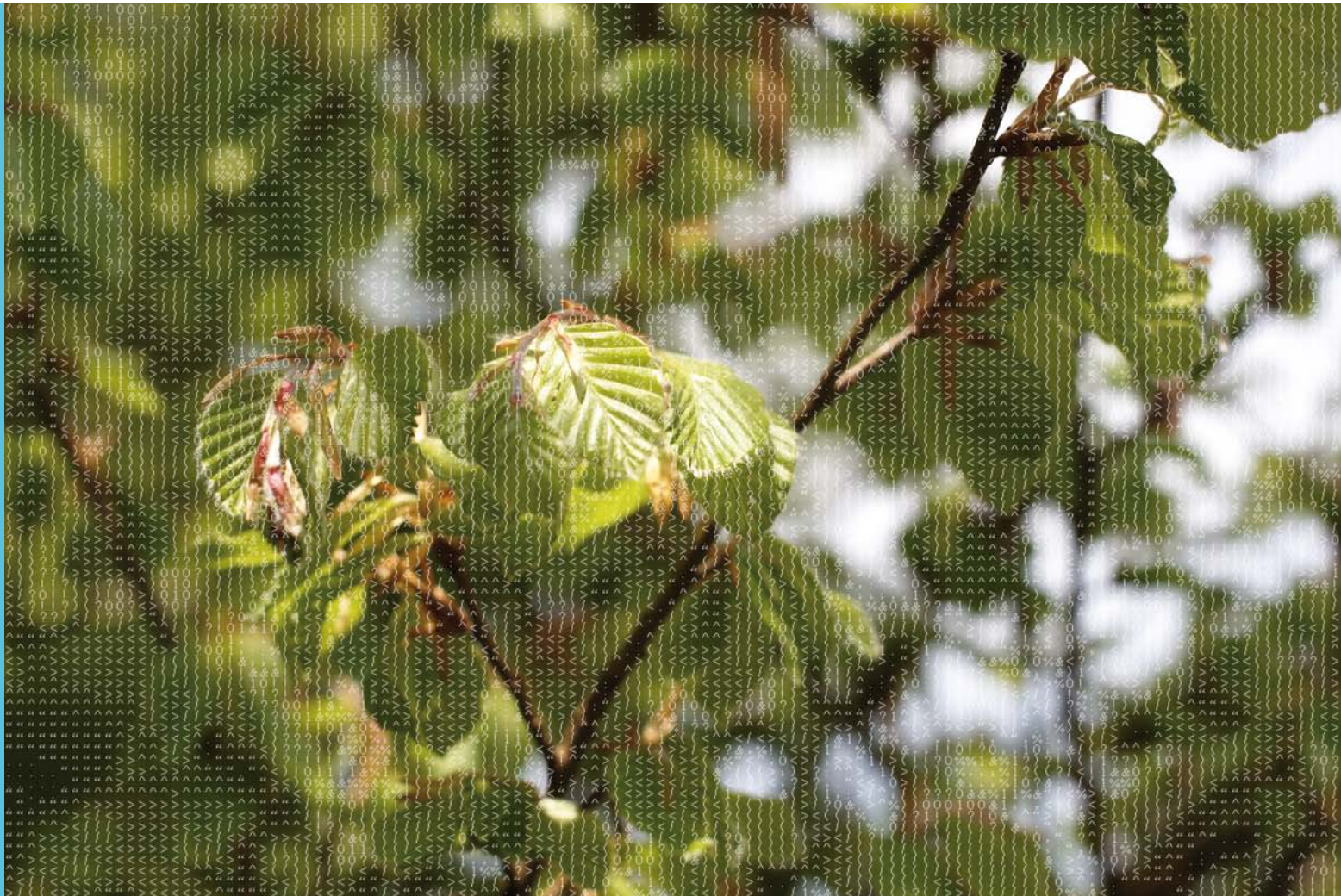

> Forest Policy 2020

*Visions, objectives and measures for the sustainable management of
forests in Switzerland*



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

> Forest Policy 2020

*Visions, objectives and measures for the sustainable management of
forests in Switzerland*

*The visions, objectives and strategic directions were passed by the Federal Council on 31 August 2011
and the Action Plan was subsequently developed by the Federal Department for the Environment,
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> Abstracts

The Swiss Confederation's Forest Policy 2020 formulates provisions for the optimal coordination of the ecological, economic and social demands on the forest. It ensures sustainable forest management and creates favourable conditions for an efficient and innovative forestry and wood industry. The Forest Policy 2020 defines a total of eleven policy objectives. These concern wood harvesting potential, climate change, protective forest, biodiversity, forest area, the economic efficiency of the forestry sector, forest soil (including drinking water and tree vitality), protection against harmful organisms, the forest-wildlife balance, the leisure and recreational use of forests, and education and research (including knowledge transfer). The Forest Policy 2020 formulates several strategic guidelines and various measures for each objective. The primary responsibility for these measures lies with the federal authorities, however the role of the cantons and other actors is also addressed (forest owners, managers, forestry experts, associations etc.). Finally, the legal and financial impacts of the Forest Policy 2020 are also presented.

Mit der Waldpolitik 2020 stimmt der Bund die ökologischen, ökonomischen und gesellschaftlichen Ansprüche an den Wald optimal aufeinander ab. Er stellt eine nachhaltige Bewirtschaftung sicher und schafft günstige Rahmenbedingungen für eine effiziente und innovative Wald- und Holzwirtschaft. Die Waldpolitik 2020 legt insgesamt elf Ziele fest. Diese betreffen das Holznutzungspotenzial, den Klimawandel, die Schutzwaldleistung, die Biodiversität, die Waldfläche, die wirtschaftliche Leistungsfähigkeit der Waldwirtschaft, den Waldboden (inkl. Trinkwasser und Baumvitalität), den Schutz vor Schadorganismen, das Gleichgewicht von Wald und Wild, die Freizeit- und Erholungsnutzung sowie die Bildung und Forschung (inkl. Wissenstransfer). Für jedes Ziel formuliert die Waldpolitik 2020 mehrere strategische Stossrichtungen sowie verschiedene Massnahmen. Mit den Massnahmen ist in erster Linie der Bund in der Pflicht, es werden jedoch auch die Rolle der Kantone sowie weiterer Akteure angesprochen (Waldeigentümer, Bewirtschafter, Waldfachleute, Verbände etc.). Schliesslich werden auch die rechtlichen und finanziellen Auswirkungen der Waldpolitik 2020 aufgezeigt.

Keywords:

forest, policy, sustainability, wood harvesting, climate change, protective forests, biodiversity, economic efficiency, forest area, soil, harmful organisms, wildlife, leisure, education, research, measures

Stichwörter:

Wald, Politik, Nachhaltigkeit, Holznutzung, Klimawandel, Schutzwald, Biodiversität, Wirtschaftlichkeit, Waldfläche, Boden, Schadorganismen, Wild, Freizeit, Bildung, Forschung, Massnahmen

La Politique forestière 2020 de la Confédération concilie de façon optimale les exigences écologiques, économiques et sociales posées à la forêt. Elle garantit une gestion forestière durable et crée les conditions générales favorables à une économie des forêts et du bois efficace et novatrice. La Politique forestière 2020 fixe au total onze objectifs. Ceux-ci concernent le potentiel d'exploitation du bois, les changements climatiques, la fonction protectrice de la forêt, la biodiversité, la surface forestière, la capacité de production de l'économie forestière, les sols forestiers (y compris l'eau potable et la vitalité des arbres), la protection contre les organismes nuisibles, l'équilibre forêt-gibier, les activités de loisirs et de détente en forêt ainsi que la formation et la recherche (y compris le transfert des connaissances). Pour chaque objectif, la Politique forestière 2020 formule plusieurs lignes stratégiques ainsi que différentes mesures. Bien que les mesures incombent en première ligne à la Confédération, le rôle des cantons et des autres acteurs est aussi mentionné (propriétaires de forêts, gestionnaires, spécialistes forestiers, associations, etc.). Enfin, les conséquences législatives et financières de la Politique forestière 2020 sont indiquées.

Con la Politica forestale 2020 la Confederazione armonizza in maniera ottimale le esigenze di ordine ecologico, economico e sociale nei confronti del bosco, assicura una gestione sostenibile e crea condizioni quadro favorevoli per un'economia forestale e del legno efficiente e innovativa. La Politica forestale 2020 definisce undici obiettivi che riguardano il potenziale di utilizzazione del legno, i cambiamenti climatici, la funzione protettiva del bosco, la biodiversità, la superficie boschiva, la capacità produttiva dell'economia forestale, la protezione dei suoli forestali (compresa l'acqua potabile e la vitalità degli alberi), la protezione contro gli organismi nocivi, l'equilibrio bosco-selvaggina, le attività del tempo libero e di svago nonché la formazione e la ricerca (compreso il trasferimento di conoscenze). Per ognuno di questi obiettivi, la Politica forestale 2020 formula vari orientamenti strategici e misure. Queste ultime costituiscono un impegno in primo luogo per la Confederazione, ma viene fatto riferimento anche al ruolo dei Cantoni e di altri attori coinvolti (proprietari dei boschi, gestori, esperti, associazioni ecc.). Vengono infine indicate le conseguenze sul piano giuridico e finanziario.

Mots-clés :

forêt, politique, gestion durable, exploitation du bois, changements climatiques, forêts protectrices, biodiversité, capacité de production, surface forestière, sols, organismes nuisibles, gibier, loisirs, formation, recherche, mesures

Parole chiave:

bosco, politica, gestione sostenibile, utilizzazione del legno, cambiamenti climatici, bosco di protezione, biodiversità, capacità produttiva, superficie forestale, suolo, organismi nocivi, selvaggina, tempo libero, formazione, ricerca, misure

> Foreword

A Switzerland without forests is unimaginable. This is something that our ancestors recognised. With the Forest Act of 1876 they halted the progressive logging of the country's forests. This pioneering act for the protection of the Swiss forest proved effective. Through its wide-ranging functions as a raw material producer, workplace, location for leisure and recreation, and habitat for animals and plants, the forest provides invaluable services. In addition, it provides us with good air, filters our drinking water and protects us against all kinds of natural hazards.

Thirty-two percent of Swiss territory is under forest cover. Hence it is hardly surprising that forest touches many aspects of life in our country. It affects both politics and the population. While hikers and athletes object that their activities are disturbed by harvesting activities, rational forest management is becoming increasingly difficult due to the restrictions being imposed for the benefit of leisure-seekers and due to political requirements.

Representing these individual interests and striking a sustainable balance between forest protection and harvesting requires across-the-board commitment. Given the importance of the forest for our entire society, economy, ecology and the climate, we must approach this task holistically. For this reason, the integrative, coherent and forward-looking Forest Policy 2020, which was approved by the Federal Council in August 2011, is needed.

The Forest Policy 2020 covers many areas and its keywords include: wood harvesting, climate change, forest area conservation, biodiversity, protective forest, economic viability, soil protection, leisure, harmful organisms, forest-wildlife balance, and education, research and knowledge transfer.

