switzerland (see NR6 4.14).

Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

The development of an ecological infrastructure composed of all protected and connected areas is established as a national priority of the Federal Council in the Swiss Biodiversity Strategy. This ecological infrastructure is a basis for safekeeping ecosystems that are resilient and able to withstand changes. Efforts are currently being taken in several domains but remain insufficient (see NR6 4.15).

Goal 10: Reduce inequality within and among countries

The effect of socio-political inequalities on the conservation and use of biodiversity is not well studied in Switzerland. Switzerland has no indigenous communities as understood by the Convention. However, the principles of Swiss federalism integrates Switzerland's local communities irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status (see NR6 4.18).

Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable

The growing population, desire for more living space, necessary densification and greater mobility increase the pressure on biodiversity in settlement areas. However several programs aim at developing biodiversity-rich green areas in cities. A positive evolution can be observed, but the measures taken to conserve habitat and species in settlement areas remain very heterogeneous (see NR6 3.8). The creation of further nature discovery parks will allow a better access to the nature for the population. Indeed, the parks provides undisturbed habitats for plants and wildlife in their core zone and also a surrounding transition zone that is suitable for environmental education and allows close contact with nature. The parks are no further than 20 kilometers from the center of an urban area and are easily reached by public transport (see NR6 4.11). Because of its mountainous landscape, there is an old tradition for protection forests in Switzerland, an ecosystem service that is thus highly valued (see NR6 4.14).

Goal 12: Ensure sustainable consumption and production patterns

Sustainability is a fundamental principle of Switzerland. Significant progress was achieved in the conservation of utilized species as well as in forestry. However, an increasing part of the ecological footprint of Switzerland happens abroad and the footprint is far in excess of a level that can be accommodated by the planetary boundaries (see NR6 4.4). Efforts that are deployed in agriculture and forestry to further sustainable use of natural resources are increasing, but still are not sufficient to ensure the long-term conservation of biodiversity and its ecosystem services (see NR6 4.7). More efforts are also necessary to increase the awareness of the population on biodiversity and sustainable development (see NR6 3.7 and 4.19).

Goal 13: Take urgent action to combat climate change and its impacts

Climate change puts the biodiversity in Switzerland under pressure. Effects on species is increasingly observed by the monitoring programs. Switzerland is committed to a maximal reduction of greenhouse gases. However, as the warming may still reach 2°C, adaptation to the consequences of climate change is paramount. Strategies and actions are taken at the federal, cantonal and communal levels (see NR6 4.10). The restauration and safekeeping of natural habitats that act as carbon sinks are also important measures that are undertaken (see NR6 4.15).

Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development

In Switzerland, the main pressures on fish stocks emanate from pollution and the insufficient state of inland water ecosystems, rather than from the management of fish stocks. Indeed, the fishery and

aquaculture industry is small and mostly managed according to sustainability criteria. As a landlocked country, Switzerland is not directly affected by the destruction of marine biodiversity. However, Switzerland holds a particular responsibility towards the conservation and sustainable use of marine resources as over 90% of the fish, shellfish and crustaceans consumed in the country are imported from abroad. The new ordinance on controlling the lawful origin of imported marine fishery products is designed to ensure that only fishery products of lawful origin – i.e. no products from illegal, unreported and unregulated fishing activities – are imported into Switzerland.

Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
The strategic plan for biodiversity 2011-2020 as well as the Swiss action plan for biodiversity are both paramount contributions to the achievement of goal 15 of the SDGs. Sustainable use of natural resources is a fundamental principle for Switzerland. The progress made for the national target 1 (see NR6 3.1) and Aichi target 4 and 7 (see NR6 4.4, NR6 4.7) is directly relevant to the SDG target 15.1. The pressures on habitats are strong in Switzerland and measures taken towards national target 2 (see NR6 3.2) and Aichi target 3, 5, 14 and 15 (see NR6 4.5; NR6 4.14, NR6 4.15) are also relevant to the SDG targets 15.1, 15.4 and 15.5. Progress made in forestry towards sustainable forest management (see NR6 4.7) are relevant to SDG target 15.2. The entry into force of the Nagoya Protocol (see NR6 4.16) is relevant to the SDG target 15.6. The efforts taken at the species level to prevent extinction (see NR6 4.12) and the international commitment of Switzerland that is strengthened by the action plan (see NR6 2.2.6 and 2.2.7) are supporting progress towards SDG target 15.7. The Swiss Invasive Alien Species Strategy that makes progress towards Aichi target 9 is also relevant to the SDG target 15.8. The integration of biodiversity values in the decision process (see NR6 3.7 and 4.2) contributes significantly to the SDG target 15.9. Switzerland is one of the first signatory country of CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora), which secretariat is located in Geneva. Because of the importance of the CITES certificates for its watch and luxury industry, Switzerland as a special interest in ensuring the effective and efficient implementation of the Convention (see NR6 3.9).

Goal 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
The Swiss international cooperation, which is an integral part of the Federal Council's foreign policy, aims to contribute to a world without poverty and in peace, for sustainable development. It fosters economic self-reliance and state autonomy, contributes to the improvement of production conditions, helps address environmental problems, and ensures better access to education and basic healthcare services.

Goal 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development
The Swiss international cooperation supports several projects that promote sustainable use of natural resources. The strong international commitment of Switzerland supports the effective implementation of existing international conventions and related instruments (see NR6 3.9). The participation to global networks or databases such as GBIF is particularly important to further synergies between the national and international level. Several national strategies and action plans (biodiversity, invasive alien species, adaptation to climate change, etc.) all contribute to implementing the SDGs at the national level (see NR6 4.17).

5 Section V. Description of the national contribution to the achievement of the targets of the Global Strategy for Plant Conservation (completion of this section is optional)

Section V. Description of the national contribution to the achievement of the targets of the Global Strategy for Plant Conservation (completion of this section is optional)

This section of the sixth national report is optional but is recommended for all Parties that have developed strategies or similar commitments for plant conservation in response to the GSPC, and/ or for Parties that have active plant conservation work taking place via networks of botanical gardens or botanical collections institutions. For those GSPC targets that are closely aligned to specific Aichi Biodiversity Targets, information entered in the other sections of the report will be relevant here. If this is the case, the information does not need to be reproduced in its entirety in this section of the national report; instead a reference to previous sections of the national report can be inserted. Through its Secretariat at Botanic Gardens Conservation International (bgci.org), members of the Global Partnership for Plant Conservation and other botanical institutions may be able to support Parties in compiling relevant information related to this section.

