

**ENVIRONMENTAL
SERIES No. 363**

Forests

**Swiss
National Forest
Programme
(Swiss NFP)**

**Action Programme
2004–2015**



Swiss Agency for
the Environment,
Forests and
Landscape
SAEFL

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Authors

Swiss Agency for the Environment, Forests and
Landscape (SAEFL), Project Management Swiss NFP:
Werner Schärer, Director, Swiss Forest Agency,
Claudia Jacobi, Sandra Limacher, Rolf Manser

BHP – Brugger & Partner, Zürich:
Professor Ernst A. Brugger, Guido Cavelti

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Ursula Nöthiger-Koch, 4813 Uerkheim

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Table of contents

Abstracts	5	5.7	Cross-sectoral partnerships	51	
Foreword	7	5.8	Information and dialogue	53	
Summary	9	5.9	Measures relating to the other objectives	54	
1 Why Do We Need A Forest Programme?	13	6 Implementation	55		
1.1	Background and starting point	13	6.1	Subsidy mechanisms	55
1.2	Assessment of previous forest policy	14	6.2	Organization and allocation of roles	57
1.3	The international context	17	6.3	Estimation of the cost of the Swiss NFP	58
2 Process and Methodology	19	6.4	Partial revision of the Federal Law on Forests	60	
2.1	Project organization	19	6.5	Programme monitoring and evaluation	63
2.2	Project process	20	6.6	Crisis management in the aftermath of extreme events	64
2.3	Participation and transparency	21	Annexes	65	
2.4	Integration of findings from other ongoing projects	22	1	Acronyms	65
3 Main Trends and Problems	23	2a	List of diagrams and graphics	70	
4 Vision and Objectives	28	2b	List of tables	70	
4.1	Main objective	28	3	Bibliography and references	71
4.2	Vision	29	4	Glossary	72
4.3	Twelve objectives, five priorities	30	5	Mandates for the development of the Swiss NFP	77
4.3.1	The forest's protective function is guaranteed	31	6	Members of the Swiss NFP Forum	78
4.3.2	Biodiversity is conserved	32	7	Key questions raised by the Swiss NFP working groups	79
4.3.3	Forest soils, trees and drinking water are not threatened	33	8	Members of the Swiss NFP working groups	80
4.3.4	The wood value-added chain is strong	34	9	Comments and position papers	86
4.3.5	The economic viability of the forest sector has improved	35	10	Dialogue with interest groups	87
4.4	Other objectives	35	11	The Swiss forest in numbers	88
4.5	Conflicts between objectives	37	12	The challenges arising in the different focus areas	90
5 Strategic Directions and Measures	39	13	Principles	95	
5.1	Overview	39	14	Keys: correspondences between the final report and findings of the working groups	97
5.2	Protective forest and biodiversity: priority services	39	15	Thematic overview sheets	101
5.3	Guaranteed protection of the forest ecosystem	42			
5.4	Improved structural efficiency in the forest sector	45			
5.5	Good market conditions for wood utilization	46			
5.6	Innovation through education, further training, research and development	49			

Abstracts

- E** The Swiss National Forest Programme (Swiss NFP) is an action programme at federal level that defines the State's activities in the forest sector and co-ordinates the sector's cooperation with other sectors. A long-term vision for the desired status of the forest has been developed which is based on an analysis of current problems and trends. Twelve quantified objectives for the year 2015, the strategy for achieving these objectives, the necessary policy instruments and around 100 measures have been derived from this vision. In terms of the programme implementation, the objectives and measures are prioritized and the necessary resources allocated. The Swiss NFP provides the basis for the orientation of federal Swiss forest policy and for the development of a consultation document for the partial revision of the Federal Law on Forests. The Swiss NFP fulfils the international and pan-European requirements for a National Forest Programme.
- Keywords : forest programme, forest policy, National Forest Programme
- D** Das Waldprogramm Schweiz ist ein Handlungsprogramm für den Bund, welches die Bundesaktivitäten für den Bereich Wald festlegt und die Zusammenarbeit mit anderen Sektoren koordiniert. Basierend auf einer Analyse von Problemen und Trends wird eine langfristige Vision über den gewünschten Zustand des Waldes festgehalten. Davon werden 12 quantifizierte Ziele für das Jahr 2015, die Strategie zur Zielerreichung und die dafür notwendigen Instrumente sowie rund 100 Massnahmen abgeleitet. Im Hinblick auf die Umsetzung werden die Ziele und Massnahmen priorisiert und die notwendigen Ressourcen zugeteilt. Das Waldprogramm bildet die Grundlage für die Ausrichtung der Waldpolitik des Bundes und für die Ausarbeitung einer Vernehmlassungsbotschaft für die Teilrevision des Waldgesetzes. Das Waldprogramm entspricht den internationalen und gesamteuropäischen Anforderungen für ein nationales Waldprogramm.
- Stichwörter : Waldprogramm, Waldpolitik, National Forest Programme
- F** Le Programme forestier suisse (PFS) est un programme d'action qui fixe les activités de la Confédération dans le domaine forestier et coordonne la collaboration avec d'autres secteurs. Partant d'une analyse des problèmes et des tendances, il propose une vision à long terme de l'état souhaité des forêts. A partir de cette vision, il fixe 12 objectifs quantifiés pour 2015, définit la stratégie et les instruments nécessaires pour atteindre ces objectifs et propose une centaine de mesures. Dans la perspective de la mise en œuvre, il attribue à ces objectifs et à ces mesures des priorités et dégage les ressources nécessaires. La Confédération se fondera sur le Programme forestier suisse pour définir sa politique forestière. Ce document servira aussi de base pour l'élaboration du message concernant la révision partielle de la loi sur les forêts. Le Programme forestier suisse satisfait aux exigences paneuropéennes pour les programmes forestiers nationaux.
- Mots-clés : programme forestier, politique forestière, programmes forestiers nationaux

I Il Programma forestale svizzero (PF-CH) è un programma d'azione che definisce le attività della Confederazione in ambito forestale e coordina la collaborazione con altri settori. Partendo dall'analisi di problemi e tendenze, esso mostra, in una prospettiva a lungo termine, la procedura da seguire affinché le condizioni delle foreste possano raggiungere i livelli auspicati. Vengono in particolare fissati dodici obiettivi quantificati per il 2015, una strategia ed i relativi strumenti per il loro raggiungimento nonché cento misure da adottare. Ai fini dell'attuazione vengono inoltre stabilite delle priorità tra le misure e gli obiettivi previsti, sulla base delle quali saranno poi assegnate le risorse necessarie. Il PF-CH costituisce il fondamento della futura politica forestale della Confederazione e funge da base per l'elaborazione del messaggio relativo alla revisione parziale della legge federale sulle foreste. Risponde inoltre ai requisiti fissati a livello europeo per i programmi forestali nazionali.

Parole chiave :
Programma forestale,
politica forestale,
National Forest
Programme

Foreword

The forest programme is the basis of Switzerland's new forest policy for the period 2004 to 2015. It represents the outcome of an intensive participatory process that took place during 2002 and 2003 and involved numerous reputable experts, practitioners, scientists and politicians from the forest and wood sector. The participants developed the programme content in thematic working groups and monitored the process closely in a forum representing the various political interests.

The report presents the five priority objectives for Switzerland's new federal forest policy which will provide important impetus for overcoming the latent crisis that has been developing in the forest and wood sector for some years. While the Confederation's involvement in the new process will be extensive and targeted, it will not be able to achieve the programme's objectives alone. The strengthening of partnerships with other policy sectors, the relevant economic sectors and the cantons will also have a crucial role to play.

The Swiss Agency for the Environment, Forests and Landscape is ready to start with the immediate implementation of the programme's first measures. The partial revision of the Federal Law on Forests will be carried out at the same time; around one third of the articles in the law need to be adapted. Following the parliamentary consultation and debate procedures in 2005/2006, this task should be completed by 1 January 2007. The forest programme provides an excellent basis for this partial revision.

If we succeed in securing the services provided by the forest that serve the common good up to and beyond the year 2015 and in creating an efficient forest sector with a strong value-added chain, we will have made a decisive step towards guaranteeing the sustainable management of our forests.

Swiss Agency for the Environment, Forests and Landscape

Deputy-Director
Willy Geiger

Director, Swiss Forest Agency
Werner Schärer

Summary

Chapter 1

The Swiss National Forest Programme (Swiss NFP) is an action programme that defines and coordinates the Swiss Confederation's forest-related activities up to and including the year 2015. It is based on the nationally and internationally recognized principles of sustainable forest management.

The Swiss Confederation basically sees its role for the future as securing the forest services that serve the common good, in particular protection against natural hazards and conservation of biological diversity. It is also interested in ensuring that Swiss wood production is not only maintained in the long term but also intensified: wood is an important renewable native raw material and energy source. When used in construction, wood contributes to the improvement of the CO₂ balance through the storage of carbon and, therefore, contributes to counteracting the effects of climate change. The activities of the forest and wood sector are influenced by regional cycles and this contributes to the protection and conservation of the environment. Moreover, the sector supports around 94'000 jobs in Switzerland.

Twelve objectives, five priorities

Chapter 4.1

The main objective of the Swiss NFP is to guarantee sustainable forest management in Switzerland, and as a precondition to create favourable framework conditions for an efficient and innovative forest and wood sector. It also aims to ensure that the forest will continue to provide the services that society expects of it in the future, and do this in a cost-effective way.

Chapters 3 and 4.3

The Swiss NFP analyses the current and future problems facing the forest and derives twelve objectives from them. Based on the principle of subsidiarity and in view of the reduced availability of public funding (Budgetary Relief Programme 2003), the Confederation is concentrating on five priority objectives for which most of the available resources will be used. These resources include financial support, regulatory and communicative instruments. The prioritization is based on the current and foreseeable future situation with respect to (federal) responsibility and action requirement:

- *The forest's protective function is guaranteed:* the services of the forest in the protection of human life and infrastructure (settlements, railways, roads etc.) are guaranteed sustainably and consistently throughout Switzerland.
- *Biodiversity is conserved:* the animals and plants that live in the forest and the forest as an ecosystem are conserved. Species that are naturally common in Switzerland remain common, species that have become rare become more common again and there is an increase in ecologically valuable tree species. The forest is allowed to develop naturally within a representative area (strictly protected forest areas, islands of old growth, dead wood).
- *Forest soils, trees and drinking water are protected:* forest soils, trees and drinking water are not at risk from the input of contaminating substances, inadequate management and the corresponding physical effects.
- *The value-added wood chain is strong:* the increased demand for wood and wood products in all application areas leads to increased added value and a bet-

ter CO₂ balance for Switzerland. The contribution of wood to the improvement in the CO₂ balance is rewarded through economic incentives. The enterprises involved in the value-added wood chain are more productive and innovative and therefore more competitive.

- *To forest sector's economic viability is improved:* the optimization of the distribution of tasks and structures in the forest management leads to greater efficiency. This results in the improvement of the economic viability of forest enterprises in particular.

Chapter 4.4

Where possible, the Confederation will pursue other objectives with lower priority in the areas of forest area conservation, landscape diversity, interconnected forests/forest edges, potentially harmful organisms, forest and game issues, recreation and leisure as well as forestry education and research.

Seven strategic directions

Conflicts of interest arise in the fulfilment of the objectives. The combination of the following strategic orientations should ensure that the stated objectives are fulfilled efficiently and effectively way; it should also facilitate the better balancing of interests in forest policy.