In the context of growing resource scarcity and its contribution to energy production, wood as a raw material will increase further in importance. To meet the associated demand we must plan the right tree stands now. This measure is also important to enable an effective response to the challenges of climate change.

The cantons, associations, forest owners and forestry sector are called on to work together to improve the balancing of the different interests. Education and training are also needed to close gaps in the knowledge about forests and forestry and for

the dissemination of challenging interdisciplinary information. The Confederation will provide effective support for the forest policy through its financial and human resources.

With the Forest Policy 2020 we have a balanced and broad-based strategy. The measures for its implementation are presented in a clear and accessible way in this publication. We hope that it will guide and support you in your activities in and on behalf of the forest.



Federal Councillor Doris Leuthard
Head of the Federal Department of the Environment,
Transport, Energy and Communications (DETEC)

> Summary

The Swiss Confederation's Forest Policy 2020 ensures the optimal coordination of the ecological, economic and social demands on the forest. It guarantees that forest management is sustainable and creates favourable conditions for an efficient and innovative forestry and timber sector in Switzerland. The Forest Policy 2020 takes sufficient account of both social demands on the forest and the needs of the slow-growing forest ecosystem.

Main objective

By adopting the time horizon of 2030 for the Forest Policy 2020, the Federal Council presents its vision for a sustainably managed forest that fulfils all of its functions equally well and is conserved in its area and distribution. Forests and wood harvesting shall help to mitigate climate change, and its impacts on the forest shall remain as minimal as possible. The natural raw material wood shall be harvested and valued, and it shall be possible to provide and finance the public services associated with the forest. Because Switzerland's forest policy is a joint task of the Confederation and cantons, the vision for 2030 shall involve effective dialogue with all actors and interest groups.

Vision for 2030

The Forest Policy 2020 replaces the Swiss National Forest Programme (Swiss NFP¹) of 2004. The new elements of the policy include, in particular, objectives in the area of climate change. Accordingly, the forest and forest management shall contribute to the mitigation of climate change through the increased harvesting and optimal use of the raw material wood. This will enable the improvement of Switzerland's CO₂ balance and facilitate a greater contribution to the renewable energy supply. In addition, the forest shall be conserved as an adaptable ecosystem so that it can also provide its wide-ranging services in terms of protection against natural hazards and as supplier of wood, recreational space, habitats for animals and plants, and drinking-water under changing climate conditions.

Further development of the Swiss National Forest Programme

The federal Forest Policy 2020 defines a total of eleven objectives. For five of these objectives, the Confederation sets one *focus* for – just under – the next ten years:

Objectives of the Forest Policy 2020

1. The potential offered by sustainably harvestable wood shall be exhausted
2. Climate change: mitigation and adaptation shall be guaranteed
3. The protective forest service shall be guaranteed
4. Biodiversity shall be conserved and improved in a targeted way
5. Forest area shall be conserved

The *other* six objectives are:

6. The economic viability of the forestry sector shall be improved
7. Forest soil, drinking water and the vitality of the trees shall not be endangered
8. The forest shall be protected against harmful organisms
9. A balance shall exist between the forest and wildlife
10. The use of the forest for leisure and recreation shall be respectful
11. Education, research and knowledge transfer shall be guaranteed

For each objective, the Forest Policy 2020 defines strategic directions and concrete measures on the part of the Confederation. The most important new measures planned are:

- > The FOEN shall further develop the system for financing young forest maintenance in accordance with the “Wald und Klimawandel” (“Forest and Climate Change”) research programme and shall conclude multiannual programme agreements with the cantons in the context of the New System of Fiscal Equalisation and Division of Tasks between the Confederation and the Cantons (NFE) so that forest stands can be adapted in a targeted way to increase their resilience (Chapter 3.2). This shall also involve the improvement of the state of unstable and critical protective forests.
- > The FOEN shall control and coordinate the efforts to protect the forest against biotic hazards and define control strategies for specific harmful organisms. The FOEN shall develop with the other actors a system for financing the support of forest protection measures outside the protective forest (Chapter 3.2 and Chapter 3.8).
- > The FOEN shall develop with the cantons a strategy for regional biodiversity goals in the forest. The exploitation of special services for biodiversity shall be taken into account here (Chapter 3.4).
- > The FOEN shall produce a strategy proposal for the valorisation of the services provided by forest owners (Chapter 3.6).

Most important measures on the part of the Confederation

1 SAEFL 2004: Swiss National Forest Programme (Swiss NFP). Environmental Series No. 363. Federal Office for the Environment, Forests and Landscape, Bern. 117 p.

1 > Background

With the Forest Policy 2020, the Federal Council presents its forest policy declaration of intent for the time horizon 2020. The strategic direction of the policy is substantiated with concrete measures. The Forest Policy 2020 was developed from the Swiss National Forest Programme.

Legal mandate

The Confederation ensures that the forest can fulfil its protective, social and economic functions. The Confederation establishes principles for the protection of the forest and supports the implementation of measures for the conservation of the forest. This is stated in Article 77 of the Federal Constitution (Bundesverfassung, BV).² The Confederation's tasks are substantiated in the Federal Act on Forest (ForA)³ and in the Forest Ordinance (ForO).⁴

The Federal Council sets the course for forest policy

With the Forest Policy 2020,⁵ the Federal Council presents its forest-policy declaration of intent and derives concrete measures from it. In approving the Forest Policy 2020,



on 31 August 2011, the Federal Council also mandated the Department of the Environment, Transport and Communications DETEC to develop an action plan, examine the need for adaptations to the legislation and identify any eventual additional financial requirements.⁶

Further development of the Swiss National Forest Programme

The Forest Policy 2020 was developed from the Swiss National Forest Programme (Swiss NFP).⁷ The latter was developed in 2002/2003 through a broadly-based consultation process and has formed the basis of federal forest policy since then. In 2009, half way through its implementation period, the status of the attainment of the objectives and implementation of the measures defined in the programme were surveyed at federal level and new developments of relevance to the forest were identified. It emerged from this process that, first, new topics had become relevant and, second, some aspects of the policy field had changed considerably.

Based on these findings, on 21 April 2010, the Federal Council mandated the DETEC to further develop the Swiss NFP and to present its proposal to the Federal Council for approval.⁸ The Forest Policy 2020 is the outcome of this process. It contains elements of the Swiss NFP that remain relevant and valid, incorporates new topics and developments, and develops new proposals for sustainable solutions to parliamentary initiatives in the area of forest. The studies carried out for Forest Policy 2020 were implemented with the participation and involvement of the key actors.

Publications on the Forest Policy 2020

The Forest Policy 2020 as passed by the Federal Council was published in the Federal Gazette, (Bundesblatt, BBl 2011, S. 8732 ff). The current publication Forest Policy 2020. *Visions, Objectives and Measures for the Sustainable Management of Forests in Switzerland* adopts the content passed by the Federal Council⁹ and supplements it with measures for the substantiation of the policy's strategic directions (see Chapter 3).

2 Federal Constitution of the Swiss Confederation of 18 April 1999 (Bundesverfassung der Schweizerischen Eidgenossenschaft vom 18. April 1999. **SR 101**).

3 Federal Act of 4 October 1991 on Forest (Waldgesetz, WaG). **SR 921.0**.

4 Ordinance of 30 November 1992 on Forest (Waldverordnung, WaV). **SR 921.01**.

5 BBl **2011**, p. 8731 ff.

6 Press release of 31.08.2011. Available online (f g i): www.news.admin.ch/dokumentation/00002/00015/index.html?lang=de&msg-id=40865

7 SAEFL 2004: Swiss National Forest Programme (Swiss NFP). Environmental Series No. 363. Swiss Agency for the Environment, Forests and Landscape, Bern. 117 pp.

8 Press release of 21.04.2010. Available online (f g i): www.news.admin.ch/dokumentation/00002/00015/index.html?lang=de&msg-id=32741

9 Main objective, Vision 2030, challenges, objectives, strategic directions, impacts.

2 > Main Objective and Vision

With the Forest Policy 2020 the Federal Council pursues the main objective of sustainable forest management and an efficient and innovative forestry and timber sector. This is based on a long-term vision with a time horizon of 2030.

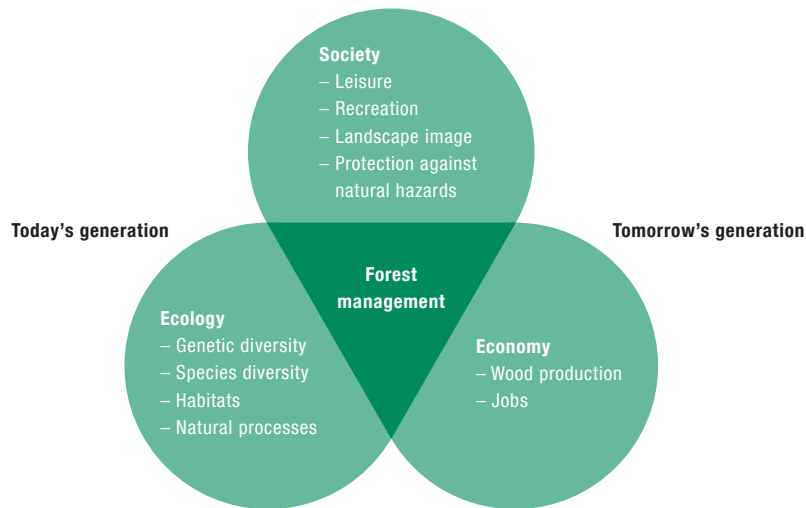
Sustainable forest management

The main objective of the Forest Policy 2020 is the guaranteeing of sustainable forest management and the creation of favourable conditions for an efficient and innovative forestry and timber sector. Forest management can also include the decision not to manage forest.

With its vision (time horizon 2030), concrete objectives (time horizon 2020) and associated strategic directions, the Forest Policy 2020 aims to optimise the three dimensions of sustainability. Successful elements of existing Swiss forest policy shall be continued, others shall be improved and new ones shall be added. In this way, the changes in the area of the forestry and timber sector, the climate, societal requirements, and the slow-growing forest ecosystem shall be taken into account.



> **Three dimensions of sustainability**



Vision 2030

The Swiss forest, which covers 32% of the country's territory, is indispensable as a habitat for flora and fauna and as a source of the renewable resource wood. It is part of our landscape and of central importance for the regulation of the climate, the supply of drinking water, the minimisation of the risks posed by natural hazards and for biological diversity. The forest contributes to our well-being and safety, and to the creation of economic wealth.

Preamble

Swiss forest policy is committed to sustainability in accordance with the international conventions and hence provides economic, social and ecological added value (see Art. 77 of the Federal Constitution¹⁰ and Art. 1 of the Forest Act¹¹).