Using the template below, please describe your country's contribution towards the achievement of the targets of the Global Strategy for Plant Conservation. This template should be replicated for each of the 16 targets of the Global Strategy for Plant Conservation.

V. Description of the national contribution to the achievement of the targets of the Global Strategy for Plant Conservation

Does your country have national targets related to the GSPC Targets?

Check this box if your country has adopted national targets or equivalent commitments related to the Global Strategy for Plant Conservation, and indicate the wording of the targets in the sections below.

☒ Yes. Please provide details on the specific targets below:

Although there are no targets directly linked to the GSPC, many of the ideas from GSPC targets can be found in strategies and action plans on both national and cantonal level in Switzerland.

Please provide information on any active networks for plant conservation present in your country.

Please list any plant conservation groups or botanical garden networks working on plant conservation in your country.

- Plant conservation programs and networks of many Swiss Cantons
- Info Flora, National Plant Data and Information Centre in collaboration with the Canton's plant conservation programs
- Pro Natura, nationwide nature conservation NGO
- Hortus Botanicus Helveticae, the Swiss Botanical Gardens network, with growing collaboration in ex situ activities

Please describe the major measures taken by your country for the implementation of the Global Strategy for Plant Conservation. (Parties can report on actions taken to implement these targets if they are not covered in sections II, III or IV.)

If your country has adopted national targets or similar commitments related to the targets contained in the Global Strategy for Plant Conservation, please describe the actions taken and their contribution towards the attainment of the GSPC.

Switzerland has adopted an Action plan for the Swiss Strategy for Biodiversity in September 2017. Conservation of priority species is part of the implementation phase 2017-23 (Measures 4.1.4 and 4.3.4). This will be supported by the establishment of a national ecological infrastructure (Measure 4.2.1) which includes the implementation of the Emerald network of the Berne Convention which is established to protect endangered and typical species and habitats.

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level

GSPC Target 1, 2, 3…

Please assess your country's progress towards each of the targets of the Global Strategy for Plan Conservation. This template should be completed for each of the GSPC targets.

☐ On track to achieve target at national level

Check this box if the measures which have been taken and the current status of the issues addressed by the target will be met by the target deadline.

☐ Progress towards target at national level but at an insufficient rate

Check this box if significant progress towards the attainment of the target has been made since it was established. The progress could take the form of measures being taken or actual improvements in the status of the issues being addressed. However, while this category indicates an improving situation, the progress that has been made will be insufficient for the target to be met by the deadline unless further measures are taken.

☐ No significant change at national level

Check this box if no significant changes have been observed since the target was set. Reasons for this could include that the measures taken have not yet had an impact, the measures taken have been ineffective, or that no significant measures have been taken.

Please explain the selection above:

Please provide substantiating information for the selection above. For example, this could include information related to the overall impact of the measures taken, changes to the status and trends of biodiversity, changes to pressures on biodiversity or to the drivers of its loss, changes to socioeconomic conditions, such as awareness of biodiversity, changes in resource availability, changes to government policies, or changes in the behaviour of the major sectors in the country. For national targets which are quantitative in nature, countries may also wish to consider reporting on the extent of achievement in relation to the target value. For example, for some types of targets, this could be done with the use of percentages.

<Text entry>

GSPC Target 1: An online flora of all known plants

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description.

Some questions that your country may wish to consider responding to are: Is there a national or regional flora that provides descriptions to the plant species found in the country? Is work to digitize national/ regional flora taking place in the country? Does an institution in your country participate in or otherwise collaborate with the World Flora Online Consortium? In reporting on progress towards this target, countries may wish to refer to the website of The World Flora Online Consortium (www.worldfloraonline.org).

☒ On track to achieve target at national level

Info Flora, the Swiss flora data centre, releases updated checklists and provides identification keys for all indigenous species and most alien species. Identification tools and overview are only lacking for some apomictic genera. The Conservatoire et Jardin botaniques de la ville de Genève is one of the leading partners of the World Flora Online Consortium. The same institution is also significantly contributing to several national identification tools.

GSPC Target 2: An assessment of the conservation status of all known plant species, as far as possible, to guide conservation action

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description.

*Some questions that your country may wish to consider responding to are: How many plant species have had their conservation status assessed using either the IUCN 3.1 Categories and Criteria or a national system? What proportion of your country's flora has been assessed? How is data from conservation assessments being used to guide conservation actions? In reporting on progress towards this target, countries may wish to make use of information available from the IUCN Red List of Species (***Fehler! Linkreferenz ungültig.***http://www.iucnredlist.org/), and from Botanic Gardens Conservation International's ThreatSearch (http://www.bgci.org/threat_search.php) and PlantSearch (http://www.bgci.org/plant_search.php) databases.*

☒ On track to achieve target at national level

A revised and updated version of the Red List of vascular plants, elaborated using the IUCN standard methodology, was established in 2016 by the FOEN and Info flora (Bornand et al. 2016. Rote Liste der Gefässpflanzen). 2712 taxa have been assessed with 99 taxa thereof showing data deficiency (DD). No Red List status exists for those apomictic taxa that have not been updated in the checklist (see target 1).

GSPC Target 3: Information, research and associated outputs, and methods necessary to implement the Strategy developed and shared

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description.

Some questions that your country may wish to consider responding to are: How well surveyed is your country's plant diversity? Which areas are under-surveyed? What progress has been made since 2010 to improve knowledge on plant diversity patterns? What proportions of plant specimen

records that exist in national herbaria have been digitized? Are these records available for conservation assessment and land use planning? What proportion of the flora has been revised since 1970? Are ex situ propagation techniques and case studies on species reintroductions documented and available? Are resource assessments and sustainable offtake guidelines available for plant species harvested commercially?

☒ Progress towards target at national level but at an insufficient rate

All three main Swiss biodiversity monitoring programs collect data on plants. Their sampling grids cover all regions of Switzerland. However, some species are not sufficiently covered, especially the NT/VU-species. Those species would be important to follow as they can indicate a future success of conservation measures. A method for such an approach has been developed but has not yet been implemented. Complementary monitoring is thus needed to fill those gaps.

Citizen Science has become a major contribution to the country's plant diversity mapping and monitoring. By means of several projects, the Swiss Flora Data Centre "Info Flora" could mobilize up to 300 volunteers that carried out field controls, inventories, population census etc.

There are no materials and no outreach that mention the Global Strategy for Plant conservation. The Action plan for the biodiversity strategy also fails to mention it.