Chapter 5.2

- *Protective forest and biodiversity as priority services:* to ensure the provision of these priority services in the multifunctional forest, they need to be identified at planning level. This means that – in addition to other services – specific protective and biodiversity services should be provided as a priority in defined forest areas. The priority services are defined in programme and service agreements between the Confederation, cantons and forest owners. The payments to be made to the latter are defined in these agreements.

Chapter 5.3

- *Maintenance of forest ecosystem:* rules must be defined to ensure that ecological sustainability is not threatened by wood production and other activities. The concept of “close-to-nature forest management”, which is enshrined in the legislation currently in force, is unclear in practice and leaves much scope for interpretation. It is intended to overcome this uncertainty through the binding definition of a concrete ecological standard which presents transparently the operative freedom available to the forest owners and managers while avoiding long-term ecological damage. The standard does not redefine “close-to-nature forest management”; it merely sets minimum requirements that must be complied with. In addition to the ecological standard, it is planned to create specific species protection programmes that are eligible for funding and are not associated with priority areas.

Chapter 5.4

- *Improved structural efficiency in the forest sector:* the Confederation would like the forest sector to function efficiently as the sector makes a key contribution to the fulfilment of the Swiss NFP objectives through its activities in the area of public services and wood production. The forest sector needs to make better use

of the existing scope for the more efficient provision of both public and private-sector services. To do this it needs to develop a better understanding of itself as part of entire value chains. The Confederation supports the forest sector by providing temporary funding for the structural improvement of forest operations and by achieving targeted improvements in general framework conditions.

Chapter 5.5

- *Good market conditions for wood utilization:* the key to a viable and profitable Swiss forest and wood sector lies in a strong demand for wood as well as an effective and competitive wood industry with the capacity to meet this demand with its own products. The Confederation actively supports the demand for Swiss wood. It creates good framework conditions for the sector and provides financial incentives to enable the wood industry to cope better with the structural change and to become more competitive internationally.

Chapter 5.6

- *Innovation through education, further training, research and development:* Education, further training and research are all driving forces in the essential innovation process in the commercial, technical and institutional contexts. A flexible forest educational system that meets today's requirements must be able to guarantee the core skills and competencies required by the forest and wood sector. Of particular importance here, *inter alia*, are the increasing requirements arising from the adoption of integrated approaches and cooperation. An entrepreneurial approach and action as well as new ideas are also essential prerequisites for success. A stronger more application-oriented research sector combined with efficient technology transfer will ensure the translation of the knowledge gained into new wood materials, high-performance materials, construction system solutions etc.

Chapter 5.7

- *Cross-sectoral partnerships:* cross-sectoral partnerships represent an important precondition for the long-term guarantee of sustainable forest management. Of particular importance is cooperation with regional policy, agricultural policy, energy policy, spolicy, rural development policy and research policy. Partnerships between the Confederation, cantons and private-sector actors (financial institutions, institutional investors, foundations etc.) also have a very important strategic role to play here. Such alliances are playing an increasing role in the area of integrated problem solving.

Chapter 5.8

- *Information and dialogue:* good cooperation between all participants is essential for the implementation of the Swiss NFP. This necessitates mutual trust that can only be achieved through intensive communication. Thus, the Confederation supports factual and future-oriented information policy and promotes both the exchange of experience and innovation in forest policy. Targeted public-relations activity will inform and raise awareness of the interrelations within the forest ecosystem. The dialogue with the various stakeholder groups will be active and solution-oriented.

Implementation

Chapter 6

Although the majority of the Swiss NFP measures can be implemented directly, some of the measures require the partial revision of the Federal Law on Forests. The total cost of the programme is around CHF 2.7 billion (for the period 2004 to 2015) which represents annual costs of around CHF 95 million (not including costs associated with technical protective measures, forest surveys, additional educational projects, the implementation of the Federal Law on Hunting). By concentrating the available financial resources on the most important measures, the Swiss NFP can be implemented in accordance with the Budgetary Relief Plan 2003. However, any further cuts in funding would make it impossible for the programme to achieve its objectives.

Swiss NFP – the 10 most important innovations

	Previous forest policy	Swiss NFP
Objectives	Sustainable forest policy with special emphasis on forest area conservation.	Comprehensive sustainable forest management with special emphasis on the fulfilment of five priority objectives.
Strategic direction	Multi-functionality of forests right down to the smallest areas.	Multi-functionality over a wider area, guaranteed provision of priority services (protective forests and biodiversity) in relevant forest areas.
	“Close-to-nature forest management” as a central requirement that is not, however, defined in detail.	Definition of an ecological standard enshrined in the law.
	Strict preservation of forest area.	Strict preservation of forest area, but a more flexible approach to increasing forest area due to agricultural abandonment.
	Lack of distinction between the provision of public services and commercial activities, i.e. wood production.	Clear distinction between payment for public services and support for private-sector activities.
	Forest policy as a largely separate sectoral policy.	Strong emphasis on cross-sectoral cooperation and an integrated policy conception.
The Confederation's financial contributions	Subsidising costs (support for individual projects).	Subsidising services and results (programme and service agreements), support for individual projects largely eliminated.
	-	Support for the structural adaptation of forest operations for a limited period.
	-	Investment loans for innovations in the wood sector.
The Confederation's responsibility	The Confederation is responsible for strategies and measures.	Focus on strategic responsibility; the cantons have greater responsibility at operative level.

1 Why Do We Need A Forest Programme?

1.1 Background and starting point

Ever-increasing expectations of the forest

The Swiss forest sector faces new challenges in the 21st century and forest policy is an increasingly complex matter. A lot is expected of the forest. As a vital basis of life used by man, animals and plants it provides numerous services wanted and needed by society. It is part of our diverse living environment and its significance varies according to its location (city, urban agglomeration, rural area, mountain region):

- *Forest area and landscape management*: based on its size, distribution pattern and structural variety, the forest is an essential component of a cultural landscape that is richly varied, both aesthetically and ecologically.
- *Protection of natural resources*: as an intact ecosystem, the forest plays a key role in ensuring the supply of various environmental goods and services used directly and indirectly by man. These include: clean ground water, regulation of the water drainage system, conservation of biologically functional soils, protection against erosion, absorption and storage of CO₂ and the improvement of regional air quality and climate conditions.
- *Wood and other forest products*: the forest supplies man with sustainably produced wood, an important renewable native raw material and energy source ,as well as with other economically beneficial products.
- *Species diversity and habitats*: the forest provides a habitat for native flora and fauna and thus makes a crucial contribution to the conservation of biodiversity. Large, near-natural and interconnected forests, in particular, play a special role in the protection of species.
- *Protection against natural hazards*: the protective forest safeguards human life and infrastructure against natural hazards.
- *Recreational and leisure area*: the forest provides a place for the general public to engage in recreational and sporting activities. It promotes good health and quality of life and gives people an opportunity to maintain a relationship with nature.

Extreme weather events

Storms like Vivian (1990) and Lothar (1999), avalanche and flooding disasters (1999 and 2000) and droughts (2003) are raising new questions and issues that have come to the fore since the last major revision of the Swiss forest legislation (1991).

Globalization

The economic situation of the Swiss forest sector is precarious and threatens the forest management required for the provision of the desired public services. As a result, the management of forests in a way that makes it possible to provide the services expected of them is under threat. In view of globalization, like many other sectors, the forest sector cannot rely on internal market protection. The sector is also closely connected with the rest of the world through its involvement in the wood trade; the ever-increasing locational competition in the wood sector ultimately affects the forest sector and regional economies. Thus, the only locations that can hope to survive into the future are those that can compete internationally thanks to their favourable framework conditions.

The Swiss NFP provides the answers	In order to develop solutions, adapt policy implementation tools and make the necessary amendments to the forest legislation, Switzerland needs a widely-recognized political action programme, ¹ a Swiss National Forest Programme (Swiss NFP) that clearly defines Swiss forest policy.
Integrated approach	The Swiss NFP is based on an analysis of trends and problems and incorporates a vision, concrete objectives and strategic directions as well as measures and instruments. It should also identify and take the social, ecological and economic demands on the forest into account. However, these demands are sometimes contradictory and while the Swiss NFP cannot entirely resolve them, it can highlight potential areas of conflict and the best way to deal with them. A key characteristic of the programme is the fact that it was developed jointly and on a very broad basis by experts from within and outside the forest and wood sector.
Mandates	With the Swiss NFP, SAEFL is fulfilling two mandates: the mandate defined in the legislative planning for the period from 1999 to 2003 and the mandate issued by the Swiss Federal Department of Environment, Transport, Energy and Communications (DETEC) of 9 May 2001 (cf. Annex).

1.2 Assessment of previous forest policy

Assessment based on various partial studies	The following assessment of previous forest policy in Switzerland is not based on a single comprehensive analysis, but on different individual evaluations, studies and interpretations (empirical data surveys, expert reports, public surveys) which together enable the assessment of the efficiency, effects and success of forest policy.
Sustainability assessment: the strengths	In 1998, Switzerland commissioned an internationally renowned group of experts to assess its forest policy from the perspective of sustainable forest management. ² The resulting report highlighted the following strengths of Swiss forest policy:

¹ An action programme entitled "General Concept for a Swiss Forest and Wood Policy" was developed as early as 1975. This concept assessed "whether the ways in which the forest and wood sectors were previously operated were still compatible with the current social and economic situation or whether the existing approach should be adapted to the new situation". (Gesamtkonzeption für eine schweizerische Wald- und Holzwirtschaftspolitik, Hauptbericht der vom Eidg. Departement des Innern eingesetzten Expertenkommission, Eidg. Departement des Innern, Bern 1975). This concept was only partly implemented in practice. Of the measures proposed in the report, around one third were implemented fully, one third were implemented in part and one third were never translated into action. This was mainly due to the insufficient integration of the cantons and forest owners into the development process and the neglect of central issues concerning the implementation of the concept. Furthermore, attention was deflected from the conceptual approaches by the debate surrounding *waldsterben* (cf. Geschichte und Umsetzung der Gesamtkonzeption für eine schweizerische Wald- und Holzwirtschaftspolitik, ETH Zürich, Professur Forstpolitik und Forstökonomie, Zürich 1998, unpublished).

² Sustainability Assessment of Swiss Forest Policy. Background report: Swiss Agency for the environment, Forests and Landscape (SAEFL); Environmental documentation No. 120, Bern 1999

- The strict enforcement of the forest area protection regime has ensured that forest area conservation has been and will continue to be implemented effectively for decades, in both central and remote regions.
- A comprehensive and target-oriented set of instruments is available to ensure the supply of the non-commercial services of the forest, such as landscape conservation and the protection of settlements and infrastructure in mountain regions.
- By adopting a consistent focus on close-to-nature forest management in its management activities, the forest sector helps to create harmony between economic, ecological and social concerns.
- Based on Switzerland's constitutional democratic institutions, forest policy benefits from the participation of the population and consultation between governmental bodies at all levels.