The Federal Council pursues the following vision with a time horizon of 2030:

- i. The Swiss forest shall be managed¹² in such a way that it can fulfil its functions and provide its services sustainably and equally. These are: the design and management of the landscape, the protection of natural resources, wood and other forest products, the conservation of species diversity and habitats, protection against natural hazards, and provision of space for leisure and recreation.
- ii. The forest shall be largely conserved in its current area and distribution pattern and optimally interconnected within the landscape.
- iii. The forest and wood use shall contribute to the mitigation of climate change. The impacts of climate change on forest services shall remain as minimal as possible.
- iv. Wood is a formative component of Swiss building and living culture and contributes to improving the quality of life. The forestry and timber sector shall make an important contribution to the Confederation's energy, climate and resource policy objectives. The value-added chain from the tree to the end product shall be competitive at international level and environmentally friendly in its design.
- v. The public services demanded by the public shall be provided to a sufficient degree and financed. Additional expenses and reductions in yields suffered by the forestry sector (for example as a result of refraining from wood production) shall be compensated on the basis of a transparent and effective financing model.
- vi. Forest policy is a joint task of the Confederation and cantons. Their objectives shall be attained together with the forest owners and in dialogue with interest groups and with highly qualified experts in the field of forestry and timber. Close cooperation shall be maintained with other policy and economic sectors. International problems shall be approached through Switzerland's active involvement at international level.

Vision 2030

10 Federal Constitution of the Swiss Confederation of 18 April 1999. **SR 101.**

11 Federal Act of 4 October 1991 on Forest (Forest Act, ForA). **SR 921.0.**

12 See footnote 10.

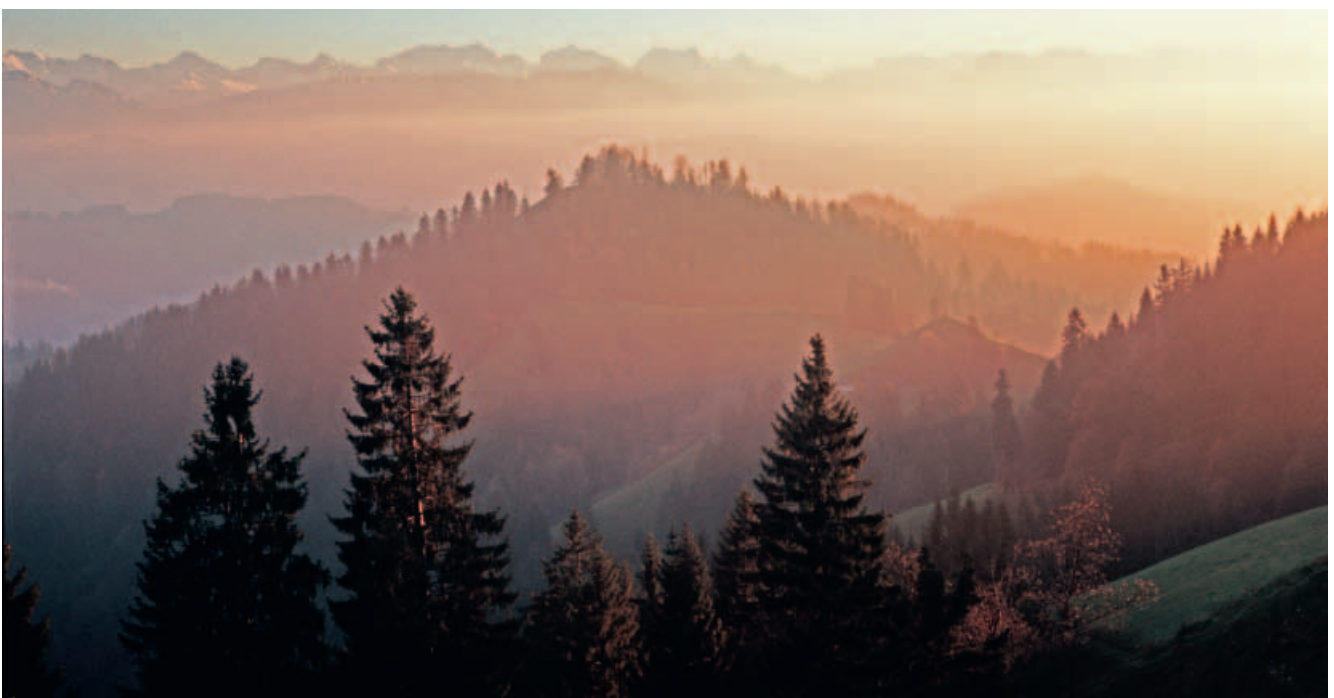
3 > Objectives, strategic directions and measures

The Forest Policy 2020 formulates a total of eleven objectives which shall be pursued in the context of several strategic directions. Concrete implementation measures are presented for each strategic direction.

The Federal Council defined the eleven objectives of the Forest Policy 2020 based on the formulated vision (cf. Chapter 2) and the challenges that may be identified today and for the future (see below).¹³ In this chapter, two to six strategic directions and different concrete measures are allocated to each objective.

Forest policy as a joint task

The forest policy is a joint task of the Confederation and cantons. The substantiation and implementation of the federal measures is carried out with the cantons and coordinated with the central actors. The cantons and the forestry and timber actors also play an important role in the implementation of many measures.



This document specifies the binding measures to be carried out by the Confederation.¹⁴ At the same time, attention is drawn to the important role of the cantons and central actors. What is involved here are not requirements as such but an expectation which demonstrates the contribution that the cantons and central actors must make from the perspective of the Confederation so that the objectives of the Forest Policy 2020 can be fulfilled.

Greatest challenges

Based on current assessments, the topics that pose the greatest challenges are: exploiting the wood harvesting potential (Chapter 1.1), climate change (Chapter 1.2), the protective forest service (Chapter 1.3), biodiversity (Chapter 1.4) and forest area (Chapter 1.5). The prioritising of these topics does not mean that the other objectives are unimportant, however it indicates where the Confederation's main focus of activity will lie for the next ten years or so.

Implementation: two stages

The eleven objectives of the Forest Policy 2020 shall be approached in two implementation stages. The first from 2012-2015; the second from 2016-2019.

3.1 **The sustainably harvestable wood harvest potential shall be exhausted**

The harvesting of the renewable resource wood improves Switzerland's CO₂ balance (through the sequestration of carbon in wood used in construction, through the substitution of fossil energy carriers and non-renewable materials), helps to create jobs in peripheral regions and contributes to the protection of the environment in regional economic cycles. It can also generate synergies with biodiversity promotion strategy and make an important contribution to the green economy. However, this potential¹⁵ is not being fully exploited as, for decades now, the volume of wood being harvested is lower than increment (particularly in private and mountain forests). Hence, Switzerland has one of the highest standing volumes in Europe.

Challenges

Taking local conditions into account, the wood harvest potential of the Swiss forest that can be harvested sustainably shall be exhausted.

Objective 1



Wood harvest in a mountain forest

Photo: Emanuel Ammon FOEN / AURA

Strategic directions and measures

> Expert decision support

Strategic direction 1.1

Forest managers shall be provided with expert decision support for optimal forest management (maximum possible exploitation of wood increment).

Federal measures	Role of the cantons	Role of other actors
Stage 1		
The Confederation shall demonstrate the possible harvesting potential in the forest (updating of studies on potential, e.g. wood harvesting potential, future scenarios for energy wood, surveys like the Swiss National Forest Inventory NFI).	Provision of information bases, interpretation of studies and scenarios in the regional context, dissemination of information, offering of advice	Provision information bases, interpretation of studies and scenarios in specific contexts, offering of advice
Stages 1 & 2		
The Confederation shall make information bases available on: wood harvesting, wood processing, wood trading and wood end use, potential demand, and value creation potential (forestry statistics/test operations network, National Forest Inventory, Swiss Statistical Yearbook of Forestry, surveys of sawmills and wood industry, studies on end use etc.).	Dissemination of information, interpretation of information bases in the regional context, offering of advice	Dissemination information, offering of advice

> Promotion of hardwood

Strategic direction 1.2

New processing and marketing options for hardwood shall be sought.

Federal measures	Role of the cantons	Role of other actors
Stage 1		
The Confederation shall support feasibility studies, innovation projects (applied research & development), market studies on hardwood sales etc. (for concrete measures, see the Wood Resource Policy ¹⁶ and Aktionsplan Holz ¹⁷ [Wood Action Plan]).	Dissemination of information	Wood sector associations shall take the decision supports into account and disseminate information.

> Increasing the demand for wood

Strategic direction 1.3

The demand for wood shall be increased inter alia through the dissemination of information and raising of awareness among the population and institutional end users (see Wood Resource Policy¹⁸).

Federal measures	Role of the cantons	Role of other actors
Stage 1		
The Confederation shall support the further development of energy-efficient (large-volume) timber construction systems and building in existing structures (“Bauen im Bestand”) in the areas of research and development, innovation promotion and knowledge transfer (for concrete measures, see Wood Resource Policy ¹⁹ Aktionsplan Holz ²⁰ [Wood Action Plan]).	Dissemination of information	Wood sector associations shall take the decision supports into account and disseminate information.
Stage 1		
The Confederation shall raise awareness among institutional end users of the advantages of timber structures, wood components and the use of wood energy (for concrete measures, see Wood Resource Policy ²¹ and Aktionsplan Holz ²² [Wood Action Plan]).	Dissemination of information	Dissemination of information, taking into account of decision supports
Stage 1		
The Confederation shall support the increased use of wood in the federal public acquisition process (project submissions, ecological building portfolio).	–	–
Stage 1		
The Confederation shall examine the orientation of the building programme in relation to the promotion of energy-efficient timber structures.	–	–

Impacts

The maintenance of basic access and its adaptation to technology, also outside the protective forest, is an important measure for ensuring access to the wood resources. Should this receive financial support from the Confederation again, it would be necessary to adapt the Forest Act of 4 October 1991 (ForA; SR 921.0) (Art. 38a).²³ An increase in costs of around CHF 6 million/year could be expected (from 2016).

3.2

Climate change: the forest and use of wood shall contribute to mitigation and the impacts on forest services shall remain minimal

The mandate formulated in Article 77 of the Federal Constitution obliges the Confederation to conserve the protective, harvesting and welfare functions of the forest in Switzerland. This mandate is assuming a new significance in the context of changing climate conditions. In addition to the challenges concerning current and medium-term forest management, the Confederation must deal with the question as to how the existence of a forest ecosystem and its services can be guaranteed 100 years from now. The forest, its products and services are broadly affected by climate change. Through its effect as a carbon sink, the forest contributes to the mitigation of climate change. Fossil energy is substituted through the use of wood in construction and the carbon remains sequestered. On the other hand, the changes in the climate are likely to have a strong impact on forest ecosystems (storms, drought, forest fires, biotic calamities). The changes threaten to unfold at a speed that outpaces the natural adaptation processes.

Challenges

For the mitigation of climate change, forest management and wood use (substitution) shall contribute to attaining the maximum possible reduction in CO₂ emissions (reduction). The Swiss forest shall be conserved as a resilient ecosystem that is capable of adaptation and shall continue to provide the services required by society under altered climate conditions (adaptation).

Objective 2

Dying pine forest in Valais

Photo: Andreas Rigling

Strategic directions and measures

> Clarification of the impacts

Strategic direction 2.1

The impacts of climate change (storms, drought etc.) on the forest shall be studied and the suitability of the silviculture methods used shall be examined.