GSPC Target 4: At least 15 per cent of each ecological region or vegetation type secured through effective management and/or restoration

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description.

In reporting on progress towards GSPC Target 4, countries may wish to cross-reference their responses related to Aichi Biodiversity Targets 11(Protected areas) and 15 (Ecosystem restoration and resilience) in section IV of the national report. If the issues covered by GSPC Target 4 are sufficiently addressed in section IV, there is no need to repeat this information here.

☒ Progress towards target at national level but at an insufficient rate

Switzerland has established an official national vegetation classification with more than 200 habitat types, out of which some 50 types are listed as "worth protecting" in a federal ordinance. The first National Red List of habitat types has been published in 2017.

Switzerland still lacks a natural habitat map and only a few habitat types have been inventoried. The percentage of area secured thus cannot be assessed in general. Sufficient area is secured in only a handful of the inventoried habitat types. The area secured in forests (forest reserves) has increased since 2011. A project is ongoing to build a natural habitat map based on remote sensing and *in situ* observations.

The quality (in terms of plant diversity) of most habitats in Switzerland, especially those lacking protection, is declining. Despite renaturation work (NR6 2.1.1) many habitats that are legally protected are in an insufficient state and need to be remediated (NR6 4.15). Because of those pressures on natural habitats, the threat level of endangered plant often increases with time.

GSPC Target 5: At least 75 per cent of the most important areas for plant diversity of each ecological region protected with effective management in place for conserving plants and their genetic diversity

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description.

Some questions that your country may wish to consider responding to are: Have important plant areas been identified in your country? What is the percentage of important plant areas that are located within protected areas? What additional management is taking place in important plant areas outside of protected areas?
In reporting on progress towards this target, countries may wish to make use of Plantlife's Important Plant Area database (www.plantlife.org.uk/international/wild_plants/IPA/ipa_online_database/).

☒ Progress towards target at national level but at an insufficient rate

A first set of Important Plant Areas, based on Plantlife's assessment method, has been identified in 2016. To date, those areas have not been implemented, protected, nor specifically managed.

The measure 2.2.1 of the Action plan for the biodiversity strategy designs a countrywide ecological infrastructure that includes both protected areas from federal and regional inventories and links structures and corridor areas. The project is ongoing and IPAs are likely candidates for integration in the ecological infrastructure concept.

Despite the urgent need, Switzerland still lacks an instrument to establish "micro-reserves" as exists in other countries in Europe.

GSPC Target 6: At least 75 per cent of production lands in each sector managed sustainably, consistent with the conservation of plant diversity

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description.

In reporting on progress towards GSPC Target 6, countries may wish to cross-reference their responses related to Aichi Biodiversity Target 7(sustainable agriculture, aquaculture and forestry) in section IV of the national report. If the issues covered by GSPC Target 6 are sufficiently addressed in section IV, there is no need to repeat this information here.

☒ Progress towards target at national level but at an insufficient rate

While most of the production land of Switzerland is managed according to sustainability requirements, a recent report on the agricultural landscape (2016) noted that those efforts are not sufficient to ensure the long-term conservation of biodiversity and its ecosystem services (NR6 4.7). One of the main goals of the federal government's Forest Policy 2020 is to ensure sustainable forest management. Promoting biodiversity is also part of this goal. Among other things, the Forest Policy 2020 aims to increase the current area occupied by forest reserves within Switzerland's total forest area to 8 % (and to 10 % by 2030). In 2016, 6.3 % of Switzerland's forest area, was established as forest reserves. More than half of the forested area is certified by the FSC (Forest Stewardship Council).

Less than 5% of the agricultural area at low elevations is managed in a way that is sustainable for biodiversity. The situation improves at higher elevation but the amount of area sustainably managed for biodiversity sustainable remains overall below the national targets (Walter et al. 2012: Objectifs environnementaux pour l'agriculture). As a result, both the area and the quality of the production lands that are classified as "sustainably used" are not sufficient to hold or improve plant diversity.

GSPC Target 7: At least 75 per cent of known threatened plant species conserved *in situ*

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description.

Some questions that your country may wish to consider responding to are: What is the percentage of threatened plant species with at least one population occurring in a protected area? How many additional threatened species have been conserved since 2010? Have priority sites for the conservation of unprotected threatened plants been identified? What interventions are in place to expand protected areas to sites with high concentrations of threatened plants? In reporting on progress towards this target, countries may wish to make use of Botanic Gardens Conservation International's ThreatSearch (http://www.bgci.org/threat_search.php) and PlantSearch (http://www.bgci.org/plant_search.php) databases.

☒ Progress towards target at national level but at an insufficient rate

A total of 725 threatened plants are listed in the recent revision of the Swiss Red List of vascular plants. Among this set of species, 196 have high to very high priority for conservation action at the national level. Some 140 species have been analyzed in fact sheets. There exist action plans for about 60 of those species and only part of them are successfully implemented. It is estimated that conservation action is undertaken for only around 25% of the species of national priority. This includes less than 10% of all threatened species. Nevertheless, an unknown number of threatened species profit from habitat protection and from unspecific conservation measures (postponed mowing, clearing, etc.). It is thus overall estimated that between 25 and 50 per cent of the threatened plant species are actually conserved *in situ*.

GSPC Target 8: At least 75 per cent of threatened plant species in *ex situ* collections, preferably in the country of origin, and at least 20 per cent available for recovery and restoration programmes

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description.

Some questions that your country may wish to consider responding to are: What is the percentage of threatened plant species that are conserved ex situ, either in seedbanks or living collections in botanical gardens or other plant collections? What percentage is available for restoration or recovery work? How many species are part of active recovery programmes? In how many different ecoregions is the recovery work taking place? Are any botanic gardens in your country members of the Ecological Restoration Alliance of Botanic Gardens? Your country may also wish to provide references to recovery case studies. In reporting on progress towards this target, countries may wish to make use of information available from Botanic Gardens Conservation International's ThreatSearch (http://www.bgci.org/threat_search.php) and PlantSearch (http://www.bgci.org/plant_search.php) databases and from the Ecological Restoration Alliance website (www.erabg.org).

☒ Progress towards target at national level but at an insufficient rate

Many Botanic Gardens in Switzerland have strengthened their efforts in *ex situ* cultures of threatened species. However, there exists no countrywide overview of the *ex situ* collections to date. The Conservatoire et Jardin Botaniques in Geneva has implemented a national threatened plants seed bank that needs to be fueled in the coming years. The NGO Pro Natura has developed a program for restoring grasslands with regional, autochthonous seeds (project "Regio-Flora"). All those efforts for *ex situ* and restoration activities are in the need of more coordination and steering.