**Sustainability
assessment: Areas
requiring reinforcement**

The assessment also mentions significant problem areas and suggests possible solutions:

- The forest operations are too dependent on subsidies and are, therefore, inefficient in economic terms. Entrepreneurial initiatives and the creation of economically autonomous operations should be promoted.
- The system for granting public subsidies should be streamlined and targeted at priority problems. The shortcomings of the current system involve the lack of clear objectives and quantifiable implementation criteria as well as excessive payments for existing costs. Forestry activities exclusively centred on wood production should not be subsidized.
- The number and size of protected forest areas should be increased. The current initiatives for the development of a national network of representative and unique protected forest areas should be implemented. The instruments provided for the effective protection of these forest areas should be improved.
- The political objectives and corresponding implementation measures needed to control the increase in forest area do not exist. The proportion of forest desired and its geographical distribution should be defined and the resulting increase in forest area should be managed accordingly. The current approach to forest conservation should be complemented by a more differentiated policy based on cross-sectoral use and land-use planning.
- The insufficient regeneration of mountain forests together with other factors (e.g. absence of management and wood harvesting, game damage, overgrazing etc.) has led to the over-maturity and structural poverty of forest stands. The current instruments for the regeneration of over-mature mountain forests do not appear to work. This problem should be tackled using new methods.
- The deposition of significant volumes of pollutants (exceeding of critical limits of e.g. acid and nitrogen deposits) continues to represent a threat to the health and vitality of the Swiss forest. Political measures to avert this threat should be intensified.

Sustainability Assessment of Swiss Forest Policy. Executive Summary. Swiss Agency for the Environment, Forests and Landscape (SAEFL), Environmental Series No. 313, Bern, 1999.

**Consequences of the
National Forest Inventory**

Similar findings and conclusions are contained in the second National Forest Inventory (NFI2).³ NFI2 was carried out between 1993 and 1995, i.e. ten years after the first National Forest Inventory, and demonstrates the changes that took place in the Swiss forest over the decade. The following eight conclusions for Swiss forest policy have been derived from a political analysis of NFI2:⁴

- Forest policy triggers many of the desired effects. However, certain problems exist whose resolution requires a concerted effort.
- The current clearing policy is maintained despite the increase in forest area. A differentiated approach should be considered in areas in which the forest has increased significantly in recent years.
- The forest is becoming older and richer in terms of its growing stock – increased regeneration is urgently required.
- A differentiated strategy is needed for the conservation of biological diversity (allowing natural development, on the one hand, and promoting biodiversity through targeted intervention, on the other).
- The forest offers opportunities for recreation and leisure and forest owners are responsible for providing and maintaining the necessary infrastructure. These services must be remunerated.
- Many protective forests are losing stability. Their protective function must be ensured through targeted maintenance measures.
- Wood should be harvested and its sale actively promoted.
- The forest access network is largely complete and funding for the construction of forest roads is no longer a prerequisite to ensure cost-effective forest management. The economic viability of forest operations should be promoted through the targeted improvement of operating structures.

**Expert report on
“Financial Aid”**

The expert report on “Financial Aid”, compiled in 1994, revealed fundamental gaps in existing practices for the allocation of federal subsidies and the forest sector was among those affected.⁵ The following weaknesses were identified:

- The subsidy rates proposed in the Federal Law on Forests are graded on the basis of the financial strength of the cantons. This results in the confusion of forest policy and finance policy objectives.
- The maximum subsidy rates are high and cost-oriented. Cost-based payments are, in fact, the rule in forestry. This leads to the creation of false incentives and priorities.
- Due to the detailed nature of the federal regulations, the cantons are restricted in their scope for action. Furthermore, the detailed subdivision of subsidies among individual measures and large numbers of individual projects gives rise to higher

³ Schweizerisches Landesforstinventar, Eidg. Forschungsanstalt für Wald, Schnee und Landschaft (WSL), Birmensdorf, 1999.

⁴ The Swiss Forest – Taking Stock, Interpretation of the Second National Forest Inventory in terms of forest policy, Swiss Agency for the Environment, Forests and Landscape, Bern, 1999.

⁵ Der Finanzausgleich zwischen Bund und Kantonen; Expertise zu den finanziellen Hilfen und Abgeltungen des Bundes an die Kantone im Auftrag der Eidgenössischen Finanzverwaltung und der Konferenz der kantonalen Finanzdirektoren. Frey R.L., Spillmann A., Dafflon B., Jeanrenaud C., Meier A, Bern, 1994.

administrative costs and makes it more difficult to work towards the fulfilment of strategic objectives.

WaMos survey

A survey of the Swiss population's views on the forest and forest policy revealed a fundamentally positive attitude to the forest.⁶ The Swiss forest is perceived by all social classes and in all geographical areas of Switzerland as an extremely important location for recreation and the first-hand experience of nature. The main forest policy instruments (in particular the ban on clearing, the right of free access to forests, forest maintenance subventions) enjoy a high level of acceptance among the Swiss population. Although some gaps exist in the population's knowledge about the forest and forest sector, there is a great thirst for information on the topic.

1.3 The international context

Commitment to sustainable forest management

By signing the Declaration of Forest Principles and Chapter 11 of the Agenda 21 Action Programme at the United Nations Conference on Environment and Development (Rio de Janeiro 1992), Switzerland committed to sustainable forest management. In order to specify the concept for further implementation, some 40 forest ministers at European level adopted a definition of sustainable forest management (Resolution H1, 1993) as well as the criteria and indicators to be used in its monitoring (Resolution L2, 1998).

**General definition of “sustainable forest management”
(Resolution H1, Helsinki, 1993)**

The stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfil, now and in the future, relevant ecological, economic and social functions, at local, national, and global levels, and that does not cause damage to other ecosystems.

⁶ Some 2000 people were surveyed on forest issues and topics as part of the “Socio-cultural forest monitoring” project (“Wald-Monitoring soziokulturell/WaMos”). Cf. *Gesellschaftliche Ansprüche an den Wald – Meinungsumfrage*, Bundesamt für Umwelt, Wald und Landschaft (BUWAL), Schriftenreihe Umwelt Nr. 309, Bern, 1999.

**Pan-European Criteria for Sustainable Forest Management
(Resolution L2, Lisbon, 1998)**

1. Maintenance and appropriate enhancement of forest resources and their contribution to global carbon cycles
2. Maintenance of forest ecosystem health and vitality
3. Maintenance and encouragement of productive functions of forests (wood and non-wood)
4. Maintenance, conservation and appropriate enhancement of biological diversity in forest ecosystems;
5. Maintenance and appropriate enhancement of protective functions in forest management
6. Maintenance of other socio-economic functions and conditions

**Commitment to National
Forest Programme**

Following the Rio Earth Summit, Switzerland committed to the development of a national forest programme within the framework of the intergovernmental fora on forests⁷ and the working programme on forest biological diversity (2000) adopted by the Convention on Biological Diversity. According to the pan-European definition (Resolution W1, Vienna, 2003), a National Forest Programme is a “process of policy planning, implementation, monitoring and evaluation at the national and/or sub-national level in order to proceed towards the further improvement of sustainable forest management as defined in Helsinki Resolution H1, and to contribute to sustainable development”.

**Principles for
development**

At the fourth Ministerial Conference on the Protection of Forests in Europe in April 2003 the participating ministers adopted principles for the development of national forest programmes with a particular significance in the European context. These include: broad-based participation, a holistic cross-sectoral approach as well as an iterative process based on long-term commitment. The use of the pan-European criteria and indicators for sustainable forest management provides a framework for the national forest programmes, on the one hand, and is recommended as a tool for the periodic control and monitoring of sustainable forest management, on the other. The Swiss National Forest Programme supports and incorporates these principles.

⁷ Intergovernmental Panel on Forests, 1995, Proposals for action 17a and 17d.

2 Process and Methodology

2.1 Project organization

Project Directorate and Project Management

A Project Directorate comprising Philippe Roch, Director SAEFL, Willy Geiger, Vice Director SAEFL and Werner Schärer, Director of the Swiss Forest Agency was appointed to oversee the project. The Project Management, which was located within the Swiss Forest Agency, was responsible for the operative management of the process and reported to the Project Directorate. The members of the Project Management were Werner Schärer (Head), Claudia Jacobi, Sandra Limacher and Rolf Manser.

130 experts in eight working groups

Approximately 130 experts from science, various political and economic sectors, associations and organizations as well as forest owners worked on six focal areas which were based on the pan-European “Criteria for Sustainable Forest Management” (cf. Chapter 1.3). Eight topics to be dealt with by eight working groups were identified on the basis of these criteria and the findings of the consultation on the DETEC document published in 2000,⁸ thus ensuring that the process was adapted to the Swiss situation. The mandates for the individual working groups were formulated in the form of questions (cf. Annex). The overall Project Team comprised the heads of the working groups and the Project Management.

Swiss NFP Forum – accompaniment and critical appraisal of the process

A 28-member Swiss NFP Forum comprising decision-makers from political, economic, scientific and societal circles (cf. Annex) accompanied the substantive development of the process and provided general political comments on the contributions of the working groups. The Swiss NFP Forum, which created a new platform dialogue among stakeholder groups with an interest in the forest, proved extremely valuable.

Stakeholder analysis as a basis for the selection of the working groups

In terms of expertise and personnel, the constitution of both the Forum and working groups was based on a stakeholder analysis which provided a comprehensive view of the institutions, organizations and specialists associated with the forest and wood sector. The working groups consisted of experts selected on the basis of their areas of specialization. As opposed to this, the Forum represented the different political forces at work in the forest arena; the aim was to facilitate the suitable representation of the various stakeholders, e.g. the different linguistic regions, geographical regions (i.e. Central Plateau and mountain regions), the political parties and the various interests. Particular emphasis was also placed on the involvement of forest owners. However, this proved difficult in practice as the concerns of the numerous small (private) forest owners are not easy to define.

Third-party accompaniment

External, third-party accompaniment (project coaching, organization and facilitating the Forum sessions, editorial services) was provided by BHP – Brugger and Partner AG, Zurich. Communication services were provided by the agencies PR access AG, Bern (to December 2002) and P.K. Peter Kästli & Partner ag für kommunikation,

⁸ Waldpolitik Bund. Schwerpunkte des Eidg. Departementes für Umwelt, Verkehr, Energie und Kommunikation (UVEK), 2001.

Bern (from January 2003). External scientific accompaniment was provided by Professor Willi Zimmermann of the Chair of Forest Policy and Forest Economics at the Swiss Federal Institute of Technology Zurich.

2.2 Project process

Uniform procedure for all working groups

The development of the content of the Swiss NFP by the different working groups (February 2002 to May 2003) was based on a systematic and uniform process. The first task was to identify the problems and issues associated with the individual working-group topics while taking current and foreseeable future developments into account. A long-term vision (2030) was developed on this basis, from which concrete objectives were derived for the year 2015. Strategic directions leading to the objectives were identified and complemented by concrete measures. Federal instruments were defined for the implementation of the individual measures and the funding required for the entire duration of the process estimated. During the final executive phase, an outline was developed for the operative implementation of the programme and the division of roles among the various actors.