Federal measures	Role of the cantons	Role of other actors
Stage 1		
The Confederation shall complete the second phase of the “Wald und Klimawandel” (“Forest and Climate change”) research programme and shall ensure the publication and communication of the results, and the provision of corresponding continuing education and training. This concerns, in particular, adaptation strategies in the area of silviculture.	Dissemination of information, interpretation of the results in the regional context, planning and implementation of measures	Training of forestry experts (initial and continuing education and training), implementation of measures
Stage 2		
The Confederation shall derive measures from the research findings on the conservation of the genetic variability of native forest tree species so that their resilience and adaptability to changes in the climate is maintained.	–	–

> Increasing resilience

Strategic direction 2.2

The resilience of the forest shall be improved through adapted young forest maintenance with stable young stands suited to their locations. Targeted measures shall be carried out to adapt forest stands with insufficient or unsuitable regeneration and unstable stands, and stands in climate-sensitive locations.

Federal measures	Role of the cantons	Role of other actors
Etappe 1		
The Confederation shall develop a federal climate strategy in the forest sector.	Dissemination of information, interpretation of the national strategy in the regional context, planning and implementation of measures	Dissemination of information, implementation of measures, application of strategic principles
Stages 1 & 2		
The Confederation shall further develop the support system for young forest maintenance in accordance with the results of the “Wald und Klimawandel” (“Forest and Climate change”) research programme, examine the associated conditions and conclude multiannual programme agreements with the cantons based on the New System of Financial Equalisation and Division of Tasks between the Confederation and Cantons (NFE).	Planning, implementation and promotion of measures	–

> Measures in the case of disruption and damage**Strategic direction 2.3**

Measures for prevention, removal and reforestation following events involving disturbance or damage shall be supported.

Federal measures	Role of the cantons	Role of other actors
Stage 1		
Together with the actors, the Confederation shall develop a system for financing the support of forest protection measures outside the protective forest.	Planning, promotion and implementation of measures	–
Stage 1		
The Confederation shall implement the strategy for the management of biotic hazards (see Chapter 3.9).	Planning, implementation of measures	–
Stage 1		
The Confederation shall implement the forest fire alert in accordance with the Alarm Ordinance and shall coordinate the process with the cantons.	Planning, implementation of measures	–
Stage 1		
The Confederation shall develop an early warning system for forest fires (including northern slopes of the Alps) and shall develop a decision support for the attention of the cantons.	Planning	–

> Boosting wood use**Strategic direction 2.4**

The use of wood shall be boosted as a contribution to clean technologies (cleantech).

Federal measures	Role of the cantons	Role of other actors
Stage 1		
The Confederation shall develop a strategy for measuring and making the cleantech potential of wood (eco-balancing, exploitation of wood harvesting potential and optimal cascade use, environmental product labels [target consolidation], support of regional economic cycles etc.) optimally exploitable through intersectoral partnerships (Federal Office for Agriculture FOAG, State Secretariat for Economic Affairs SECO etc.) .	Dissemination of information, interpretation of basic information documents in the regional context, offering of advice	Dissemination of information, offering of advice
Stage 1		
The Confederation shall actively incorporate the advantages of wood and wood products into the mitigation of climate change into federal activities.	–	–

Impacts

The existing legal bases are fundamentally sufficient. If measures for the prevention and remediation of forest damage, including outside the protective forest, are to be given financial support, it would be necessary to amend the Forest Act of 4 October 1991 (ForA; SR 921.0) (see also Chapter 3.8). Financially, additional costs of CHF 20 million (from 2016) could be expected (within and outside the protective forest).

3.3 The protective forest service shall be guaranteed

The protective forest protects not only the roads, railway tracks and buildings located directly below it, it also has an impact beyond its local environment on entire regions and, sometimes, the entire country of Switzerland (for example when transport routes are interrupted). Protective forest maintenance is far cheaper than the construction of hazard protection structures. For various reasons, the protective effect of the forests is under threat (maintenance deficits, lack of regeneration etc.). The protection of the population is a public service provided by the forestry sector in the national interest and requires a particular effort on the part of the Confederation in cooperation with the cantons.

Challenges

The services provided by the forest for the protection of human life and infrastructure (settlements, railways, roads etc.) shall be guaranteed sustainably on a comparable level throughout Switzerland.

Objective 3



Rockfall protection

Photo: André Wehrli

Strategic directions and measures

> Designation of protective forest areas

Strategic direction 3.1

Protective forest areas shall be designated in spatial planning terms in accordance with a national strategy developed jointly by the Confederation and the cantons (SilvaProtect-CH).

Federal measures	Role of the cantons	Role of other actors
Stage 1		
The Confederation shall harmonise the criteria for protective forest designation.	Planning and implementation of measures	–
Stage 1		
To be able to monitor the fulfilment of objectives at national level, the Confederation shall evaluate the NFI data in relation to the requirement profiles in accordance with Sustainability in the Protection Forest NaiS (to this end, the NFI samples must be capable of being assigned to a location unit in accordance with NaiS).	–	–

Strategic direction 3.2

> Programme agreements for protective forest

The Confederation shall conclude multiannual programme agreements with the cantons in the area of protective forests in accordance with the New Financial Equalisation NFE.

Federal measures	Role of the cantons	Role of other actors
Stages 1 & 2		
The Confederation shall conclude multiannual programme agreements with the cantons in the area of protective forest in accordance with the New Financial Equalisation NFE (the measure corresponds to the strategic direction).	Planning, implementation, monitoring	–

Impacts

The existing legal bases are sufficient. An emerging additional financial requirement is covered by the objective set in relation to climate change. An average of approximately CHF 60 million per year has been allocated for the protective forest.

3.4 **Biodiversity shall be conserved and improved in a targeted way**

Thanks to its climate and geological variations, Switzerland's forests are highly diverse – over one hundred natural forest communities. They are particularly important for the conservation of species diversity – around 60% of the over 50,000 plants, animals, fungi and bacteria present in Switzerland are reliant on the forest ecosystem in one way or another. The ecological quality of forests has improved in recent decades and is generally good in comparison with that of other ecosystems. Several indicators for the habitat quality of our forests point to a slightly positive trend: the structural variety is growing, forest regeneration is for the most part and increasingly natural, and the proportion of dead wood available has increased.

Despite its generally good state, overall, the forest lacks the habitat diversity necessary for the long-term conservation of flora and fauna. For example, the target values regarding dead wood availability have not been reached in many areas and the distribution is unsatisfactory. Moreover, many forests are in an optimum phase with ample standing volume and are, therefore, dark and cool. Hence light and heat-loving species can find fewer suitable habitats.

The species living in the forest and the forest as a near-natural ecosystem shall be conserved. Aspects of biodiversity in which deficits exist shall be improved.

Challenges

Objective 4



Biodiversity-rich dead wood

Photo: Markus Bolliger / FOEN/AURA

Strategic directions and measures

> Near-natural management

Strategic direction 4.1

Management of all forest area shall be carried out in accordance with the legal requirements for near-natural silviculture.

Federal measures	Role of the cantons	Role of other actors
Stage 1		
The Confederation shall substantiate the legal requirements for near-natural silviculture to be able to compensate for additional services on that basis (e.g. the attainment of structural and species diversity in managed forest areas).	Dissemination of information, interpretation in the regional context, planning and implementation, monitoring	Forest owners and management shall implement the requirements.
Stages 1 & 2		
The Confederation shall formulate practical guidelines (e.g. for the management of old and dead wood) and promote the exchange of experience between the actors.	Dissemination of information, interpretation in the regional context, planning and implementation, offering of advice	Forest owners and managers shall implement the guidelines.

> Protected areas and upgrading of priority habitats

Strategic direction 4.2

Programme agreements shall be concluded with the cantons for the designation of protected areas (10% forest reserves by 2030 in accordance with agreement with the cantons) and upgrading of priority habitats (also known as priority areas; forest margins, wooded pastures etc.).

Federal measures	Role of the cantons	Role of other actors
Stages 1 & 2		
The Confederation shall conclude multiannual programme agreements with the cantons in accordance with the New Financial Equalisation NFE in the area of forest diversity.	Planning and implementation, monitoring	Implementation by forest owners and managers
Stage 1		
The Confederation shall compile statistics on the designated forest reserves for monitoring purposes (GIS data).	Provision and implementation information bases, dissemination of information	–
Stage 1		
The Confederation shall provide information bases for the designation of forest reserves and other biodiversity promotion areas from a national perspective (focus areas).	Dissemination of information, interpretation in the regional context, planning and implementation	–

> Regional biodiversity objectives and finance system

Strategic direction 4.3

Regional biodiversity objectives shall be defined and a finance system developed to compensate the services provided by forest managers in the fulfilment of the objectives.

Federal measures	Role of the cantons	Role of other actors
Stage 1		
Together with the cantons and in accordance with the Swiss Biodiversity Strategy, the Confederation shall develop regional biodiversity objectives in the forest (target and lead species, forest structure targets etc.) and shall develop a system for the valorisation of special services for biodiversity.	Cooperation, planning and implementation, dissemination of information	Implementation by forest owners and managers.
Stage 1		
The Confederation shall examine whether adaptations to the legislation are required for the regional biodiversity objectives and extrapolate the additional finance required.	–	–

Impacts

For the legal enshrining of regional biodiversity objectives, it shall be established whether the adaptation of the Forest Act of 4 October 1991 (ForA; SR 921.0; Art. 38 ForA) is necessary and should be carried out. At the same time, the embedding of the principles for the requirements of near-natural silviculture in the Forest Ordinance of 30 November 1992 (ForO, SR 921.01) shall be examined. In financial terms, an average of almost CHF 10 million per year has been invested in this sector for the designation of protected areas (forest reserves) and the maintenance of priority areas in recent years. To fulfil the forest reserve targets defined with the cantons and attain broader impacts through the significant extension of the priority areas, an additional financial requirement of CHF 28 million/year may be expected (phased increasing of funding as soon as possible). For the financing of the regional biodiversity objectives (old/dead wood) an additional requirement of around CHF 3 million/year may be expected. The decision for increased funding must be taken in the context of the integrated consideration of all biodiversity objectives (in the context of the Swiss Biodiversity Strategy).

3.5 **Forest area shall be conserved**

Forest area in intensively used areas (in particular the Central Plateau and Alpine centres) is under severe pressure from settlements and infrastructure. Today, situations arise, in which settlement area borders directly on forests, and its further increase would require the use of forest area. In contrast, in mountain regions, forest is expanding, in particular as a result of the abandonment of agricultural activities. This development can be associated with the loss of ecologically valuable cultural landscapes, on the one hand, and the improvement of protection against natural hazards, on the other. These countervailing developments give rise to wide-ranging conflicts (biodiversity, spatial planning, agriculture etc.).

Challenges

The forest shall be fundamentally conserved in its spatial distribution and shall not decrease in its area. The further development of forest area shall be coordinated with landscape diversity (including connectivity) and targeted spatial development (including agricultural priority areas).