GSPC Target 9: 70 per cent of the genetic diversity of crops including their wild relatives and other socio-economically valuable plant species conserved, while respecting, preserving and maintaining associated indigenous and local knowledge

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description.

In reporting on progress towards GSPC Target 9, countries may wish to cross-reference their responses related to Aichi Biodiversity Target 13 (Safeguarding Genetic Diversity) in section IV of the national report. If the issues covered by GSPC Target 9 are sufficiently addressed in section IV, there is no need to repeat this information here.
Some questions that your country may wish to consider responding to are: Does your country have a national inventory of crop wild relatives and other socioeconomically important plant species (medicinal plants, fodder crops, useful tree species, etc.)? Does your country have a national strategy for the conservation of crop wild relatives/medicinal plants? Is there a national programme for plant genetic resources for food and agriculture? What is the percentage of crop wild relatives and other socioeconomically important species that are conserved ex situ in seedbanks or in living collections in botanical gardens and other plant collections? What is the percentage of crop wild relatives and other socioeconomically important species that are conserved within protected areas or through on-farm conservation? In reporting on progress towards this target, countries may wish to make use of information provided to the FAO through their national report for the Second State of the World's Plant Genetic Resources for Food and Agriculture (http://www.fao.org/agriculture/crops/core-themes/theme/seeds-pgr/sow/sow2/country-reports/en/).

☒ Progress towards target at national level but at an insufficient rate

The Swiss national list of crop wild relatives will be revised in 2018, but there is no strategy for the conservation of CWR inside Switzerland so far. The conservation and promotion of genetic diversity in crop plants is covered in the section IV (NR6 4.13).

GSPC Target 10: Effective management plans in place to prevent new biological invasions and to manage important areas for plant diversity that are invaded

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description.

In reporting on progress towards GSPC Target 10, countries may wish to cross- reference their responses related to Aichi Biodiversity Target 9 (Invasive alien species prevented and controlled) in section IV of the national report. If the issues covered by GSPC Target 10 are sufficiently addressed in section IV, there is no need to repeat this information here. Some additional questions that your country may wish to consider responding to are: Has your country identified important plant areas (this issue may have already been addressed as part of your country's response to GSPC Target 5)? How many of these have management plans that address invasive species?

☒ Progress towards target at national level but at an insufficient rate

The control of invasive alien species is included by default in most protected areas management plans. The implementation in 2018 of the Swiss Invasive Alien Species Strategy will complete the existing measures in order to achieve the objectives of the strategy (NR6 4.9).

GSPC Target 11: No species of wild flora endangered by international trade

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description.

GSPC Target 11 is implemented through the activities delivered under the implementation of the provisions and control measures of the Convention on Trade in Endangered Species of Wild Fauna and Flora (CITES). In reporting on progress towards GSPC Target 11, countries may wish to refer to the respective CITES Management and Scientific Authorities, as well as the reports prepared within the framework of the CITES Plants Committee, Standing Committee, Conference of Parties, and other meetings relevant to trade in plants.
In reporting on progress towards GSPC Target 11, countries may wish to cross-reference their responses related to Aichi Biodiversity Target 4 (Sustainable production and consumption) in section IV of the national report. If the issues covered by GSPC Target 11 are sufficiently addressed in section IV, there is no need to repeat this information here.
In reporting on progress towards this target, countries may also wish to make use of information available from the Plants 2020 website (http://www.plants2020.net/target-11).

☒ On track to achieve target at national level

The federal Act on the Circulation of Species of Fauna and Protected Flora BGCITES (SR 453) entered into force for Switzerland on 1 October 2013. With the new federal law, the 1973 Convention on International Trade in Endangered Species of Wild Fauna and Flora CITES is implemented in a formal law and the related ordinance (Ordinance on the on the Circulation of Species of Fauna and Protected Flora VCITES). Switzerland harbors 77 species of wild plants included in CITES appendixes (73 species of Orchidaceae, 3 species of Cyclamen and *Adonis vernalis*). None of these species are endangered by international trade.

GSPC Target 12: All wild harvested plant-based products sourced sustainably

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description:

In reporting on progress towards GSPC Target 12, countries may wish to cross-reference their responses related to Aichi Biodiversity Target 4 (Sustainable production and consumption) in section IV of the national report. If the issues covered by GSPC Target 12 are sufficiently addressed in section IV, there is no need to repeat this information here.
Some additional questions that your country may wish to consider responding to are: Does your country have an inventory of plant-based products that are sourced from the wild? What is the percentage of wild-harvested commercially traded plants that have resource assessments, management plans and sustainable offtake guidelines? Are there specific regulations or policies encouraging and enforcing sustainable wild-harvesting, sustainable use and trade in plants (please specify)? Are any products, species or companies in your country certified under sustainability certification, such as the FairWild Standard (please specify)? What interventions are in place to ensure the sustainable wild-harvest and use of plant species by indigenous communities?
In reporting on progress towards this target, countries may wish to make use of information available from the Plants 2020 (http://www.plants2020.net/index/) and FairWild Foundation (http://www.fairwild.org) websites.

☒ On track to achieve target at national level

Switzerland does not have an inventory of plant-based products sourced from the wild. Apart from timber production there is no wild-harvesting reaching a level that might threaten plant species. Sustainable use of natural resources is anchored in the Federal Constitution (NR6 4.4)

GSPC Target 13: Indigenous and local knowledge innovations and practices associated with plant resources, maintained or increased, as appropriate, to support customary use, sustainable livelihoods, local food security and health care

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description.

In reporting on progress towards GSPC Target 13, countries may wish to cross-reference their responses related to Aichi Biodiversity Target 18 (Traditional knowledge respected) in section IV of the national report. If the issues covered by GSPC Target 13 are sufficiently addressed in section IV, there is no need to repeat this information here.

Since Switzerland has no indigenous communities as understood by the Convention and the use of wild plant resources is insignificant (apart from forestry), target 13 is not applicable.

GSPC Target 14: The importance of plant diversity and the need for its conservation incorporated into communication, education and public awareness programmes

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description.