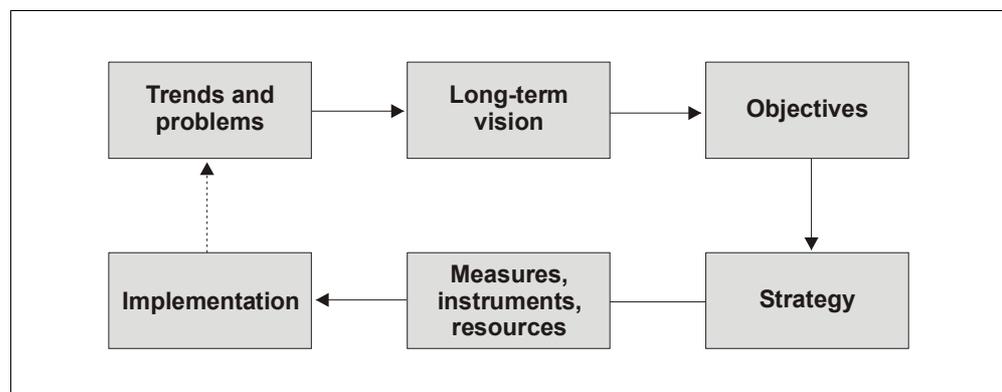


Figure 2-1:
Structure of the policy system

Synthesis of the reports of the working groups

The Swiss NFP is the synthesis of the findings of the eight working groups. The challenge here was not to merely summarize these findings, but to develop a synthesis which would bring the various individual results together and identify priorities among them. This task necessitated intensive debate and discussion. Thus, the findings of the working groups were further developed by the Project Team and Project Management, condensed and presented to the Forum for discussion. The results of the Forum discussion were then transmitted to the working groups and integrated into the remaining work. To this end, the Forum met for a total of six sessions, some of which lasted an entire day. It was also invited to present its findings in writing.

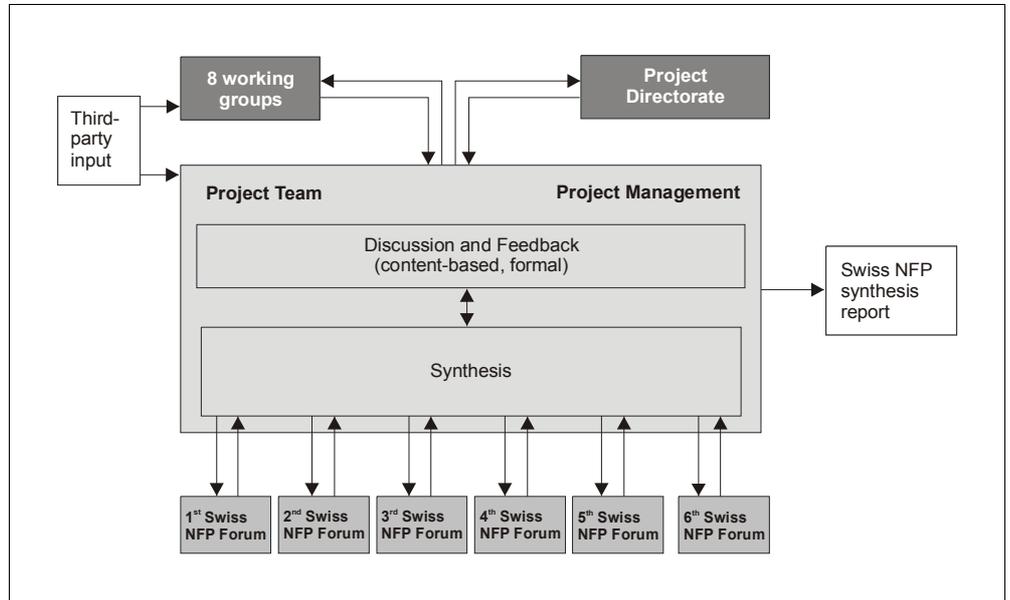


Figure 2-2:
Project process

2.3 Participation and transparency

Extensive use of opportunities for feedback

The Swiss NFP was developed in the context of a participatory and transparent process involving numerous experts and interest groups (cf. Chapter 2.1). The main intermediary findings of the working groups and the Forum were published on the Swiss NFP internet website (www.waldprogramm.ch). The website recorded approximately 340'000 hits by almost 31'000 visitors between March 2002 and November 2003. In addition to the members of the working groups and Forum, interested individuals and organizations were given an opportunity to submit their opinions, suggestions and criticism – the offer was widely availed of. Around 70 written reactions to the content and process were submitted to the Project Management. Various independent position papers were also developed by interest groups in the context of the Swiss NFP process (cf. Annex.)

Dialogue with stakeholder groups

Further to these opportunities to submit feedback, the Project Management invited interested parties to participate in an active dialogue on the Swiss NFP. Throughout 2002 and 2003, the programme was presented and discussed in the course of 35 events staged by various associations and organizations (cf. Annex). This made it possible to reach around 3400 experts and interested parties both within and outside the forest sector. Particularly worthy of mention here are the two forest summits organized by the Swiss Forest Association (Schweizerischer Forstverein/SFV) and the Association of Swiss Foresters (Verband Schweizer Förster/VSF) on October 16, 2002 and May 14, 2003, at which some 550 experts engaged in intensive debate on the Swiss NFP topics. The results of these debates were submitted in writing to the Project Management.

2.4 Integration of findings from other ongoing projects

**effor2, Lothar basic
research programme,
PROFOR ...**

During the development of the Swiss NFP particular attention was paid to compatibility with the various other ongoing SAEFL processes and projects. Thus, the insights from the “Redesign of Fiscal Equalization and Distribution of Tasks” (Neugestaltung des Finanzausgleichs und der Aufgabenteilung/NFA), the effor2 project (new impact-oriented subsidy policy) and the ongoing findings of the Lothar basic research programme (aimed at improving the management of storm damage in the forest) and PROFOR (future-oriented forest education policy) were integrated into the Swiss NFP process. The “Swiss Landscape Concept” (Landschaftskonzept Schweiz), the “Landscape 2020 Strategy” (Strategie Landschaft 2020) and planned revision of the Law on Nature and Landscape Protection (NHG) were also taken into account during the development of the programme’s objectives and measures. Findings from other federal projects such as the State Secretariat for Economic Affairs’s “New Regional Policy” (Neue Regionalpolitik/NRP), the Federal Office for Agriculture’s “Agricultural Policy 2007” (Agrarpolitik 2007) and the Federal Office for Spatial Development’s “Rural Area Network” (Netzwerk ländlicher Raum) were also incorporated into the discussions.

3 Main Trends and Problems

The Swiss NFP reacts to current and foreseeable future problems

Switzerland's existing forest policy has significant strengths (cf. Chapter 1.2)⁹ which are also recognized in the international context.¹⁰ The Swiss NFP can build on this, however, it must also identify the best possible reaction to both current problems and foreseeable future challenges.

The protective function of the forest is not guaranteed

Due to progressive development and the appreciation of land prices in existing development zones, the potential for damage due to natural hazards is increasing. Thus, greater investment in natural hazard avoidance is necessary if the accepted residual risk is to be maintained at the same safety level. The sustainable provision

The native mountain forest protects the residential and commercial areas of over one million Swiss citizens against avalanches, rockfall, debris flows and flooding. In some cases, however, this protective function effect is under threat.

of the services of the protective forest in the mountain region requires stable and well structured stands as well as timely regeneration. This can only be achieved through the targeted maintenance of the protective forest. The second National Forest Inventory (NFI2) of 1999 revealed that the level of damage to forest stands, their stability and/or regeneration indicates that in

many locations the forest is no longer in a position to guarantee protection against avalanches, rockfall, erosion, flooding and debris flows. It was estimated that a backlog of protective forest maintenance exists in around 150'000 ha of the forest that provides direct protection against natural hazards.

Resource potential not fully used

At ten million m³/year, current wood increment represents almost twice the volume of wood harvested and sold (approximately five million m³/year). Switzerland's growing stock is among the largest in Europe. If the current level of use remains the same, there will be a further 10% increase in supply by 2015. A large growing stock means that there is little regeneration, and the growing stock is not equally distributed among the age classes. This can undermine the stability of the forests in the long term and also has a negative effect on biodiversity as the forest cannot provide habitats for light requiring species. In order to reduce this large growing stock in the medium-term, the quantity of wood harvested would need to be increased by around 20% (NFI2). While there is a greater emphasis on ecological factors

At 361m³, Switzerland has one of the highest growing stocks per hectare of central European countries (Germany 271m³, France 116 m³, Finland 86 m³).

when it comes to the selection of the materials used by the construction and energy sectors, at present the demand for wood and wood products is covered to a large extent by imported products. Furthermore, given current conditions and structures, the wood chain of custody can only partly exhaust the enormous potential that exists in terms of the resource wood.

⁹ A summary of key statistics on the Swiss Forest can be found in the Annex.

¹⁰ Cf., for example, European Forest Scorecards 2000, Report, updated January 2000, WWF, by Erik Sollander.

Loss of biodiversity

Biological diversity in Switzerland is highly dependent on the quality of the forests. The forest is of crucial importance for biodiversity because it is one of the last remaining near-natural areas in Switzerland. Although the forest covers only 31%

8% of forest plants are classified as highly endangered. This figure increases to up to 40% in the Central Plateau region. Of the 101 bird species native to the Swiss forest, 24 are endangered. Natural forest reserves account for 1.1% of Switzerland's total forest area.

of the total territory of Switzerland, it provides a home for almost half of all of the country's animal and plant life. Since the coming into force of the Federal Law on Forests in 1993, biodiversity has been promoted to a far greater extent than was previously the case and some progress has, therefore, been made. However, some forests lack the range of habitats necessary

for the long-term conservation of the diversity of species and breeds. Interrupted succession cycles, mono-cultures and fragmented habitats lead to the loss of ecological niches and the habitats of many animal and plant species that inhabit the forest.

Climate change also represents a threat to the forest

The forest is at risk from various threats arising from the emerging climate change. Evidence of this is provided by the increasing number of extreme weather events in recent years, such as Storm Vivian in 1990, the avalanche winter of 1998/1999, Storm Lothar and the floods of 1999, and the drought of 2003. The possible consequences include greater damage to the forest and the deterioration of its protective function. Although the public acknowledges the existence of climate change, little political will exists to bring about the necessary long-term and sustainable investment in preventive measures.

Increase and decrease in forest area

According to the Swiss National Forest inventory, forest area in Switzerland increased by around 4% or 47'600 ha over the past decade.¹¹ This corresponds to the total forest area of the canton of Zurich or Aargau. The regions differ significantly in this regard: Central Plateau +0.5%, Jura +1.6%, Pre-Alps +2.6%, Southern Alps +5.6% and Alps +7.6%. Thus, forest area is mainly increasing in the mountain regions due to the abandonment of the agricultural use of the low-yielding land there. The ongoing increase in forest area makes the landscape more monotonous and this reduces its recreational value. Furthermore, the increase in forest area can lead to the loss of species-rich biotopes which need open light-filled spaces. As opposed to this, settlement pressure and infrastructure development are causing a sporadic decline in forest area in the Central Plateau.

Switzerland's forest area represents one third of the country's total territory. It is increasing at an annual rate of 0.4%. 73% of the forest is publicly owned (cantons, political municipalities, civic municipalities, corporations and cooperatives), 27% is in the hand of private owners.

The forest and drinking water are at risk from pollution

The forest filters atmospheric pollutants from the air. These impair the vitality of the trees and lead to soil acidification. This makes the forest more vulnerable to stress and the quality of the water that seeps through the forest soil is also at risk. The best drinking water comes from the forest. Around 40% of the water in Swiss

¹¹ Estimation based on a comparison of NFI 1 and NFI 2.

taps (400 million m³ per year) comes from forest areas and, as a pure natural product, it can be piped directly into the supply network without any need for treatment. Thus, after wood, drinking water is the most important economic good produced by the forest. However, the pressure for rationalization in the forest sector could result in forests no longer being managed in a way that is conducive to the production of high-quality drinking water.