Objective 5



Building right up to the forest margin

Photo: Emanuel Ammon / AURA

Strategic directions and measures

> Prohibition on deforestation

Strategic direction 5.1

The prohibition on deforestation with the possibility for the granting of exceptional permits shall be upheld, and the discretion for the granting of exceptional deforestation permits shall be exhausted.

Federal measures	Role of the cantons	Role of other actors
Stages 1 & 2		
Based on the current legal bases, the Confederation shall provide implementation guides and in this way guarantee the provision of legal support and advice to the cantons on questions of forest law.	Dissemination of information, interpretation in the regional context, implementation	–
Stages 1 & 2		
The Confederation shall guarantee consultation in the case of deforestation processes and shall assume oversight (federal control procedures and cantonal procedures).	Implementation and monitoring	–
Stages 1 & 2		
The Confederation shall compile deforestation statistics for the purpose of monitoring.	Dissemination of information	–
Stages 1 & 2		
Based on case law, the Confederation shall compile an overview of exceptional deforestation permits and demonstrate the possible legal discretion in this way.	Dissemination of information, interpretation and application in the regional context, implementation	–
Stage 1		
The Confederation shall examine how and in what form regional settlement planning could be incorporated into the assessment of exceptional deforestation permits (Art. 5 ForA).	Information, planning, implementation	–

> Compensation in kind

Strategic direction 5.2

In certain cases (e.g. to protect agricultural priority areas and for the rehabilitation of watercourses), it shall be possible to dispense with compensation in kind or compensation for deforestation.

Federal measures	Role of the cantons	Role of other actors
Stage 1		
The Confederation shall further develop the expert information bases (supra-communal planning, approach to be adopted in the case of undesired forest increase etc.).	Provision of information, planning, implementation	–
Stages 1 & 2		
The Confederation (FOEN) shall supervise the policy and legislation processes (Spatial Planning Act SPA, Forest Act ForA) at national level.	Provision of information, implementation	–

> Static forest boundaries

Strategic direction 5.3

Static forest boundaries can be designated in relation to the open land on the basis of overall planning (in particular structural planning).

Federal measures	Role of the cantons	Role of other actors
Stage 1		
The Confederation shall provide specialist support for the adaptation of the Forest Act ForA in accordance with parliamentary initiative 09.0474 (in relation to static forest boundaries) and, if necessary, shall substantiate the provisions in the Forest Ordinance ForO and the corresponding implementation guide.	Dissemination of information, implementation of adapted options	–
Stages 1 & 2		
The expert information bases and methodology shall be further developed by the Confederation, and the policy and legislative processes shall be supported (Forest Act ForA, Spatial Planning Act SPA, Protection of Nature and Cultural Heritage Act NCHA, Agriculture Act AgricA).	Dissemination of information, implementation	–
Stage 1		
The Confederation shall examine the legal options for reducing the minimum distance between built structures and graduated forest margins (e.g. through agreements between forest owners and beneficiaries similar to the procedure for road owners and owners of building plots)	–	–

Impacts

As part of the parliamentary initiative “Flexibilisierung der Waldflächenpolitik” (“Increasing the flexibility of forest area policy”) (09.0474), adaptations to the Forest Act of 4 October 1991 (ForA; SR 921.0) were decided on 16 March 2012. Other adaptations (e.g. better connectivity between forest and open-land biotopes) shall be examined in the context of the planned revision of the Spatial Planning Act.

3.6 The economic efficiency and performance of the forestry sector shall improve

The price pressure arising from increasingly scarce public funding and the problem of volatile wood prices render significant organisational adaptations necessary. The forestry sector with its very small-scale ownership and management structures has reacted hesitantly to this changing environment up to now. On the one hand, the upholding of traditions and the lack of entrepreneurial thinking and action have made it more difficult to make the necessary changes. Efficient forestry operations and forestry managers, however, are a precondition for the provision of numerous forest services desired by the economy (e.g. wood production) and society (e.g. protective forest service, biodiversity, recreation) and for success on wood markets.

Challenges

The efficiency and performance of the Swiss forestry sector and, therefore, the structure of forestry operations and cooperation beyond ownership structures shall improve. The additional expenses incurred by managers for the provision of the desired forest services, or corresponding losses in income, shall be compensated.

Objective 6



Rational forest management

Photo: Emanuel Ammon FOEN/AURA

Strategic directions and measures

> Programme agreements

Strategic direction 6.1

Programme agreements shall be concluded with the cantons for the optimisation of management units and improvement of wood logistics.

Federal measures	Role of the cantons	Role of other actors
Stages 1 & 2		
The Confederation shall conclude multiannual programme agreements in accordance with the New Fiscal Equalisation NFE on structural improvement in the forest. The programme agreements shall be evaluated in view of possible improvements.	Planning and implementation, monitoring	Implementation by forest owners
Stages 1 & 2		
The Confederation shall provide data on the structure, economic efficiency and natural production bases of management units (forestry statistics/test operations network, National Forest Inventory NFI, Forstliche Betriebsabrechnung ForstBAR [forestry operational accounts]).	Dissemination of information, interpretation in the regional context	–

> Valorisation of forest services

Strategic direction 6.2

Information bases shall be developed and conditions established so that forest services provided by the forest owners can be valorised (e.g. for recreation, drinking water, CO₂ sink services).

Federal measures	Role of the cantons	Role of other actors
Stage 1		
The Confederation shall produce a strategy proposal as to how the concrete services provided by forest owners can be valorised.	–	Forest owners and managers shall pass on the costs arising from the provision of services to the relevant beneficiaries or polluters.
Stage 1		
In accordance with the current efforts to establish integrated national welfare measurement in the context of the “green economy” programme, the Confederation shall examine the benefits arising from the extension of the current macro-economic monitoring of the forestry sector (Forstwirtschaftliche Gesamtrechnung FGR [national forestry accounts]) to a comprehensive integrated economic-ecological national account for the forest.	–	–
Stage 1		
The Confederation shall develop decision-making supports for dealing with possible synergies or problems arising in relation to land-use conflicts in the forest (land use versus protected areas and reserves, land use losses in recreational forests etc.).	Interpretation of information bases in the regional context, dissemination of information	–

Impacts

The legal bases and financial conditions required to enable the valorisation of forest services provided by forest owners shall be examined and, if necessary, created.

3.7

Forest soil, drinking water and the vitality of the trees shall not be endangered

The forest filters pollutants from the air and this impairs the vitality of trees and causes the acidification of the soil. This makes the forest vulnerable to stress and threatens, for example, the quality of the water that filters through the forest soil and contributes to meeting around 40% of the Switzerland's drinking-water requirement. The difficulty arises that the fulfilment of the objective is largely dependent on other sectors (e.g. nitrogen pollution from agriculture and transport). Substance inputs are subject to national and international regulations. Soil protection is, therefore, a national task in the main.

Challenges

Forest soil, drinking water and tree vitality shall not be endangered by substance inputs, inappropriate management and corresponding physical impacts.

Objective 7

Spring box in the forest

Photo: FOEN/AURA

Strategic directions and measures

> Intersectoral approaches

Strategic direction 7.1

Intersectoral approaches (e.g. reduction of nitrogen pollution from transport and agriculture) shall be adopted.

Federal measures	Role of the cantons	Role of other actors
Stages 1 & 2		
The Confederation shall incorporate forest interests into other sectoral policies.	–	Agriculture and transport shall incorporate the objective into sectoral environmental targets and take the necessary measures.
Stages 1 & 2		
Support of international efforts to reduce ambient air pollution levels (e.g. UNECE)	–	–

> Driving on forest soil

Strategic direction 7.2

Regulations on driving on forest soil shall be enshrined in the legal requirements for near-natural silviculture (see also Chapter 3.4).

Federal measures	Role of the cantons	Role of other actors
Stage 1		
The Confederation shall examine how the requirements and regulations relating to soil-conserving forest management (in particular vehicular access to the forest) can be taken into account in the context of federal compensation and financial support (New Financial Equalisation NFE).	–	–
Stage 2		
The Confederation shall develop communications measures on the importance and implementation of the legal requirements for near-natural silviculture and implement them.	Dissemination of information, implementation of measures, monitoring	Forest owners and managers shall inform themselves, organise training courses and implement regulations and requirements.

> Nutrient balance**Strategic direction 7.3**

The nutrient balance shall be conserved or improved through the examination of the consequences of substance withdrawals from the forest (e.g. full tree harvesting) or measures for the compensation of nutrient losses (e.g. through the spreading of wood ash).

Federal measures	Role of the cantons	Role of other actors
Stage 1		
The Confederation shall clarify the extent of the threatened forest stands and locations particularly at risk from nitrogen inputs (inventory).	Interpretation in the regional context, dissemination of information	Research shall further develop methods.
Stage 1		
With the participation of the actors, the Confederation shall develop a strategy for the improvement of the nutrient balance in the forest (e.g. recommendations for cantons and forest managers).	Interpretation in the regional context, dissemination of information	–

Impacts

Based on the current status of knowledge, the existing legal bases are sufficient and additional costs are not expected.

3.8 **The forest shall be protected against harmful organisms**

Biotic hazards are on the increase. The causes of this development include the rise in global trade and mobility and climate change. These developments will become even more pronounced in future and the forest will not evade the consequences. Hence, the damage caused to forests by harmful organisms may result in a threat to forest services.

Challenges

The forest shall be protected against the introduction of particularly hazardous harmful organisms. The infestation and spread of organisms shall not exceed an acceptable level from the perspective of forest services.

Objective 8



Damage caused by the Asian Long-horned Beetle

Photo: Beat Wermelinger

Strategic directions and measures

> Prevention, control and crisis management

Strategic direction 8.1

Gaps in the prevention and control of biotic hazards shall be identified and filled. Effective crisis management, including the necessary infrastructure (e.g. laboratory), shall be developed.

Federal measures	Role of the cantons	Role of other actors
Stage 1		
The Confederation shall develop a strategy for the prevention and control of biotic hazards (including the development of crisis management) and implement it. This shall enable the implementation of a coordinated procedure among the cantons in this area.	Dissemination of information, implementation of the strategy	–
Stage 1		
The Confederation shall examine the need for the revision of the forest legislation in relation to the management and control of harmful organisms or the prevention and remediation of forest damage and, if necessary, initiate the necessary legal adaptations.	Make substantive representations	–
Stage 1		
The Confederation shall examine the teaching and study plans for forestry personnel, gardeners and other professional fields at vocational schools and universities in relation to the requirements for the identification and management of biotic hazards in the forest.	–	–
Stages 1 & 2		
In the case of extraordinary events, the Confederation shall inform the public about new biotic hazards for the forest.	Dissemination of information	–

> Damage event outside the protective forest

Strategic direction 8.2

Prevention, remediation and reforestation measures in the case of disturbance or damage shall also be intensified outside of protective forests.