In reporting on progress towards GSPC Target 14, countries may wish to cross-reference their responses related to Aichi Biodiversity Target 1 (Awareness increased) in section IV of the national report. If the issues covered by GSPC Target 14 are sufficiently addressed in section IV, there is no need to repeat this information here. For plant-specific activities, countries may also wish to make use of Botanic Gardens Conservation International's GardenSearch database (www.bgci.org/garden_search.php).
Some additional questions that your country may wish to consider responding to are: Does your country have citizen science programmes that include collecting data on plants? Do your botanic gardens run education programmes? Are there other nature-based NGOs that provide non-formal education on plants?

☒ Progress towards target at national level but at an insufficient rate

While most of the Swiss population is familiar with the concept of biodiversity, the Swiss rate the state of native biodiversity too positively (NR6 4.1). Several instances (Federal, cantonal and communal governments, the Swiss Biodiversity Forum, private organisation and NGOs, etc.) are active in raising awareness on biodiversity state and conservation need which is essential and also covers plant related issues.

Citizen Science has become a major subject in the last few years. The Swiss flora data centre (Info Flora) is the most substantial organisation for stimulating and maintaining a network of Citizen Scientists that are active for plant conservation issues.

In some cantons, the botanical societies are very active and run their own inventory programs. Consequently, the number of young botanists is increasing in those cantons as they benefit from the experiences of the older, more experienced botanists.

GSPC Target 15: The number of trained people working with appropriate facilities in plant conservation increased, according to national needs, to achieve the targets of this strategy

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description.

Some questions that your country may wish to consider responding to are: How many universities/colleges offer tertiary-level education in plant science/plant conservation? Do plant conservation-based organizations offer internships/short courses, etc., to support on-the-job training and skills development?
In reporting on progress towards this target, countries may wish to make contact with relevant members of the Global Partnership for Plant Conservation (http://www.plants2020.net/gppcpartners/).

☒ Progress towards target at national level but at an insufficient rate

In the recent years, biodiversity related courses and, specifically, the need for plant conservation, has almost disappeared in school, high school and University curriculums. The major shortcoming in plant conservation is the creeping loss of knowledge in plant systematics and systematics in general due to the suppression of many professorships. In order to counteract this development, the Swiss Systematic Society (SSS) was founded in 2005. The SSS is a scientific society open to both professionals and amateurs. The basic objective of the SSS is to make sure that expertise in systematics is guaranteed in the long term in Switzerland. Some NGOs offer education programs or internships and collaborate more and more with Universities, but this can only partly compensate the gaps in official education. The Swiss Botanical Society has developed, in collaboration with Info Flora a system of knowledge certification with regular and public certification exams. This system, implemented in 2012, has been very successful and seems to stimulate both course attendance and self-education.

GSPC Target 16: Institutions, networks and partnerships for plant conservation established or strengthened at national, regional and international levels to achieve the targets of this Strategy

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description.

Some questions that your country may wish to consider responding to are: Is there a national botanic garden network in your country? Is there a national plant conservation network or a national botanical society that is actively addressing the targets of the GSPC?
In reporting on progress towards this target, countries may wish to make use of Botanic Gardens Conservation International's list of botanic garden networks (www.bgci.org/about-us/networks/).

☒ Progress towards target at national level but at an insufficient rate

The cantons are responsible for the implementation of biodiversity conservation measures including plant related actions. Up until recently, the collaboration in a network for plant conservation (or even species conservation as a whole) was rather weak. Hopefully, the situation is improving through inter-cantonal collaboration and the reinforcement of the coordination role of Info Flora. However, overall personal and financial capacities have not increased and are even being further reduced. Moreover, platforms sharing for best practice examples should be established and maintained in a sustainable way so that all stakeholders may profit from the experience of other.

The association Hortus Botanicus Helveticus, created in 1996, unites 31 Swiss botanical gardens and collections. The goals of the HBH include, among others, the conservation and development of plant collections, the implementation of activities of public interest and the maintenance and development of technical capacities and knowledge of the various institutions.

At the international level, Switzerland is also engaged in Global Crop Diversity Trust and in the strengthening of the International Treaty on Plant Genetic Resources for Food and Agriculture.

6 Section VI. Additional information on the contribution of indigenous peoples and local communities (completion of this section is optional)

This part will not be completed by Switzerland.

7 Section VII. Updated biodiversity country profile

7.1 Biodiversity facts

Status and trends of biodiversity, including benefits from biodiversity and ecosystem services and functions:

Switzerland's topography has huge variations in elevation, diverse geology, a heterogeneous rainfall distribution and a variety of traditional forms of management for a wide range of habitats that each have their own typical species. Research has described 235 different types of habitats, including, for example, moraines with pioneer vegetation, warmth-loving dry grasslands and downy oak forests. However, this diversity is under tremendous pressure. Around half of the surveyed habitat types are deemed to be threatened. Only remnants of many habitats still exist. Over the last 150 years, 247 animal and plant species have become or are presumed to have become extinct. Today, 41% of the evaluated animal species are included on the Red Lists; 28% of flowering plants and ferns have disappeared or are threatened; for fungi, bryophytes and lichens, the proportion is 32%, 42% and 41%, respectively. If species of flora and fauna that are near threatened are also considered, the proportion requiring support rises to 46%. Switzerland has a rather low degree of endemism. Thirty-nine species occur only in Switzerland and 138 are part-endemics that are mainly present in Switzerland but which distribution area sometimes spread beyond the country borders. Species diversity is particularly high on the northern and southern limits of the Alps due to altitudinal differences providing numerous habitats for plants and animals. Low diversity resulting from habitat destruction from large-scale intensive cultivation is observed in the Central Plateau. Since the 20th century, genetic diversity in agriculture has declined due to intensified agricultural practices causing numerous traditional breeds and varieties to be threatened with extinction today. A study focused on the genetic data of fish populations (salmonids) revealed that, despite intensive fish stocking programs, indigenous biogeographic populations with genetic peculiarities continue to exist.