Forest damage impairs forest services

Climate warming promotes the introduction to the forest of new potentially harmful invasive alien species and the mass reproduction of existing ones. This is set to become a key topic also for the future of the Swiss forest. Problems arise when there is a threat to the services that society expects the forest to provide. Given the changing requirements of forest services and reduction in the available public funding, the strategy for dealing with forest damage needs to be revised.

Game damage as a threat to forest regeneration

A large growing stock and lack of light on the ground mean that the space available to game for grazing is insufficient in some areas. Furthermore, the habitats that provide food and cover for wildlife are not sufficiently interconnected. The process for regulating game populations through hunting is not dynamic enough and this activity is inadequately co-ordinated with the forest sector's local forest regeneration targets. As a result of all of these factors, natural forest regeneration is no longer guaranteed in some locations.

Increasing demand for recreation and leisure services

The Swiss population is very fond of its forest and is making more and more use of it as a recreational and leisure area. The forest makes an important contribution to public health and is also a key element of Swiss cultural identity. This significance is set to increase further with the growth in urbanization. Forests that are already accessible are being visited more frequently and even those that were not previously used are now being visited. The possible consequences of this development include a decline in species variety, damage to forest stands, herb layer and the soil itself as well as a reduction in yields or additional costs in the area of wood production. Moreover, forest owners will intensify their demands for remuneration for the services they provide and compensation for any resulting loss of income.

96% of the Swiss population visits the forest in summer, (87% in winter), 58% several times per week (39% in winter).

Forest companies running a deficit

Switzerland's forest companies are operating at a loss. Given current prices on world markets and the existing processes and forms of organization in the sector, it is hardly – if at all – possible to harvest wood in a way that covers the costs. The overall balance sheet lacks clarity because the private commercial services (wood production) are mixed with the other services provided for the common good. The forest operations show too little entrepreneurial initiative and the current subsidy mechanism does not give them any incentive to carry out the necessary adaptations.

Falling wood prices, rising costs, declining interest among forest owners

Forest owners and managers are faced with increasingly complex demands and requirements. A wider variety of tasks has to be carried out simultaneously and at a lower cost. While previously, the profits from wood production covered the cost of

Overall, Switzerland's public forest operations have been running a deficit since 1990. This deficit is constantly increasing and in 2002 the deficit associated with wood production reached the record level of CHF 40 per m³ of salvage logged wood.

providing the other services, today the gap between operating costs and the yields associated with wood sales is growing: falling prices now go hand in hand with rising costs. As a result, forest owners are losing interest in their forests. This puts many of the other socially desirable forest

services at risk as these necessitate the management of the forest and thus the active involvement of the forest owners. At the same time it is becoming increasingly difficult to motivate disinterested forest owners to become involved in the formulation and implementation of new forest policy strategies. This represents a particular challenge for future forest policy.

A small-scale forest and wood sector

The forest sector, which is characterized by very small-scale ownership and management structures has failed to react adequately to the changes occurring in its environment. The subsidy policy implemented up to now, adherence to tradition and lack of entrepreneurial initiative have made it difficult to achieve far-reaching changes in the sector. The efficient supply and processing of wood is further hindered by the numerous small-scale operations and structures along the wood chain.

Increasing international competition

Further structural adaptation is also a matter of urgency in view of the competitive international environment (competition in the EU area, EU expansion, low-price competition). Due to its cost structure, the Swiss forest and wood sector faces a particular challenge in developing market niches.

Less room for manoeuvre in the area of public finances

The Swiss Confederation's Budgetary Relief Programme 2003 (Entlastungsprogramm 2003), plans to reduce federal subsidies for the forest by around CHF 42 million from 2006. This corresponds to a good quarter of the federal funding currently provided for the forest. This shows that the state's willingness to pay for the important services provided by the forest for society is declining. There

Federal subsidies for the forest between 1995 and 1999 totalled around CHF 125 million/year. A further CHF 50 million was added for protective structures and systems. Federal spending on the clean-up of the damage caused by Storm Lothar in 1999 resulted in a dramatic rise in subsidies (CHF 210 million plus CHF 58 million for protective structures).

is less room for manoeuvre in the area of public finances and policy priorities are shifting to the disadvantage of the forest. It is foreseeable that only services of particular public benefit and interest will be paid for in future.

Forest education and training needs to be adapted

Forest education and training must keep pace with the rapid changes under way. However, the forest education system has not adapted to the changing environment in all areas. In particular, there is too little cooperation between the different areas within the forest education sector (lack of interdisciplinarity).

Knowledge and implementation deficits

Furthermore, knowledge and research deficits exist with respect to the causes of the changes occurring, the effects of pollution and resilience of the forest ecosystem and with respect to the effect of the measures implemented. This makes it more difficult to control and monitor the effects of forest policy measures. The research on current problems and the efforts being made in the area of knowledge transfer do not adequately meet the requirements of practitioners.

Forest policy is too sectoral

By virtue of its protective role, in the past, forest policy was closely related to water management and to agriculture and hunting on account of the joint use of the forest by these activities. Today, many more interests come into play and it must accommodate numerous other requirements and outlooks. Forest policy has become more complicated and while it is influenced by numerous other economic sectors and interest groups, it too affects other areas. Up to now, forest policy has not asserted its interests sufficiently in the context of other sectoral policies and economic sectors. Its central challenge for the future consists in identifying the interfaces with other public and private actors and using them to the benefit of its own objectives.

Information and communication deficits

The forest enjoys a positive image in society and this should represent a potential advantage for its future. At the same time, however, there is a lack of awareness of the fact that the various services provided by the forest are not automatic. Information deficits among the population about ecological interdependencies, the use of wood and its importance in terms of sustainable development result in a lack of acceptance of certain measures and the abandonment of others. Much work also remains to be done in the area of communication within the forest and wood sector. The dialogue between the different stakeholder groups represents an important prerequisite for cross-sectoral activity and the implementation of forest policy as a joint task involving the Confederation, Cantons and municipalities.

The forest legislation needs to be adapted

The forest legislation in force and its implementation cannot deal adequately with the current and future problems facing the forest

Along with these general challenges, specific issues relating to certain topics played a key role in the development of the Swiss NFP. These are presented in the Annex.

4 Vision and Objectives

4.1 Main objective

Sustainable forest management

The main objective of the Swiss NFP is to guarantee the sustainable forest management¹² and, as a precondition to this, to create favourable framework conditions for an efficient and innovative forest and wood sector.

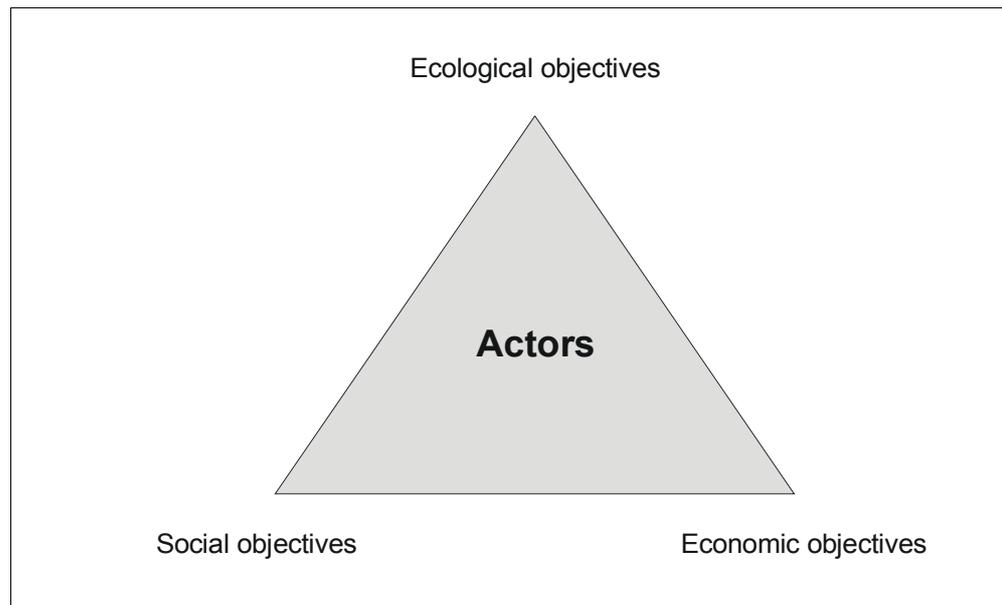


Abb. 4-1:
The three dimensions of sustainable forest management

The Swiss NFP optimizes ecological, economic and social values

With its vision (2030), concrete objectives (2015) and the corresponding strategic directions and measures, the Swiss NFP aims to optimize the three dimensions of sustainability and to improve the economic and social values of the forest as compared with the relatively high ecological value it already enjoys today.¹³ The successful elements of existing Swiss forest policy will continue to be implemented, others will be improved and new ones added. Thus, the changes in the environment of the forest and wood sector, the new challenges and the slow growth of the forest ecosystem will be taken into account.

¹² Cf. definition in Chapter 1.3 whereby forest management can also incorporate the decision not to manage a forest.

¹³ The Swiss NFP contains guidelines for all three dimensions: c.f. the ecological standard (cf. Chapter 4.3.2) as well as the social and economic principles (in the Annex).

4.2 Vision

Significance of the forest	<i>Preamble: At 31% of the country's territory, the Swiss forest plays a vital role as a habitat for fauna and flora and as a source of the renewable resource wood. It is a part of our landscape and plays a key role in terms of climate, drinking water, risk minimization – in particular with respect to protection against natural hazards – and biological diversity. The forest contributes to our well-being, safety and the generation of economic wealth.</i>
Sustainability	<i>Swiss forest policy is committed to sustainability in accordance with the various international agreements and in this way it creates added economic, social and ecological value.</i>
Priority services and the ecological standard	<i>I Overall, the Swiss forest provides the following services on an equal basis: forest area and landscape management, protection of natural resources, wood and other forest products, species diversity and habitats, protection against natural hazards as well as recreation and leisure. The services for the common good identified as a priority by the Confederation are adequately guaranteed. Ecological sustainability is ensured throughout the country by means of a recognized ecological standard.</i>
Forest area	<i>II In terms of its current size and distribution, the forest is largely well preserved and optimally interconnected in the landscape.</i>
Value-added wood chain	<i>III Wood features prominently in Swiss architecture and lifestyles. The value-added chain from the tree to the end product is internationally competitive and capable of meeting the growing demand for wood from Swiss forests. Favourable conditions exist for the competitive use and processing of wood and for the creation and maintenance of a healthy wood market.</i>
Financing public and cooperative services	<i>IV The forest services expected by the public, which are associated with special costs for the forest sector, are remunerated on the basis of a transparent and effective financial model. Minimum criteria ensure the efficient use of public money.</i>
Forest policy as a joint task	<i>V Forest policy is the joint task of the Confederation, cantons and municipalities. Its objectives are achieved through collaboration with forest owners, dialogue with interest groups and the availability of a high level of expertise in the forest and wood sector. Transboundary problems are addressed through Switzerland's active involvement in international forest and related fora.</i>

4.3 Twelve objectives, five priorities

Concentration of federal resources on the priority objectives

Based on current and foreseeable future problems, twelve objectives have been identified whose comprehensive implementation by 2015 represents an important milestone towards the long-term fulfilment of the Swiss NFP. Given that the Confederation wishes to implement the principle of subsidiarity consistently and the financial resources available to it are limited, it will concentrate its main resources on priority objectives. However, its involvement is not limited to the provision of financial support; it also provides regulatory and persuasive instruments. By setting priorities, the Confederation aims to achieve significant results in a few central fields of action as opposed to minor achievements in a large number of areas. Lower-priority objectives will also be pursued, however fewer resources will be made available for them (cf. Chapter 4.4).