Federal measures	Role of the cantons	Role of other actors
Stages 1 & 2		
The Confederation shall control and coordinate the efforts undertaken to protect the forest against biotic hazards and shall define organism-specific control strategies for hazardous harmful organisms.	Implementation of measures and coordination	The Swiss Federal Institute for Forest, Snow and Landscape Research WSL shall implement a national monitoring programme.
Stages 1 & 2		
The Confederation shall strengthen its implementation structure in the field of forest plant protection (including the Swiss Federal Plant Protection Service SPPS) so that fast and efficient action can be taken.	–	–
Stage 1		
The Confederation shall establish a national forest damage task force with the cantons and coordinate it with the FOEN management structure in exceptional situations.	Participation in development and implementation	–

Impacts

If measures for the prevention and remediation of forest damage shall also be given financial support outside of the protective forest, it will be necessary to adapt the Forest Act of 4 October 1991 (ForA; SR 921.0).

Additional costs of approximately CHF 4 million may be expected (CHF 2 million immediately, CHF 2 million from 2016). In the case of an event of national importance, it would have to be possible to make rapid decisions about exceptional financial credits.

3.9

The forest-wildlife balance is guaranteed

To ensure natural forest regeneration, correct hunting practice from a wildlife-biological perspective, forest management that is compatible with wildlife and the careful management of open land close to wildlife habitats must be guaranteed. The pursuit of leisure activities in the habitats of wild animals (ski touring, snow-shoeing etc.) and the presence of predators have a particular influence on wild animals.

Challenges

The forest shall provide sufficient living space and quiet for wild animals. Game stocks shall be adapted to their habitats and have a natural age and gender distribution. The natural regeneration of forests with tree species suited to their locations shall not be hindered by wild ungulates.

Objective 9

Regulation of game stocks through hunting

Photo: Franca Pedrazzetti / FOEN / AURA

Strategic directions and measures

> Forest-wildlife strategies

Strategic direction 9.1

In the context of programme agreements on the protective forest and forest management, the cantons shall be given financial support for the production and implementation of forest-wildlife strategies.

Federal measures	Role of the cantons	Role of other actors
Stages 1 & 2		
The Confederation shall provide financial support for the production and implementation of forest-wildlife strategies based on the protective forest and forest management programme agreements in accordance with the "Wald und Wild" ²⁴ (Forest and Wildlife – Guidelines for practice) implementation guide. The process shall be coordinated with central actors, e.g. agriculture and spatial planning.	Planning and base regulation of wildlife, implementation of measures in accordance with forest-wildlife strategy, control and monitoring	Forest managers, hunters and other actors shall implement the strategies.

> Ensuring forest regeneration

Strategic direction 9.2

To ensure natural forest regeneration, the cantons shall receive substantive guidelines and specialist information.

Federal measures	Role of the cantons	Role of other actors
Stage 2		
The Confederation shall update the corresponding specialist information periodically (implementation guides, basic reports etc.).	Dissemination of information, implementation and monitoring	–

> Wildlife rest areas

Strategic direction 9.3

"Rest areas for wild animals" (wildlife rest areas) shall be designated insofar as required. See Chapter 3.10 ("The use of the forest for leisure and recreation shall be respectful").

Impacts

No adaptations to the legislation are required and no additional financial requirements arise.

3.10

The use of the forest for leisure and recreation shall be respectful

The recreational use of forests increased continuously in recent years. The current National Forest Inventory (NFI3) allocates ten percent of forest area to the function of recreation.²⁵ However, leisure and recreation use is only respectful in part and sometimes conflicts with other uses of the forest (wood harvesting, biodiversity etc.). In addition, in extreme cases, it can pose a threat to forest conservation. Certain information deficits exist in relation to the state and development of leisure and recreation use of the forest.

Due to the free accessibility of the forest, additional measures for biodiversity, in particular the generation of more dead and old wood, can lead to issues surrounding regarding liability risks for forest owners.

Leisure and recreation activities in the Swiss forest shall be respectful. Forest visitors shall be satisfied with the services provided.

Challenges**Objective 10**

Leisure and recreation in the forest

Photo: Image Source

Strategic directions and measures

> Communication

Strategic direction 10.1

The public shall be informed and made aware of the correlations and interconnections in the forest ecosystem.

Federal measures	Role of the cantons	Role of other actors
Stages 1 & 2		
The Confederation shall facilitate expert networking and disseminate knowledge on the forest and wood.	Dissemination of information	Forest owners shall disseminate information.
Stages 1 & 2		
The Confederation shall implement measures to raise awareness in connection with the leisure and recreation use of the forest (e.g. on the benefits and dangers of standing dead wood) and shall contribute to further training in this area.	Dissemination of information	Forest owners shall disseminate information.
Stages 1 & 2		
The Confederation shall support organisations that do public relations work for the promotion of the respectful recreational use of the forest.	–	–

> Valorisation of forest services

Strategic direction 10.2

Information bases shall be developed and conditions created for the valorisation of forest services provided by forest owners (see also Chapter 3.6).

Federal measures	Role of the cantons	Role of other actors
Stage 1		
The Confederation shall provide information bases and document examples of the planning, management and valorisation of recreational forests (including at national level).	Interpretation in the regional context and implementation of adequate measures, implementation	Forest owners and managers shall interpret the information bases and examples in the local context, and shall implement adequate measures.

> Triple-win recreational forest strategy

Strategic direction 10.3

A “Triple Win Strategie Erholungswald” (“Triple-win recreational forest strategy”) is being developed. It will demonstrate the advantages of recreational forest use for all dimensions of sustainability.

Federal measures	Role of the cantons	Role of other actors
Stage 2		
With the participation of the actors, the Confederation shall develop a strategy that demonstrates the advantages of recreational forest use for all dimensions of sustainability.	Interpretation in the regional context and implementation of measures	Interpretation in the regional context and implementation of measures

> Wildlife rest areas**Strategic direction 10.4**

“Rest areas for wild animals” (wildlife rest areas) shall be designated, insofar as necessary.

Federal measures	Role of the cantons	Role of other actors
Stage 1		
The instrument of “rest areas for wild animals” shall be established at federal level in the context of the revision of the Ordinance on Hunting and protection of Wild Mammals and Birds (HuntO).	–	–
Stage 1		
The Confederation shall provide guidelines on the designation and uniform marking of “rest areas for wild animals”.	Planning and designation, implementation and monitoring	Forest managers and tourism organisations shall contribute to the implementation of the “rest areas for wild animals”.
Stage 1		
The Confederation shall support the cantons in the public announcement of the “rest areas for wild animals” (internet, maps on the topic of ski sport).	Provision of spatial data	Forest managers and tourism organisations shall disseminate information.

> Legal certainty**Strategic direction 10.5**

Forest owners shall be given greater legal certainty through the clarification of legal issues (in particular liability).

Federal measures	Role of the cantons	Role of other actors
Stage 1		
The Confederation shall examine liability issues in the area of near-natural forest management and recreation in the forest.	–	–

Impacts

Some aspects of the Hunting Ordinance of 29 February 1988 (HuntO; SR 922.01) needed to be revised. The Federal Council carried out this revision and it entered into force on 15 July 2012. It shall be examined whether there is a need for legal adaptation in relation to liability risks for forest owners for forest-typical hazards (e.g. leaving old and dead wood standing). To ensure the spatial coordination of the recreational use of the forest and other spatial aspects at a general level (structural planning), the adaptation of the Spatial Planning Act of 22 June 1979 (SPA, SR 700) shall be examined in the context of the second stage of the revision of this act. Additional financial requirements do not arise.

3.11 **Education, research and knowledge transfer**

The education system must be adapted constantly to the new challenges and shall guarantee sufficient numbers of highly qualified experts on all levels. The focus is on systematic foresight and environmental observation and applied research, the ongoing updating of core forest competencies, the intensification of the alliance between research, education and practice, the continuity of knowledge transfer, further training and exchange of information (e.g. in the area of work safety, working conditions), and various public relations measures (including forest education).

Challenges

The forest education system shall ensure high-quality expert and management skills of those working in and for the forest at all times. Research shall develop scientific information bases and effective methods for the resolution of problems.

Objective 11



Forest warder training

Photo: Emanuel Ammon FOEN / AURA

Strategic directions and measures

> University and vocational education

Strategic direction 11.1

The actors involved in forestry education and training, research and practice shall be brought together to ensure high quality education and training at university and vocational education level in the long term.

Federal measures	Role of the cantons	Role of other actors
Stage 1		
As part of the cooperative structure, the Confederation together with the cantons shall establish a "Netzwerk Bildung Wald Schweiz" ("Swiss Forestry Education Network").	Development of a "Netzwerk Bildung Wald Schweiz" ("Swiss Forestry Education Network") and part of the cooperative structure	–
Stage 1		
The Confederation shall support forest-relevant research and education and training at university level (silviculture, forest policy, forest planning etc.).	–	–

> Continuing education and training

Strategic direction 11.2

The continuing education and training of experts in the forest sector shall be ensured.

Federal measures	Role of the cantons	Role of other actors
Stages 1 & 2		
The Confederation shall promote continuing education and training at university level.	–	–
Stages 1 & 2		
The Confederation, professional associations and educational establishments shall raise awareness among forestry experts of the importance of continuing education and training (e. g. entrepreneurial action in forestry operations).	Awareness raising and dissemination of information	Professional associations and educational establishments shall participate in awareness raising and dissemination of information.
Stages 1 & 2		
The Confederation shall ensure the practical work experience of university graduates by continuing voluntary practical work placements.	Support of voluntary practical work placements	–

> Knowledge transfer

Strategic direction 11.3

The transfer and exchange of knowledge between research and practice shall be improved.

Federal measures	Role of the cantons	Role of other actors
Stage 2		
The Confederation shall promote the transfer of knowledge between practice, research and practice through the development of material and promotion of cooperation.	Dissemination of information, interpretation of material	Actors from practice, teaching and research shall participate in the exchange of information and interpretation of material.

> Work safety and health protection

Strategic direction 11.4

The work safety and health protection of forestry workers and the raising of awareness of these requirements shall be ensured.

Federal measures	Role of the cantons	Role of other actors
Stages 1 & 2		
Together with the professional associations, the Confederation shall ensure the training of forestry workers in the area of work safety and health protection.	–	Professional associations and accident insurers shall implement continuing education and training courses.
Stages 1 & 2		
The Confederation shall raise awareness among forestry workers of work safety and health protection requirements and shall promote courses for forestry workers.	Dissemination of information, implementation or participation in awareness-raising measures	Professional associations and accident insurers shall provide information and training courses.

> Awareness of sustainable forest management**Strategic direction 11.5**

The awareness of the forest and its sustainable development shall be strengthened.

Federal measures	Role of the cantons	Role of other actors
Stages 1 & 2		
The Confederation shall implement awareness-raising measures (communication campaigns, newsletters, information packages for various target groups, presence at trade fairs etc.).	Dissemination of information	Forest owners and organisations shall disseminate information.
Stage 2		
The Confederation shall support the integration of forest-relevant topics into the curricula.	–	–
Stages 1 & 2		
The Confederation shall support training and further education and training activities in forestry education and environmental education.	–	Forest owners and organisations shall offer courses in environmental education.

> Research requirement**Strategic direction 11.6**

The research requirement shall be recognised and communicated to the responsible research actors.