Richly structured agricultural land and its fields, pastures, borders, shrubs, vineyards, lines of trees and vegetable gardens offer valuable substitute habitats for countless animal and plant species and soil organisms. At this time, 35 percent of the habitat types in agricultural areas are assessed as threatened. Dry meadows and oat-grass fields, which are less intensively used and fertilised only with manure, have decreased dramatically. In the Central Plateau, oat-grass fields have receded to merely two to five percent of their original area as a result of more intensive agriculture use; and dry meadows and pastures in Switzerland lost around 95 % of their area between 1900 and 2010. Species diversity is generally higher in landscapes with dry meadows and pastures, particularly in terms of vascular plants and butterflies, than in normal landscapes. In the last 20 years, the remaining area has decreased again by about one-fifth. The BDM records show a continuing negative trend in the number of species of the grassland mosses group and stagnation in the vascular plants group. As regards plants, the increasing spread of forest species and nutrient-loving plant species has been observed, especially at middle altitudes. The species composition is increasingly poorer there. The high nitrogen inputs from the air also contribute to the increasingly uniform vegetation and to the large-scale over-fertilisation of near-natural ecosystems. The intensive use of plant protection products harms biodiversity on cropland. Regular herbicide use impoverishes the seed bank in the soil, resulting in species-poor, grass-dominated weed communities. The flora associated with cropland is now among the most threatened plant groups in Switzerland: 42 % of its species are considered threatened. Swiss agricultural policy has developed various instruments to promote biodiversity in grasslands and croplands. For example, to obtain direct payments for proof of ecological performance, the federal government requires 7 % of the area used for agriculture (3.5 % for special crops) to be designated as area reserved for promoting biodiversity. At the end of 2015, this area covered approximately 15 percent of the area used for agriculture in Switzerland Since 1996, organic farming has steadily increased, covering approximately 14% of the utilized agriculture area (UAA).

Forest area covers today a third of Switzerland. Between 1985 and 2013, forest area has remained stable in the Jura and Plateau. In the Alps and on the south part of the Alps, she has increased depending on the region from 8% to 28%. These developments are the result, on the one hand, of the strict legal protection of the forest area (prohibition on deforestation) and, on the other hand, of the decline in agricultural use in locations that are difficult to access. The changes in forest management over the past 150 years have led to forests becoming darker and richer in stocks. As a result, light- and heat-loving species have been displaced. At the same time, however, tree species and structural diversity, the proportion of natural regeneration and the volume of deadwood, an essential basis for many species, have also increased. During the last years, the forest reserves area has continuously increased from 4.8% in 2012 to 6.3% in 2016. The current value is still lower than the goal of 8% by 2020 and 10% by 2030 as stated in the forest policy. Since the revision of the Forest Act in 1991, requiring owners and foresters to use near-natural forest management, Switzerland's forest is of comparatively good ecological quality. Yet, the atmospheric input of biologically active nitrogen contributes to the over-fertilization of forest ecosystems resulting the homogenization of plant communities. Indeed, common nitrophilous species replace less common specialists. Economic conditions continue to fundamentally shape the type of intensity of land use, partially explaining the differences in the state of biodiversity with respect to farmland and forests.

Slightly over half (54%) of Swiss watercourses are in an eco-morphologically natural/near-natural state, while the proportion of rivers with insufficient status varies regionally (15% in the Alps, 36% in the Jura, 38% in the Central Plateau) with the rate being highest (46%) in densely populated alpine valleys below 600 m asl. The quality of the high-altitude watercourses of the Alps has been maintained. Areas of raised bog and fen of national importance have been roughly maintained however the quality of the mires has clearly declined.

Humans have been modifying mountain ecosystems for centuries. The breeding of domestic animals and the cultivation of crop plants, as well as various uses of forests and grasslands, have influenced the biodiversity of the alpine region. Most summer pastures and dry pastures and meadow that are within the richest habitats in the alpine region have a human origin. Modification of the farming practices occurring in the last decades are changing the landscape. Elements like single trees, hedges and orchards have been systematically removed, resulting in the disappearance of important habitats for animals and plants. Global changes also affects alpine environments in Switzerland. Changes in precipitation patterns and rising temperatures have resulted in the shrinking of glaciers and snow-covered areas, reducing the water holding capacity of mountain ranges. The Great Aletsch Glacier receded by about 3000m since 1900. The flora on 37 mountain summits of altitudes between 2800 m and 3400 m were recorded at the beginning and end of the 20th century, demonstrating a strong increase in the number of plant species. On average, the number of species was about 62% higher and on some summits (Piz Mutèr, Beaufort) the plant diversity tripled. The Swiss Biodiversity Monitoring recorded since 2001 an increase of 15% of the distribution of heat-loving plant species. Species (sometimes endemics) bound to cold living conditions are displaced upwards can become "trapped" on the summits, leading to their potential.

The growing population, desire for more living space, necessary densification and greater mobility increase the pressure on biodiversity in settlement areas. Meanwhile, 60 percent of the settlement area and 4.7 percent of the entire surface area of Switzerland is sealed. Typical habitats for settlement areas such as fallow land, strips of pioneer vegetation, tree-lined avenues and old, near-natural garden spaces are noticeably disappearing. At over 80 percent, the percentage of structure-lined and culverted waterbodies in the settlement area is nearly four times higher than Switzerland's national average. In the meantime, 26 percent of all habitat types in the settlement area are considered threatened. According to the BDM, settlements have the highest percentage of surveyed area where absolutely no vascular plants, moss and molluscs have been found. The artificial light used in settlements also has negative impacts. Between 1994 and 2012, light emissions more than doubled in Switzerland. The area with nocturnal darkness decreased from around 30 % (1994) to 20 % (2012). Not a single square metre of the Central Plateau has had absolute darkness at night since 1996.

In 2016, the total production value (goods and services) of Swiss agriculture amounted to about CHF 10 286 million to which agricultural goods contributed CHF 9 142 million. Many insect species including the more than 600 wild bee species contribute importantly to the national economy by pollinating cultural and wild plants. Forests are natural suppliers of water with 46% of Swiss groundwater zones existing in forests. Moreover, about 50% of Swiss forest area protects infrastructure against natural hazards such as avalanches, rock fall, landslides, debris flow. In 2017, more than 50% of Swiss forests were certified according to the Forest Stewardship Council (FSC) standard. Inland water resources provide many services: glaciers, surface water and groundwater store and provide water for drinking and irrigation; surface waters allow a catch of 1350 tons of fish in 2014; alluvial zones retain water and weaken flood events; waterside areas provide recreational venues; hydropower covers about 60% of the country's electricity demand. The seasonal water discharge from the Alps serves as a water tower for Europe as most water flows down in summer when precipitation is lowest in the neighboring countries. For more than a century, mountainous landscapes have also been of high value for the tourism industry.

Main pressures on and drivers of change to biodiversity (direct and indirect)
In most cases, the threat faced by habitats and their species communities in Switzerland cannot be attributed to one single factor, but rather the simultaneous occurrence of different causes whose effects may be reinforced by one another.