The priorities may change

As far as the Confederation is concerned the priority objectives are those of major national significance that require extensive action and can only be achieved if the Confederation itself takes charge while, of course, observing the principle of subsidiarity. The list of priorities may change as a result of new developments in the environment, economy and society or the political re-assessment of ongoing developments. The prioritization of the objectives is based on the normal situation with respect to forest policy, i.e. the situation changes in the case of natural disasters (cf. Chapter 6.6). The prioritization is based on a Swiss national perspective and is applicable at the level of the Confederation. Further priorities may arise at cantonal or regional level.

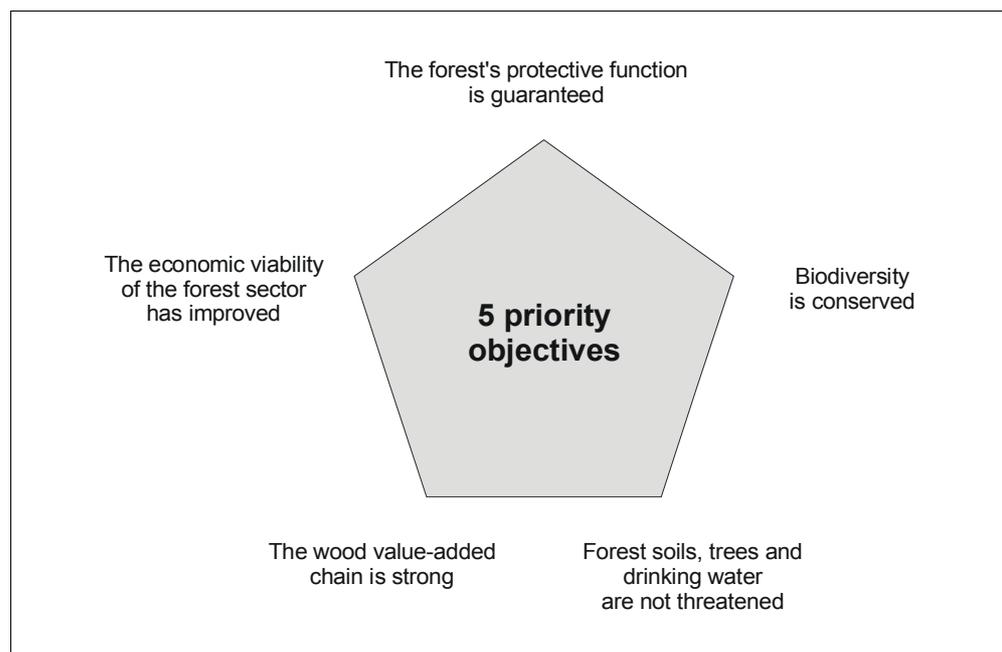


Figure 4-2:
Five priority objectives

4.3.1 The forest's protective function is guaranteed

Challenge

The protective forest protects not only directly underlying roads, railway lines and buildings, its effect extends beyond its local environment to entire regions and sometimes even the entire country (for example, when transport and communication channels are disrupted). The maintenance of the protective forests is far less expensive than the construction of protective structures. However, for various reasons the protective effect of Switzerland's protective forest is now under threat (maintenance deficits, insufficient regeneration). The protection of the population is a public service provided by the forest sector that serves the national interest and requires the special intervention of the Confederation in collaboration with the cantons.

Objective

The services of the forest in protecting the population and infrastructure (settlements, railways, roads etc.) are guaranteed sustainably and consistently throughout Switzerland.

Indicators and targets for 2015

Indicator	Target
Scale of the damage caused to transport axes and settlements.	As little damage as possible, no loss of life.
Number of interrupted highways.	(Further clarification is required in order to define the indicator and target status.)
Increase in protective forest area without maintenance/management deficits.	100% of forest area with a special protective function has no maintenance deficit.
Increase in forest areas with adequately ensured regeneration of tree species essential to the maintenance of the forest's protective effect (NAIS*).	60% of forest area with special protective function.
Level of awareness among the population of the protective function of the protective forest.	80% of the population in the mountain region and 40% of the population in the Central Plateau region.
Number of regional centres for ensuring integrated natural hazard risk management focused on watersheds.	(Further clarification is required in order to define the indicator and target status.)
Cost per ha of protective forest management.	Reduction of 15% as compared with 2003.

* NAIS: Nachhaltigkeit im Schutzwald, i.e. Sustainability in the Protective forest

4.3.2 Biodiversity is conserved

Challenge

Biological diversity in Switzerland is highly dependent on the quality of the forests. However, the forest also lacks the diversity of habitats that is essential for the long-term conservation of species diversity. The initiative for the promotion of biodiversity in the forest cannot come from the cantons alone. This is a task that lies beyond the institutional limits of the cantons; its resolution requires coordination by the Confederation.

Objective

The plants and animals that live in the forest as well as the forest as an ecosystem are conserved. Species that are naturally common in Switzerland remain common, species that have become rare become more common again, and there is an increase in ecologically valuable tree species. The forest is allowed to develop naturally within a representative area (strictly protected forest areas, islands of old growth, dead wood).

Indicators and targets for 2015

Indicator	Target
Population development of species that were previously more common.	50% of species that have become rare become more common again; there is no further decline in the other 50%.
Number of Red List species (according to the Red List published by SAEFL, based on IUCN criteria *).	10% reduction in the number of red-listed species as compared with previous Red-Lists.
Number of stems and planting of priority species.	In compliance with specific programmes for the core areas.
Number, size and representativity of forests with special interventions (managed protected forest areas, genetic reserves) to promote biodiversity.	In compliance with special programmes for the conservation or promotion of species, genetic traits and special management forms.
Proportion of natural regeneration in the regeneration area.	Increase in all regions.
Proportion of the standing dead wood (snags) in the growing stock.	At least 1.5% per km ² in the Central Plateau, 2% in the Jura and Pre-Alps and 5% in the Alps.
Total area of protected forest areas; currently 22'000 ha (of which half are strictly protected forest areas).	70'000 ha.
Number and distribution of large strictly protected forest areas.	At least 15 strictly protected forest areas >500 ha, distributed proportionally among the major regions (or natural parks with corresponding forest areas).
Species promotion programmes implemented.	For at least 2/3 of the priority species.

* IUCN: International Union for Conservation of Nature and Natural Resources

4.3.3 Forest soils, trees and drinking water are not threatened

Challenge

The forest filters pollutants from air which impair the vitality of the trees and cause acidification of the soil. This makes the forest vulnerable to stress and threatens the quality of the water that seeps through the forest soil. In future, the pressure for rationalization in the forest sector could result in forests no longer being managed in a way that protects drinking water. The input of contaminating substances is subject to national and international regulations. Thus, the protection of soil and drinking water is essentially a national task.

Objective

Forest soils, trees and drinking water are not at risk from the input of contaminating substances, inadequate management and the corresponding physical effects.

Indicators and targets for 2015

Indicator	Target status
Nitrogen deposition	max. 20 kg N/ha per year
Soil acidification: (critical parameter for BC/Al [*] , pH and base saturation).	Based on regional assessment, 20% of areas with exceeding critical values show an improvement in the main root area as compared with 2000. Significant improvement on LTFER** and permanent cantonal monitoring areas.
Exceeding of critical level for ozone	minus 20% as compared with 2000.
Soil compaction parameters.	(Further clarification is required in order to define the indicator and target status.)

* BC/Al: ratio of basic cations (calcium, magnesium, potassium) to aluminium in the soil solution

**LTFER: Long-Term Forest Ecosystem Research Plot

4.3.4 The wood value-added chain is strong

Challenge

Switzerland has one of the largest growing stocks in Europe because, for decades now, the volume of wood growing in the forest exceeds that being used. The main reasons for this are the poor competitive performance of the forest and wood sector and, the extremely weak demand in particular for Swiss wood. The structure of the wood value-added chain with its numerous small-scale companies and operations represents an additional obstacle to the efficient production and processing of wood. The use of the renewable resource wood improves Switzerland's CO₂ balance (through the storage of carbon in wood structures and the use of wood as a substitute for fossil fuels and non-renewable materials), creates employment in remote locations, contributes to the protection of the environment within the regional economic cycles and generates synergistic effects with biodiversity promotion policy. Thus, it is in the national interest to increase the use of wood through the creation of a competitive wood sector. The Confederation must assume greater responsibility in cooperation with the economic sector; it should establish more favourable framework conditions for economic activity and provide suitable temporary incentives to accompany the structural change in the forest and wood sector.

Objective

The increased demand for wood and wood products in all application areas leads to increased added value and a better CO₂ balance for Switzerland. The contribution of wood to the improvement in the CO₂ balance is rewarded through economic incentives. The companies involved in the wood chain are more productive, innovative and thus more competitive.

Indicators and targets for 2015

Indicator	Target
Use of Swiss wood.	50% increase as compared with 1996 (Planconsult survey). Proportion of Swiss wood remains constant.
Quantity of energy produced from wood, use of pellets and other "new fuels" based on wood (to be defined).	100% increase as compared with 2000.
CO ₂ stored in Swiss wood products.	15% increase as compared with 2000.
Quantity of wood processed in existing or new installations (sawn wood, wood derivatives, pulp, paper).	Stemwood: 7 million m ³ . Industrial wood: 3 million m ³ . (Forest wood: 1.1 million m ³ .)
Manufacture of ¾-finished products (new wood materials, high-performance materials and system solutions, proportion of hardwood products).	Over 25% increase as compared with 2000, over 50% for hardwood products.
Difference between exports and imports based on product categories.	Difference per product category = 0.
Production and export quantities of products manufactured and patented in Switzerland.	20% in excess of the volume of ¾-finished products manufactured.
Research capacity.	25% increase in both personnel and funding as compared with 2000.

4.3.5 The economic viability of the forest sector has improved

Challenge

The forest sector is being forced to implement severe structural changes due to cost pressure arising from the decrease in public funding and the fall in wood prices. Up to now the forest sector, which is characterized by very small-scale ownership and management structures, has reacted inadequately to these changes in its environment. The adherence to tradition, the lack of entrepreneurial initiative and corresponding incentives have made it difficult to implement the necessary changes. However, viable forest operations are essential to the provision of numerous socially desirable forest services and for the sector's survival on the wood market. The Confederation must, therefore, assume greater responsibility in cooperation with the cantons with regard to this structural change.

Objective

The optimization of the distribution of tasks and structures in the forest sector leads to greater efficiency. This results in the improvement of the economic viability of forest operations.

Indicators and targets for 2015

Indicator	Target
Overall outcome per forest operation.	90% of forest operations report a profit.
Result per m ³ of raw wood.	Profit per m ³ raw wood.
Wood harvesting costs per m ³ .	Wood harvesting costs similar to those in neighbouring countries.
Contribution of the forest sector to gross national product.	Increase.
Reduction of average costs per m ³ of raw wood.	Rate of return equal to federal bonds.
Wood yield (m ³) and wood sales volume (m ³).	20% increase in volume of wood harvested (up to 6 million m ³) by 2007 and by 50% (up to 7 million m ³) by 2015 as compared with 1999 (4.7 million m ³).