Federal measures	Role of the cantons	Role of other actors
Stages 1 & 2		
The Confederation shall accept indications of research requirements, prioritise them together with its own research requirement and, if appropriate, issue corresponding mandates.	Articulate research requirements	Research shall take research requirements on board.
Stages 1 & 2		
The Confederation shall observe the current developments in the forest and develop long-term perspectives so as to be able to extrapolate future research requirements from them.	–	–

Impacts

Some adaptations to the Forest Act of 4 October 1991 (ForA; SR 921.0) would be necessary to take the developments on the level of forestry practice into account (Art. 21, 29, 39, 51 ForA). No significant additional financial requirements may be expected.

3.12

Other strategic directions

Some strategic directions serve the fulfilment of the objectives defined for several areas and cannot be clearly assigned to a particular objective. Hence, they are presented in this chapter and are based on the general objective that the Swiss forest be managed in a way that enables it to fulfil its functions and services sustainably and equally.



Surveying for the National Forest Inventory NFI

Photo: Emanuel Ammon FOEN / AURA

Strategic directions and measures

> Environmental and other monitoring

Strategic direction 12.1

Regular forest monitoring (National Forest Inventory NFI etc.) and the monitoring of the forestry sector (forestry statistics, test operations networks etc.) shall be ensured as a component of environmental monitoring.

Federal measures	Role of the cantons	Role of other actors
Stages 1 & 2		
The Confederation shall ensure the implementation of an up-to-date and meaningful forest inventory (National Forest Inventory NFI).	Interpretation in the regional context, possible complementary surveys, dissemination of information	–
Stages 1 & 2		
The Confederation shall ensure the implementation of up-to-date and meaningful forest economic monitoring (forestry statistics, test operations network (Forstliche Betriebsabrechnung ForstBAR [forest operational accounting])).	see above	–
Stages 1 & 2		
The Confederation shall carry out periodic surveys on the attitudes of the population to the forest (Waldmonitoring soziokulturell WaMos [socio-cultural forest monitoring]).	see above	–
Stages 1 & 2		
The Confederation shall ensure that long-term studies are carried out on the health and vitality of the Swiss forest.	see above	–
Stages 1 & 2		
The Confederation shall provide periodic reporting on the state of the Swiss forest (e.g. Forest Report), including a sustainability assessment.	see above	–
Stages 1 & 2		
The Confederation shall further develop the strategic bases for the forest monitoring in accordance with the current challenges (forest resources: National Forest Inventory LFI; economics: forest statistics, test operations network, Forstliche Betriebsabrechnung ForstBAR [forest operational accounting]; Society: Waldmonitoring soziokulturell WaMos [socio-cultural forest monitoring]).	see above	–

> Supra-operational forest planning

Strategic direction 12.2

Supra-operational forest planning shall be promoted in the context of the programme agreements with the cantons. This will enable the comparison of interests between the demands for forest services (e.g. protective forest versus forest reserves), in conflict resolution and in the guaranteeing of sustainability.

Federal measures	Role of the cantons	Role of other actors
Stages 1 & 2		
The Confederation shall conclude multiannual programme agreements in the area of "Entscheidungsgrundlagen der Waldplanung" (Decision-making support for forest planning) (management at cantonal level).	Planning, implementation and monitoring of measures	–
Stages 1		
The Confederation shall develop with the cantons supraoperational sustainability criteria and indicators.	Cooperation, implementation of monitoring, application of results in forest planning	–

> Partnerships and synergies**Strategic direction 12.3**

Intersectoral partnerships shall be strengthened and synergies with other (national and international) policy and economic sectors established.

Federal measures	Role of the cantons	Role of other actors
Stages 1 & 2		
The Confederation shall ensure the involvement of the relevant sectors in the forest policy and forest legislation processes.	Consultancy	Consultancy
Stages 1 & 2		
The Confederation shall contribute actively to all forest-relevant policy and legislation processes (spatial planning, agriculture, energy etc.).	Consultancy	Consultancy
Stages 1 & 2		
The Confederation shall establish synergies with other sectors through the development of joint objectives (strategic partnerships).	–	Associations and organisations shall be involved through constructive and open cooperation.
Stages 1 & 2		
The Confederation shall participate in intersectoral networks (e.g. Netzwerk ländlicher Raum [rural development network]).	–	Associations and organisations shall be involved through constructive and open cooperation.

> International affairs

Strategic direction 12.4

International exchange and the participation in international processes (e.g. climate negotiations, negotiations on a European forest convention) shall be ensured.

Federal measures	Role of the cantons	Role of other actors
Stages 1 & 2		
The Confederation shall contribute relevant forestry experience from Switzerland and shall benefit from the experience of other countries.	–	–
Stages 1 & 2		
The Confederation shall safeguard the interests of Switzerland in the context of forest-relevant international processes.	–	–
Stages 1 & 2		
The Confederation shall support and advocate sustainable forest management as an instrument for the coordination and comprehensive guaranteeing of all forest services (forest-relevant conventions and processes at European and global levels).	–	–
Stages 1 & 2		
The Confederation and cantons shall implement international agreements at national level.	Implementation at cantonal level	–

> Information and dialogue**Strategic direction 12.5**

Trust and understanding shall be fostered within the forestry and timber sectors and with the population through information and dialogue.

Federal measures	Role of the cantons	Role of other actors
Etappen 1 & 2		
The Confederation shall implement various communication and information measures (internet presence, newsletter, issue management etc.).	–	–
Etappen 1 & 2		
The Confederation shall participate in the Forum Wald (Forest Forum) and the Forum Holz (Wood Forum) and, if necessary, assume a leadership role. The recommendations of the forums shall be largely taken into account by the Confederation.	Open exchange of information and provision of advice	Associations and organisations shall participate in an open exchange of information and advise the Confederation on matters concerning forest and wood.

Impacts

The existing legal bases are sufficient. Additional finance will not be required.

13 BBI 2011, p. 8731 ff.

14 If not otherwise indicated, the Confederation refers to the FOEN as the federal office responsible for this area.

15 Holznutzungspotenzial im Schweizer Wald – Abschätzungen anhand von Modellen und Szenarien (BAFU, 2011).

16 Federal Office for the Environment (FOEN) 2008: Wood Resource Policy. Strategy, Objectives and Action Plan for the Resource Wood. Bern. 30 pp.

17 www.bafu.admin.ch/aktionsplan-holz (f g i)

18 Federal Office for the Environment (FOEN) 2008: Wood Resource Policy. Strategy, Objectives and Action Plan for the Resource Wood. Bern. 30 pp.

19 Federal Office for the Environment (FOEN) 2008: Wood Resource Policy. Strategy, Objectives and Action Plan for the Resource Wood. Bern. 30 pp.

20 www.bafu.admin.ch/aktionsplan-holz (f g i)

21 Federal Office for the Environment (FOEN) 2008: Wood Resource Policy. Strategy, Objectives and Action Plan for the Resource Wood. Bern. 30 pp.

22 www.bafu.admin.ch/aktionsplan-holz (f g i)

23 The Federal Council rejected a change to the Forest Act in this regard on 14.9.2012.

24 Bundesamt für Umwelt BAFU (Hrsg.) 2010: Wald und Wild – Grundlagen für die Praxis. Wissenschaftliche und methodische Grundlagen zum integralen Management von Reh, Gämse, Rothirsch und ihrem Lebensraum. Umwelt-Wissen Nr. 1013. Bern. 232 S.

25 Based on the survey of local forestry services and existing planning documents.

4 > Overview of Impacts

The implementation of the measures through which the Confederation shall pursue the eleven objectives of Forest Policy 2020 may have legal or financial impacts.

Legal impacts

The legal impacts of the measures presented in the previous chapters are listed and summarised below:

Prevention and control of biotic hazards outside the protective forest: In order for measures for the prevention and remediation of forest damage to be given financial support by the Confederation, the Forest Act of 4 October 1991 (ForA; SR 921.0) will need to be adapted.

**Biotic hazards outside
the protective forest**

Valorisation of forest services: The legal bases and financial conditions shall be examined and established if necessary to enable the valorisation of concrete forest services by forest owners.

Valorisation of forest services



Regional biodiversity objectives (Art. 38 ForA): The adaptation of the Forest Act of 4 October 1991 (ForA; SR 921.0; Art. 38 ForA) shall be examined with a view to legally enshrining regional biodiversity objectives. At the same time, the legal enshrining of principles for requirements of near-natural silviculture shall be examined in the Forest Ordinance of 30 November 1992 (ForO, SR 921.01).

Regional biodiversity objectives

Liability issues for forest owners in connection with leisure-seekers: The need for legal adaptation in relation to the liability risk for forest owners for typical forest hazards (e.g. leaving old and dead wood standing) shall be examined.

Liability issues for forest owners

Spatial coordination between the recreational use of the forest and other spatial aspects: In order to ensure, for example the better interconnection of forest and biotopes in the open land at overall planning level (structural planning), the adaptation of the Spatial Planning Act of 22 June 1979 (SPA, SR 700) shall be examined in the context of the second stage of the revision of the SPA.

Spatial coordination

Adaptations to forestry practice: Some adaptations to the Forest Act of 4 October 1991 (for a; SR 921.0) are necessary to take into account the developments in forestry practice (Art. 21, 29, 39, 51 ForA).

Adaptations to forestry practice

Forest area (Art. 7, 8, 10, 13 ForA): Adaptations of the Forest Act of 4 October 1991 (ForA; SR 921.0) were decided on 16 March 2012 in the context of the parliamentary initiative “Flexibilisierung der Waldflächenpolitik” (“Making forest area policy more flexible”) (09.0474). Associated adaptations to the Forest Ordinance of 30 November 1992 (ForO, SR 921.01) are being developed.

Forest area

Financial impacts

Summaries of the financial impacts of the Forest Policy 2020 are presented individually for each of the eleven objectives presented in Chapter 3. The following table presents an overall summary (the table only shows the additional financial requirement based on the status for 2011):

Target area	2013–2015	2016–2019	total from 2016
Adaptation to climate change (2011: CHF 11 million)	–	+ CHF 20 million	+ CHF 20 million
Conservation and improvement of biodiversity	In context of SBS ²⁶	In context of SBS	In context of SBS
Protection against harmful organisms	+ CHF 2 million	+ CHF 2 million	+ CHF 4 million
Total (per year)	+ CHF 2 million	+ CHF 22 million	+ CHF 24 million
Total ²⁷ (Forest sector overall in 2011: CHF 94 million)			118 million

The total cost to the Confederation of fulfilment of the objectives in the forest sector (protective forest, forestry sector, excluding biodiversity) is around CHF 118 million per year (from 2016). This represents around 45 % of the total expenditure for the fulfilment of the objectives – the remaining costs shall be borne by the cantons, forest owners and other actors.

This chapter presents the Confederation’s financing options for covering the specified additional financial requirements.

CHF 11 million can be transferred from the existing NFA-Programm Waldwirtschaft des Bundes (Federal NFE Programme Forestry Sector) (for the area of climate change).