One of the reasons for the continuing loss of biodiversity is the strong growth of settlement areas. Between 1985 and 2009, the percentage of settlement area in Switzerland increased by 23 percent. Land use was particularly high in the valleys of Ticino, Valais and Grisons as well as in the Central Plateau, where the settlement percentage in that period grew twice as fast as the national average. Today, 0.69 square metres are sealed per second or transformed in most cases into species-poor lawns (golf courses, sports facilities, etc.). The spread of settlements and infrastructures also causes the division of habitats into separate, disconnected areas and the isolation of animal and plant populations. Species populations and their genetic diversity are becoming smaller, which increases the risk of extinction. In the Central Plateau, landscape fragmentation has doubled in the last 30 years.

Between 1985 and 2009, 54,516 hectares of agricultural area were transformed into settlement area (of which 60 % is sealed). This corresponds to two-thirds of the agricultural area that was lost during this period. Another 9,302 hectares moved to the "Forest and Semi-Natural Areas" category. Forest has spread, especially at higher elevations, into remote and steep areas, due to the abandonment of agriculture. The remaining agricultural land is often farmed with large quantities of fertilisers and pesticides. Small structures continue to be removed from agricultural land, causing countless species to lose their habitats. Wetlands are drained or filled in. Swiss watercourses are also used intensively, particularly for electricity production or agricultural irrigation. The cost-covering remuneration for feed-in to the grid for electricity from renewable energies has also triggered numerous projects for small hydropower plants, which may increase the pressure on water habitats.

An average of 19 kilogrammes of nitrogen per hectare currently enters the soil every year in Switzerland solely through atmospheric inputs. This represent up to ten times the natural input quantity. Reactive nitrogen compounds enter distant, sensitive ecosystems through the air. For that reason, 100 % of all raised bogs, 84 % of fens, 42 % of dry meadows and pastures, and 95 % of forests are affected by excessive nitrogen inputs from the air. In addition to direct habitat destruction, extensive nitrogen inputs have become one of the greatest threats to biodiversity in Switzerland

Since the middle of the last century, consumption in Switzerland has increased immensely. It affects biodiversity indirectly through land use, the demand for raw materials, environmental pollution from transport and energy demand as well as both upstream and downstream of the entire value chain. Switzerland's biodiversity footprint is far in excess of a level that can be accommodated by the planetary boundaries. It has increased significantly in recent years. The rising resource consumption is causing an ever larger share of the consumption-based biodiversity footprint to take its toll abroad: It was just over half in 1996 and more than roughly two-thirds in 2011. This high share is tied to the fact that Switzerland's small open economy is increasingly dependent upon imports. The environmental pollution

caused by Switzerland has not grown to the same extent as its economy in the last 15 years, which means that resource efficiency has improved. However, Switzerland still has a ways to go before it reaches environmentally-friendly resource consumption levels.

Invasive alien species have become a growing problem. 107 of the more than 800 alien animal, plant and fungus species established in Switzerland are assessed as invasive. They cause ecological damage by replacing native species, mixing genetically with them, causing illness (e.g. crayfish plague, death of ash trees, chytridiomycosis) or diseases and transferring parasites to local species. Their emergence in valuable habitats such as alluvial zones or amphibian spawning sites is particularly problematic. For example, Japanese knotweed and goldfish cause ecological damage. Invasive alien species may continue to increase in large numbers in the future because the transport of persons and goods is growing around the world and climate change is creating better environmental conditions for many of these species.

7.2 Measures to enhance the implementation of the Convention

Implementation of the NBSAP

The Swiss Landscape Concept (1997) served as the original strategy for implementing the CBD based on spatial (landscape) planning. The Swiss Parliament responded to the loss of biodiversity and the corresponding international developments by including the development of a Swiss Biodiversity Strategy into the legislature planning for 2007-2011 on 18 September 2008. The Federal Council resolution of 1 July 2009 mandated the Federal Department of the Environment, Transport, Energy and Communications (DETEC) to develop such a strategy. The Swiss Biodiversity Strategy (SBS), which was passed by the Federal Council on 25 April 2012, contains ten strategic objectives for the promotion and long-term conservation of biodiversity. It is intended to provide orientation for all actors so that they can jointly attain sufficient impacts and obtain clear results.

The Swiss Biodiversity Strategy states the following as its overall objective: "*Biodiversity is rich and has the capacity to react to change. Biodiversity and its ecosystem services are conserved in the long term*". The ten strategic goals are coordinated with each other, their implementation is mutually influential and supportive, and they are based on the Aichi Biodiversity Targets.

With its resolution of 25 April 2012 on the SBS, the Federal Council mandated the Federal Department of the Environment, Transport, Energy and Communications (DETEC) to develop an Action Plan that substantiates the objectives of the SBS and proposes a general package of measures for their attainment. The development of the Action Plan for the Swiss Biodiversity Strategy (Biodiversity Action Plan) is an element of the legislature planning for 2011-2015 and 2015-2019.

The Federal Council was particularly concerned that the measures be developed on the basis of a participative process so that broad acceptance could be achieved among the partners and actors affected by their implementation. It was also aimed to identify possible conflicts of interest through intensive dialogue. The development of an initial package of measures under the auspices of the Federal Office for the Environment (FOEN) was carried out with the involvement of 650 experts from 250 associations and organizations. The proposed measures were examined, evaluated, substantiated and bundled by the FOEN and other federal offices. An initial version of the Biodiversity Action Plan comprising 110 measures was completed by late 2013. The work carried out on its further refinement focused on the question as to whether and to what extent the ten objectives of the Swiss Biodiversity Strategy can be achieved through the measures contained in the Biodiversity Action Plan.

On 18 February 2015 the Federal Council decided to present to the cantons for pre-consultation the measures whose implementation would affect them directly in relation to both finance and human resources. Most cantons were agreeable to both the general thrust of the measures and the proposed temporal horizon for their implementation. Based on the reports from the cantons, the measures contained in the Biodiversity Action plan were then examined from the perspective of synergies and duplication. The results of the pre-consultation process were summarized in a report.

Following the pre-consultation process, taking the reports of the cantons and activities that had already been initiated or implemented into account (e.g. elimination of measures that had already been implemented such as the development of a strategy on invasive alien species), the FOEN then revised and consolidated the catalogue of measures in multiple stages. The measures were prioritized, bundled and phased based on their effect, urgency and financeability.