4.4 Other objectives

Important but lower priority objectives

The other objectives formulated on the basis of the problem analysis are also important for the Confederation but are currently classified as lower priority objectives because

- based on the principle of subsidiarity, they are the responsibility of the cantons, municipalities or forest owners;
- or, despite being the main responsibility of the Confederation, based on the current and estimated future urgency of the problem in question, they are seen as relatively less pressing.

Thus, the Confederation will pursue the following objectives, but less funding and other instruments will be made available for them.

Conservation of forest area/forest as CO₂ sink

The existing spatial distribution of the forest will be conserved and there will be no reduction in forest area. The service provided by the forest in terms of the CO₂ balance will be recognized in terms of compliance with the Kyoto Protocol.

The ban on clearing will be maintained. However, the catalogue of criteria for exceptional authorizations will be extended in accordance with an integrated spatial development policy that focuses on the overall use and conservation of the landscape and hence goes beyond the strictly sectoral perspective. SAEFL supports the recognition of the forest's services with respect to CO₂ in terms of compliance with Kyoto Protocol.

Landscape diversity

The forest makes contributes significantly to the conservation of landscape diversity.

To this end, the increase in forest area will be managed in accordance with spatial development objectives. Traditional valuable management forms that promote landscape diversity will also be promoted.

Interconnected forests/forest edges

The forests are interconnected and dovetailed with the grassland by means of ecologically improved forest edges.

The synergies with agricultural policy and other spatially-relevant policy areas are exploited here. The territorial redistribution of small forest areas is also facilitated in the public interest.

Potentially harmful organisms

The forest is protected against the introduction of potentially harmful organisms. Damage by such organisms will not exceed an acceptable level in view of the provision of forest services.

The introduction of potentially harmful organisms into the forest should be prevented and their presence controlled where necessary. Forest damage will be prevented with the help of preventive measures. This necessitates near-natural site-adapted forests that are rich in terms of structure and species and well adapted to their locations. Eventual financial support for the control of potentially damaging organisms will be based on uniform criteria recognized by both the Confederation and cantons.

Forest and game

The forest provides adequate and quiet living space for game. The game stocks are adapted to their habitats and have a natural age and sex distribution. Natural forest regeneration is not hindered by ungulates.

Game will be managed at supra-regional level. The natural regeneration of forests will be guaranteed thanks to the adaptation of hunting practices to game, game-friendly forest management and the careful management of open spaces near the forest.

Recreation and leisure *Recreational and leisure activities in the forest are controlled to promote the conservation of the forest. Forests near urban agglomerations are managed with the priority service of recreation and leisure in mind and this reduces the burden on other forest areas.*

Recreational and leisure services are primarily the responsibility of the cantons and municipalities. The Confederation can only support the fulfilment of this objective through communication and exchange of information (cf. Chapter 5.8). The Confederation will also develop an improved basis for the economic enhancement of recreational and leisure activities.

Education, research and development *The forest education system guarantees high-quality expert and management competencies for the activities carried out in and on behalf of the forest. Research develops scientific bases and target-oriented methods for the resolution of problems.*

The forest education system must be adapted to the new challenges; this is essential to the success of the desired innovations. The improvement of knowledge transfer, strengthening of commercial and business skills and provision of the competencies required in the context of integrative approaches and cooperation are of particular importance here.

Other objectives Other objectives can be defined on the basis of the problem analysis. This applies in particular to the areas of communication and cross-sectoral cooperation which were inadequately developed in the past. These are cross-sectional tasks to be carried out as part of the fulfilment of the above-formulated objectives. They will be addressed in the discussion of strategy and measures (cf. Chapter 5.7, 5.8).

4.5 Conflicts between objectives

Protection objectives vs. utilization objectives In view of the wide-ranging demands on and requirements of the forest, potential conflicts between the individual objectives are unavoidable, in particular between the “protection” and “utilization” objectives. Tensions exist between ecological and economic objectives that aim to promote the use of wood and greater economic viability of forest operations. The conflict arises from the fact that ecological objectives often involve restrictions or obligations for the forest sector while the economic objective can, in turn, threaten the fulfilment of the ecological objectives

Solutions proposed by the Swiss NFP The Swiss NFP aims to contribute to the balancing of interests in forest policy through the following approaches:

- indemnification of the public services “protective forest” and “biodiversity” by means of programme and service agreements;
- introduction of a uniform ecological standard for all managed forest areas;
- abandonment of the excessively rigid implementation of the principle of multifunctionality in small areas;

- re-examination and optimization of economic framework conditions with a view to their effect on the fulfilment of the defined objectives;
- establishment of communication platforms for the creation of transparency and mutual awareness between stakeholder groups.

These approaches are further defined and concretized in the strategic orientations and measures (cf. Chapter 5).

5 Strategic Directions and Measures

5.1 Overview

Strategic directions for the fulfilment of the defined objectives

With the help of the following strategic directions and measures, the Swiss Confederation aims to achieve its five priority objectives and to create a basis for the fulfilment of the other defined objectives. The measures to be implemented are associated with the relevant strategic directions.¹⁴

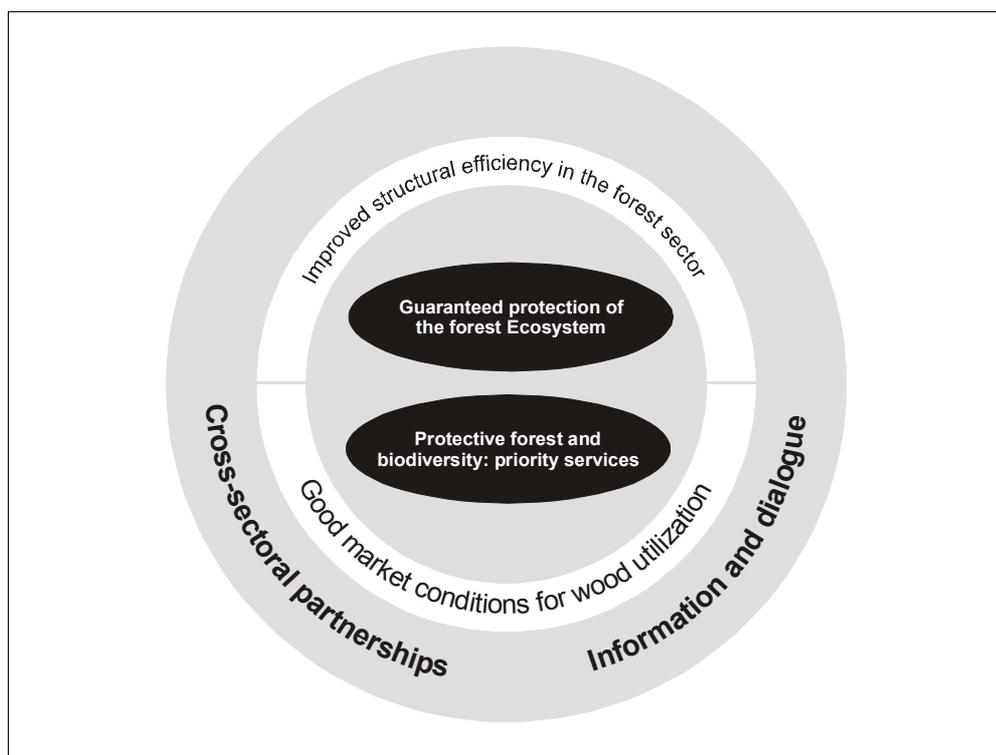


Figure 5-1:
Overview of strategic directions

5.2 Protective forest and biodiversity: priority services

Multi-functionality and priority service

The forest provides a number of equally important services, thus it is fundamentally multifunctional. This principle will continue to apply. However, it will no longer apply down to the smallest area as, given the many demands placed on the forest, forest management is overstretched. In order to guarantee the priority services biodiversity and the protective forest (cf. Chapter 4.3), the Swiss NFP proposes that priority services be defined at planning level. This means that, in addition to other services, the forest will primarily fulfil the task of protection and maintaining biodiversity in defined areas. Thus, it will be clear to forest owners which public

¹⁴ It is expected that the main measures will make a significant contribution to the achievement of the objectives. The definition of these measures is based on the views expressed at the Swiss NFP Forum, by the Project Team and Project Directorate. A systematic presentation of all measures can be found in the thematic overview in the Annex.

services they are required to provide in the national interest and the precise areas involved. Indemnities will be paid for these services. This means that the areas which they are largely free to manage as they chose will also be clear. The implicit outcome of this is that the public services provided by the forest will be separated from wood production as a private-sector service.

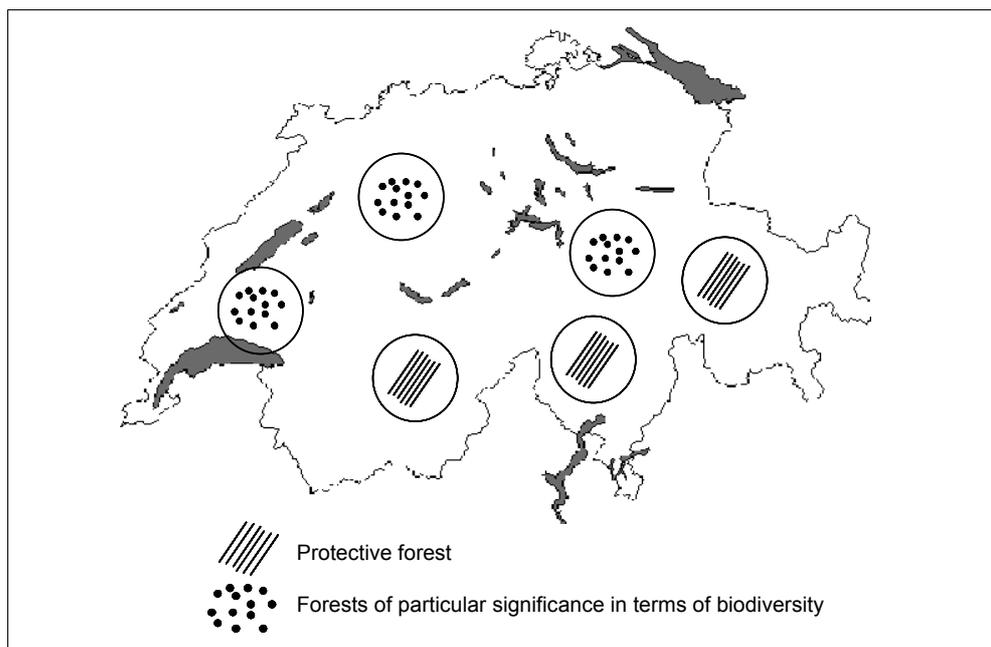


Figure 5-2:
Protective forest and biodiversity as priority services (schematic representation)

Explanation: The forest provides multifunctional services throughout the country. Areas in which the priority services “protective forest” and “biodiversity” are to be provided are defined during planning. These services are “purchased” by the Confederation by means of programme agreements.

Cross-subsidies to be avoided if possible

The definition of priority services means that public subsidy policy will be more transparent in the future. Up to now, the various public services provided by the forest (e.g. recreational functions) have been cross-financed by wood production and this has been a major factor behind the deficit in the wood sector. Such cross-subsidies should be avoided for the most part in the future.