Ways of valorising the forest CO₂ sink shall be examined with a view to financing the measures carried out in association with climate change. One possibility here is the creation of a forest climate fund (see Draft Motion 11.4164 and adopted forest climate fund in Germany²⁸). At a certificate price of CHF 8 per tonne of CO₂ (status December 2011) and an expected sink service of 1.7 million tonnes of CO₂ per year, this gives a value of about CHF 13.6 million/year for the sink service during the first Kyoto com-

Overview

Confederation’s financing options

mitment period (2008-2012). This contribution can be considerably optimised and improved in future when it will also be possible to offset wood used in construction (in accordance with Art. 14 of the revised CO₂ Act).

In addition, the partial earmarking of proceeds from the CO₂ levy, e.g. for the adaptation of the forest to climate change, shall be examined. The adaptation of the forest to climate change mainly serves the conservation of forest stands (e.g. through the prevention of large scale collapse and the associated CO₂ source effects). Accordingly, adaptation measures shall also be understood as a precondition for the further reduction in CO₂ emissions (mitigation) in the context of the second commitment period of the Kyoto Protocol from 2013.

An additional possibility – e.g. for the financing of recreational facilities – is sponsorship by companies (e.g. for forest learning paths, sport facilities), however only modest contributions for very specific measures can be obtained in this way.

Other financing options, such as the earmarked channelling of funds from the mileage-related heavy vehicle tax (MRHVT) and the fuel tax into the forest, have been examined. Due to their complexity (e.g. the Constitution would have to be changed) and the low financial sums involved, this possibility was rejected.

For the measures demonstrated in the area of biodiversity, the financing options are being examined and developed in the context of the implementation of the Confederation's Swiss Biodiversity Strategy.

26 Swiss Biodiversity Strategy: Requirement for forest biodiversity 2013–2015 +10 million and 2016-2019 +21 million. Total from 2016 +31 million.

27 Total excluding requirement for biodiversity in the forest

28 Press release German Federal Ministry of Food, Agriculture and Consumer Protection of 6.7.2011 (<http://www.bmelv.de/SharedDocs/Pressemitteilungen/EN/2011/138-AI-ForestClimateFund.html>).

> Annex: Indicators and Target Values

> List of indicators and target values for the objectives of the Forest Policy 2020

Objective	Indicator	Target value
The sustainably harvestable wood harvest potential shall be exhausted (Chapter 3.1)	Total volume of wood harvested (m ³ /year) in the Swiss forest for material and energy purposes S: Forest statistics (projected)	8.2 million m ³ /year (harvested wood volumes, i.e. sales volume according to forest statistics plus volume not recorded statistically, e.g. oversize, bark, small quantities in private forests) (In the long term, it is hoped to come close to the sustainable wood harvest potential.) (Target value according to the "Projekt Holznutzungspotenzial" ["wood harvest potential project"]; under development [including distinction between softwood and hardwood])
	Demand for material wood products (corresponds to Wood Resource Policy) S: FOEN, FSO (see Wood Resource Policy)	20% increase in per-capita consumption of sawnwood and wood products by 2015 (compared with 2008)
Climate change: Mitigation (Chapter 3.2)	CO ₂ balance of living and dead forest biomass, including forest soil S: FOEN (greenhouse gas inventory)	Long-term level CO ₂ balance between the forest sink, wood use and wood substitution effects
	CO ₂ removal through wood use (m ³ /year) S: Forest statistics	Exploitation of increment (target values under development)
	Substitution effect of all wood use S: internal FOEN calculation (2009)	Increasing of substitution effect by 1.2 million tonnes CO ₂ /year as compared with 1990
Climate change: Adaptation (Chapter 3.2)	Forest areas with climate-sensitive species composition and structure S: National Forest Inventory (NFI)	25% reduction in climate-sensitive stand area (according to NFI3 total 50,000 ha) Reduction in stands with 90% and more coniferous trees at lower altitudes Results from the "Wald und Klimawandel" ("Forest Climate Change") research programme shall be taken into account.
	Mixed forest areas S: National Forest Inventory (NFI)	25% reduction in the area of critical protective forests by 2040 (protective forests with critical stability and critical regeneration: 68,000 ha according to NFI 3). 10% increase in the proportion of mixed forest area (based on LFI3). <i>Target value to be verified with the Swiss Federal Institute for Forest, Snow and Landscape Research WSL</i>

Objective	Indicator	Target value
The protective forest service shall be guaranteed (Chapter 3.3)	Avoidable fatalities S: WSL damage statistics (in future StorMe event register)	0 (as low as possible)
	Prevented damage S: FOEN event analyses (following major hazard events)	All proportionate measures were taken to prevent damage.
	Proportion of protective forest with fulfilled requirement profiles in accordance with NaiS (Sustainability in the protective forest) S: National Forest Inventory (protective forest module)	70 %
	Proportion of communes/regions/cantons with maintenance strategies for protective measures (forestry planning for protective forest) S: National Forest Inventory (forestry planning survey)	100 %
	Hectares of treated and influenced protective forest area S: NFE controlling	3 % of total protective forest area annually (protective forest designation in accordance with harmonised criteria)
	Compliance with minimum requirements within the NFE protective forest programme (NaiS method) S: NFE controlling (sample controls)	Compliance in 100 % of samples
	Biodiversity shall be conserved and improved in a targeted way (Chapter 3.4)	Species diversity of plants, animals and fungi in the forest S: Biodiversity Monitoring Switzerland, NFI
Protected areas (long-term, i.e. minimum of 50 years, guaranteed forest reserves and permanent islands of old growth) S: Forest reserve database; NFE controlling		Minimum 8 % of forest area (minimum 10 % by 2030) At least 15 large forest reserves (>500 ha),
Priority areas (e.g. forest margin, species promotion, chestnut groves, wooded pastures etc.) outside of protected areas S: NFE controlling		10,000 ha
Near-naturally managed forest area in accordance with legal requirements for near-natural silviculture S: NFI, cantonal survey		On 100 % of managed area (with interventions)
Standing and lying dead wood volume (in accordance with NFI3, survey DBH threshold: 12 cm diameter) S: National Forest Inventory (NFI)		Jura, Central Plateau, Southern Alps: 20 m ³ /ha; Pre-Alps, Alps: 25 m ³ /ha

Objective	Indicator	Target value
Forest area shall be conserved (Chapter 3.5)	Change in forest area in ha (National Forest Inventory) S: National Forest Inventory (NFI)	Minimum: area according to NFI3.
	Wooded pasture, chestnut/walnut groves, grazing forest area S: National Forest Inventory (NFI)	No decline (according to NFI3)
	The development of forest area and interconnectivity in the landscape correspond with the defined spatial development objectives (in accordance with structural planning, spatial and landscape development strategies, other spatially-relevant plans). S: Separate cantonal survey	100 % correspondence
The economic efficiency and performance of the forestry sector shall improve (Chapter 3.6)	Overall financial result per forestry operation. S: Forest statistics, test operations network (TBN)	90 % of operations report profits.
	Wood harvesting costs per m ³ S: Test operations network (TBN)	Positive contribution margin
	Forest services outside wood production (e.g. including CO ₂ certificates) S: Test operations network (TBN)	Positive contribution margin
	Contribution margins of the activities of public forestry operations S: Test operations network (TBN)	Positive contribution margin for all activities (including recreation)
	Value creation S: overall financial result for forestry operations	To be developed
Forest soil, drinking water and the vitality of the trees shall not be endangered (Chapter 3.7)	Nitrogen input S: Reports of the Institute for Applied Plant Biology (IAP); nitrogen input and deposition in accordance with the National Air Pollution Monitoring Network (NABEL); Langfristigen Waldökosystem Forschungsflächen (LWF) (long-term forest ecosystem research areas)	max. 20 kg N/ha per year
	Soil acidification: (critical parameters for BC/Al ²⁺ , pH and base saturation). S: Reports of the Institute for Applied Plant Biology (IAP), Langfristigen Waldökosystem Forschungsflächen (LWF) (long-term forest ecosystem research areas)	According to regional evaluations 20 % of areas with contraventions of critical values in the main root area present an improvement compared with 2000. Significant improvement in LWF**and cantonal permanent monitoring areas.
	Exceeding of critical levels for ozone. S: National Air Pollution Monitoring Network (NABEL)	Minus 20 % compared with 2000.
	Traffic lanes apart from forest tracks/machine tracks S: National Forest Inventory (NFI)	Proportion of lanes apart from forest/machine tracks less than 20 % (NFI 3: 24 %)

Objective	Indicator	Target value
The forest shall be protected against harmful organisms (Chapter 3.8)	Introduced organisms with particularly high damage potential in accordance with the Plant Protection Ordinance S: WSL, Swiss Federal Plant Protection Service.	0
	Threshold values (to be defined) for invasive species and harmful organisms in general (forest protection). S: Monitoring (Input WSL), to be developed	Not exceeded in the medium-term
	Successfully implemented control measures in the event of damage S: Separate cantonal survey	80 % of forests with exceeded threshold values
The forest-wildlife balance is guaranteed (Chapter 3.9)	Forest area with sufficient regeneration of main tree species S: National Forest Inventory (NFI)	75 % of forest area in each canton
	Age and gender distribution of hunting bag S: Swiss hunting statistics	Age and gender distribution is target oriented (per wildlife space, see NFA Manual)
	Structural diversity of the forests S: National Forest Inventory (NFI)	Increase
	Existing forest-wildlife strategies in the cantons S: Implementation guide	All cantons with requirement
The use of the forest for leisure and recreation shall be respectful (Chapter 3.10)	Satisfaction of forest visitors with services (quantity and quality). S: Sociocultural forest monitoring (WaMos)	Forest visits remain constant. Increase in satisfaction.
	Quantity and quality with recreational/natural facilities. S: NFI/local recreation model	Better quality of natural facilities and sufficient recreational facilities
	Number of conflicts on "leisure in the forest". S: WAMOS/Argus WVS, FOEN press reviews (qualitative assessment).	As few conflicts as possible (Δ number of media reports/year).
	Area of recreational forests: – designated forest with leisure and recreation as priority service; S: Waldentwicklungspläne, WEP (Forest development plans), NFI – Forest area according to current importance for local recreation S: Waldentwicklungspläne WEP (Forest development plans), NFI.	Consideration in accordance with regional planning

Objective	Indicator	Target value
Education, research and knowledge transfer (Chapter 3.11)	Matching of training profiles with requirement profiles of employers. S: Separate survey (responses from cantons, professional and sectoral associations)	No fundamental deviations between training and requirement profiles
	Proportion of experts in the forestry profession who engage in further training (vocational continuing education and training). S: Swiss Statistical Yearbook of Forestry, separate survey (education centres, codoc)	at least 80 %
	Number of fatalities during forestry work, taking commercial work into account S: Swiss Statistical Yearbook of Forestry, suva evaluation	Reduction
	Relevant issues adopted and worked on by research S: Separate survey (qualitative through surveys of experts)	100 %
	Institutionalised, regular dialogue between research, teaching and practice S: Status report of the Eidgenössische forstliche Ausbildungskommission, EFAK (Swiss Forestry Education Commission)	Takes place regularly to the satisfaction of all participants