To enable the most urgent deficits in relation to biodiversity in Switzerland to be tackled, on 18 May 2016 the Federal Council decided to invest an additional CHF 55 million in the areas of nature conservation and forest biodiversity: an additional CHF 80 million was re-allocated from the FOEN's budget for this purpose (immediate measures). This means that the Confederation can spend a total of CHF 135 million on urgent remediation and upgrading measures in biotopes of national importance, on promotional measures in the area of forest biodiversity, and on the eradication of invasive alien species in the period 2017 to 2020. The cantons contribute a similar sum to the financing of the immediate measures. The legal framework for the implementation of the immediate measures is provided by both the Protection of Nature and Cultural Heritage Act and the Forest Act. The allocation of the finance is based on the targets and measures contained in the manual for programme agreements in the area of the environment (Handbuch Programmvereinbarungen im Umweltbereich).

The urgent need for action in relation to biodiversity is undisputed. However, political reality and, particularly, financial and temporal conditions in Switzerland pose an obstacle to the implementation of measures in support of biodiversity. The tense budgetary situation and efforts to achieve savings at federal and cantonal levels considerably limit the capacity to provide additional financial and human resources for improving the state of the environment and guaranteeing the provision of these resources for extended periods. For this reason, the practical implementation of the measures contained in the Action Plan will take place in phases and across extensive areas using existing resources.

Two implementation phases are currently planned. Implementation Phase I covers the years 2017-2023 and Implementation Phase II the years 2024-2027. The end of Implementation Phase I and all of Implementation Phase II are deliberately aligned with the periods set out in the programme agreements between the Confederation and cantons in the area of the environment. The programme agreements are a federal subvention instrument for joint tasks in the area of the environment. This enables the more efficient and effective use of existing resources for the benefit of biodiversity. At the same time, in the context of the programme agreements the Confederation can define priorities for the promotion of biodiversity, and the cooperation between the Confederation and cantons in the implementation of corresponding measures can be intensified.

Implementation Phase I: 2017-2023. Implementation Phase I involves the implementation of measures for the urgent reinforcement of policy execution (immediate measures), synergy measures and, from 2019, pilot projects.

Impact Analysis 2022 and Financial Decision 2023. All measures and pilot projects included in Implementation Phase I will be evaluated in 2022 in relation to their ecological and economic impact on the conservation and promotion of biodiversity. This impact analysis will form the basis for the substantive and financial decisions in relation to Implementation Phase II. Applications for the continuation of measures or projects or the inclusion of additional measures in the Biodiversity Action Plan will be presented to the Federal Council in 2023 at the latest.

Implementation Phase II: 2024-2027. Measures from Implementation Phase I will be continued, adapted or supplemented by additional measures during Implementation Phase II. From today's perspective, the continuation of the immediate measures for the urgently required reinforcement of pol-icy execution for the benefit of biodiversity will be essential. The existing deficits are so extensive that they cannot be completely eliminated by the end of 2023. In addition, it is planned to carry out measures in Implementation Phase II that could not be included in Implementation Phase I due to a lack of resources. These include, for example, measures in the areas of research, education and further training, and data management.

Overall Evaluation 2026 and continuation of the Biodiversity Action Plan after 2027. Implementation Phase II includes an overall evaluation for the assessment of the Swiss Biodiversity Strategy and its implementation. The results of the remediation efforts made by the cantons up to then and the remaining deficits will also be demonstrated. The Overall Evaluation of 2026 will also act as a decision basis for the continuation of the Biodiversity Action Plan after 2027. The conservation and promotion of biodiversity will continue to be a vital task to be carried out in the interest of the population after 2027.

Overall actions taken to contribute to the implementation of the Strategic Plan for Biodiversity 2011-2020

As indicated above, the 2020 Aichi Biodiversity Targets were taken into account in the development of the Swiss Biodiversity Strategy and Action Plan. The 26 measures listed in the Action Plan are therefore supporting the implementation of the Aichi Biodiversity Targets.

Support mechanisms for national implementation (legislation, funding, capacity-building, coordination, mainstreaming, etc.)

A new system of financial equalization and division of tasks between the federal government and the cantons was created in 2008 whereby, together, these two levels of government agree on programmes, define the targets each intends to achieve and identify federal subsidies available for funding activities. The cantons are free to organize implementation actions as they see fit, while the municipalities are responsible for the actual implementation of the actions defined by the canton. The legal framework for implementing the CBD includes national legislation such as: Federal Constitution, Federal Act on Protection of Nature and Cultural Heritage, Federal Act on the National Park in Canton Grison, Federal Act on Hunting and Protection of Wild Mammals and Birds, Federal Act on Fishery, Federal Act on the Protection of the Environment, Federal Act on Forests, Federal Act on Agriculture. National action plans and programmes are also relevant to implementation, including the Swiss Landscape Concept, Landscape 2020, National Ecological Network, Master Plan for Arable Land, General Environmental Objectives for Agriculture, Forest Policy 2020, among others.

Financial incentives are being used to promote conservation activities. For example, direct payments are awarded to farmers who cultivate 7% of their utilized agricultural area as “area reserved for promoting biodiversity”. Another successful financial incentive relates to conserving dry grasslands through contracts between farmers and cantonal authorities using the “biodiversity as a product” model which focuses more on a holistic approach to conserving dry grasslands and surrounding biotopes.

Many private organizations are involved in the conservation of Switzerland’s animal and plant genetic resources such as Pro Specie Rara and the Swiss Association for the Protection of Fruit Heritage.

Mechanisms for monitoring and reviewing implementation

Biological diversity monitoring in Switzerland and its connection to other environmental monitoring programmes is required under the Ordinance on the Protection of Nature and Cultural Heritage (NCHO Art. 27a). By signing the Convention on Biodiversity in Rio in 1992, Switzerland also committed to monitor its biological diversity over the long term. The Confederation uses several monitoring programmes to observe various areas of the environment, such as soil, bodies of water, landscape, air and forest. Four monitoring programmes are specifically focused on Switzerland’s biodiversity: Biodiversity Monitoring Switzerland (BDM), Agricultural species and habitats monitoring (ALL-EMA), Monitoring the effectiveness of habitat conservation in Switzerland (WBS), Red Lists. Swiss hunting and fishing statistics, the Swiss breeding bird atlas, the Swiss National Forest Inventory, the biological studies of the national soil monitoring programme, the national observation of surface water quality, the national landscape monitoring, the national air pollution monitoring network and collections of national data and information centres (Info Species) all contribute to the recording of biodiversity.