Programme and service agreements

In order to achieve the priority objectives in relation to the protective forest and biodiversity, the Confederation will conclude programme agreements with the cantons which will be valid for a number of years. The agreements will incorporate the payments granted for the prevention and control of infestation by potentially harmful organisms (e.g. the bark beetle) and for the infrastructure required to provide the defined services. It will then be the task of the cantons to implement the objectives defined in the agreements by concluding service agreements with the forest owners. These service agreements will similarly regulate the payments to be made to cover the additional costs arising from the services provided by forest owners in the public interest.

National concepts as the strategic basis, definition of priority areas with the cantons

The definition of the forest areas to provide the priority services is based on “national concepts” to be developed jointly by the Confederation and the cantons. In order to ensure coherence at the planning level, the Confederation will define clear substantive criteria in relation to both the protective forest and biodiversity. The ultimate definition of the priority areas will be carried out in cooperation with the cantons which will also be able to define other priority services beyond those identified by the Confederation.

The Confederation’s planning requirements

Planning is only mandatory in those areas in which the public services of the protective forest and biodiversity are to be provided in accordance with the overall planning definitions. The choice of planning instruments is left to the cantons. However, the Confederation recommends that the cantons adopt the forest development plan and will provide them with a model for this purpose. Minimum qualitative requirements are also prescribed for the planning process including, for example, requirements relating to participation (i.e. involvement of the general public) and the supra-operational level.

Measure	Responsible actor	Cooperation partners
1. Definition of the priority services “protective forest” and “biodiversity” and their indemnification during planning (instrument: programme agreement in accordance with the NFA).	SAEFL and cantons, municipalities	Forest owners, (environmental) associations, specialist institutions
2. Promotion of region-specific programmes for the ecological improvement of forest edges, for creation of quiet zones for fauna in areas of high ecological value, to increase quantities of dead wood, interconnection of habitats, definition of protected forest areas and for the continued practise of traditional forms of management.	SAEFL, FOAG, cantons (implementation)	Municipalities, forest owners, forest operations, environmental organizations
3. Guaranteeing of a minimum level of protective forest maintenance and rectification of maintenance deficits as part of a national protective forest programme.	SAEFL and cantons	Forest owners, forest operations, forest companies, beneficiaries of services (Swiss Federal Railway, highways), FOWG, FOAG, OSD
4. Pilot projects and creation of incentives for new structures based on integrated natural hazard risk management (business structures, centres of competency, innovative organizational models).	SAEFL and cantons	OSD, FOWG, FOAG, seco, PLANAT (Platform for Natural Hazards/Plattform für Naturgefahren)

5.3 Guaranteed protection of the forest ecosystem

Ecological standard	Rules must be defined to ensure that ecological sustainability is not threatened by forest management practices, in particular in the context of wood production. The concept of “close-to-nature forest management”, which is enshrined in the legislation currently in force, is unclear in practice and leaves much scope for interpretation. It is intended to overcome this uncertainty through the binding definition of a concrete ecological standard which presents transparently the operative freedom available to the forest owners and managers while avoiding long-term ecological damage. The standard does not redefine “near-natural silviculture”; it merely sets minimum requirements that must be complied with.
Area of application	The ecological standard is applicable to all managed forest areas. Its application is not subject to indemnification.
Binding force	The standard is enshrined in the legislation.
Preconditions	The Confederation provides the corresponding general framework conditions and support, in particular in relation to the provision of site classification maps and implementation aids.
Control, sanctions	Compliance control is carried out by the cantons in the form of periodic audits. The Confederation welcomes certification on the part of forest owners (FSC and Q labels) as this alleviates the control function. In this case, however, the state must maintain control over the certifying body. Penalty provision for failure to implement the ecological standard is to be included in the forest legislation.

Table 5-3: Ecological standard

Criterion	Indicators	Targets
A Regeneration	A1 Size of cleared areas.	<ul style="list-style-type: none"> • Consideration of the forest type as well as of the forest and landscape function, however maximum 2 ha if there is no existing regeneration.
	A2 Origin and quality of the reproductive material used in plantations.	<ul style="list-style-type: none"> • Controlled origin based on OECD standards. • Ecological suitability in terms of the planned location. • No use of genetically modified material.
B Mix of tree species	B1 Selection of tree species for plantations and subsequent maintenance. B2 Selection of tree species during maintenance intervention and thinning.	<ul style="list-style-type: none"> • Ecologically sustainable mix of species in compliance with the cantonal site classification maps* and the corresponding silvicultural recommendations for the economic use of the forest (<i>target types of stand composition</i>**).
C Soil and environmental protection	C1 Nature and scope of physical damage to the soil (particularly during logging). C2 Volumes of substances used that are harmful to the environment (e.g. pesticides, fertilizers).	<ul style="list-style-type: none"> • Avoidance of soil compaction and erosion in accordance with Art. 6 VBBo. • Substances that are harmful to the environment only to be used in exceptional cases in accordance with Art. 46 StoV.

* With the support of the Confederation, the cantons provide a site classification map to facilitate the planning and control of this requirement.

** Target types of stand composition include ecologically related forest types with similar location characteristics and ranges of tree species. The recommended targets concern the range, proportions and mixes of the tree species.

The following measure is formulated on this basis:

Measure	Responsible actor	Cooperation partners
5. Legislative definition and implementation of an ecological standard for forest management.	Confederation	Cantons, forest owners, forest managers

Large-scale species and genetic conservation programmes

In the case of priority species whose conservation cannot be sufficiently guaranteed through the protection of habitats, it is planned to establish species and genetic conservation programmes based on a system of process monitoring. These programmes will be implemented on a large scale, i.e. above and beyond the biodiversity priority areas, (e.g. existing “capercaillie programme”) and their implementation will be subject to indemnification.

Measure	Responsible actor	Cooperation partners
6. Development and implementation of specific promotion and genetic conservation programmes for priority species (including identification of priority species).	SAEFL and cantons	Forest services, forest owners, scientific institutes, universities, nature conservation organizations

Clean air

The deposition of substances from the air, in particular nitrogen, causes increased eutrophication and acidification. The concentration of air pollutants and harmful substances in the forest will be reduced effectively through preventive measures.

Measure	Responsible actor	Cooperation partners
7. Identification of the extent of damage caused by airborne pollution and its impact on the forest. Efforts to reduce the level of contamination in excessive cases.	SAEFL, WSL, other federal offices, cantons, municipalities (implementation)	Research institutions such as WSL, interest groups, consultancies, cantons, municipalities and private sector actors

Special management of sensitive soils

Some soils are very sensitive by nature or are so severely affected by the deposition of substances that compliance with the ecological standard for ecological sustainability is not enough. Special management measures are necessary to prevent any further deterioration in the quality of these soils. Insufficient information is currently available about the occurrences of such soils and possible measures for their protection. Thus, as an initial step, sensitive and polluted locations will be identified and, where the relevant knowledge is already available, specially adapted forest stands promoted.

Measure	Responsible actor	Cooperation partners
8. Identification of sensitive and polluted locations and provision of bases and target agreements for the special management of sensitive and polluted locations.	SAEFL, cantons, municipalities, forest owners, forest operations	WSL, forest owners, forest operations, private sector
9. Identification of soil compaction and, where necessary, measures to improve compacted soils.	SAEFL with cantons, municipalities (in accordance with VBBö)	WSL, forest owners, forest operations, forest companies

5.4 Improved structural efficiency in the forest sector

Central role of forest owners and the forest sector

The Confederation would like the forest sector to function efficiently as the sector makes a key contribution to the fulfilment of the Swiss NFP objectives through its activities in the area of public services and its wood production. The forest sector needs to make better use of the existing scope for the more efficient provision of both public and private-sector services. To do this it needs to develop a better understanding of itself as part of entire value-added chains, i.e. look for new opportunities for the marketing and hence commercial exploitation of forest services. For example the raw material “wood”, water resources and recreational opportunities could be managed more efficiently in collaboration with the wood value-added chain, the water management sector and the tourism sector. Research needs to be carried out on the development and identification of possible innovations and synergies.

Facilitation of structural adaptation

However, efficient management requires suitable framework conditions and entrepreneurial freedom. Due to public demands based on the right of access to the forest, forest owners are basically limited in their scope for action. These demands are concretely defined in the Swiss NFP and involve compliance with basic ecological requirements (ecological standard) and the provision of “protective forest” and “biodiversity” as priority services in certain defined areas. The Confederation wants to achieve targeted improvements in the framework conditions of the forest sector as well as promoting its structural adaptation for a limited period. This should facilitate efficiency and innovation, and involves in particular:

- the development of entrepreneurial freedom among public forest operations; to this end, the Confederation will organize awareness-raising and information campaigns and provide initial financial assistance for measures to optimize the size and organization of forest services;
- the separation of state and public-service tasks from operational tasks, whereby state tasks are guaranteed as in the past;
- the examination of existing regulations at federal and cantonal level from the perspective of their restrictive effects and optimization of the same; the Confederation will work in close cooperation with the cantons on this task;
- the implementation of programme agreements and service mandates at all levels (Confederation/canton, canton/forest owners, municipalities/forest owners) which show exactly how much public money is spent on the public services provided by the forest (cf. Chapter 5.2).

Measure	Responsible actor	Cooperation partners
10. Campaigns to raise awareness of the potential for change (opportunities in the forest sector) among important target groups, such as municipal managers, managers of forest operations, opinion leaders etc.; creation of a clear understanding of paradigm shift within the sector: the Confederation, cantons, municipalities, educational institutions take a stand for the forest sector.	SAEFL	seco, Confederation/cantons (implementation), forest owners/forest operations (basic consensus), organizations/associations (basic consensus), wood chain
11. Provision of business models, concepts and sample documents for the improvement of the economic viability of the forest sector; temporary promotion of the creation of cost-effective management units and forms of management that foster market success.	Organizations and other economic sectors (WVS, management consultancy expertise), SAEFL and cantons	Cantons (support, incorporation of specific characteristics of cantons), seco (NRP), organizations/associations (support)
12. Examination and, where appropriate, adaptation of legal and other regulatory provisions (Confederation and cantons) with respect to negative effects on economic viability; clarification of the public-service role (state tasks) of the forest services and their withdrawal from operative issues.	SAEFL, cantons	Organizations, WVS

5.5 Good market conditions for wood utilization

Increased demand for wood leading to improved profitability

The key to a viable and profitable Swiss forest and wood sector lies in an effective and competitive wood industry with the capacity to meet a strong demand for wood with its own products. An increased demand will lead to a rise in the volumes of wood harvested in Swiss forests and hence generate better opportunities for the rationalization and increased profitability of the forest sector.

Wood promotion by the Confederation

The active promotion of the demand for wood will make it possible to support the efforts to increase efficiency in the forest and wood sector. The Swiss NFP proposes that the Confederation:

- establish programmes to promote the use of wood and energy in cooperation with various partners (e.g. the continuation and further development of Wood 21 promotion and EnergieSchweiz programmes) so as to trigger increased demand for Swiss wood among wood processors and end consumers;
- support CO₂ and energy taxes which make CO₂-neutral wood and the products derived from it more competitive as a result of their contribution to improved ecological and energy balances;

- support the wood sector’s organizations through the promotion of wood-based building solutions (technical documentation) and elimination of competitive disadvantages (e.g. fire regulations);
- promote the use of wood in the construction of public buildings.

Measure	Responsible actor	Cooperation partners
13. Programmes to promote increased use of wood and wood energy.	Forest and wood organizations, forest owners and forest operations, SAEFL, FOE	SAEFL, WSL, ETH, technical universities, organizations
14. Support for the introduction of a CO ₂ tax; indemnification of CO ₂ fixed in wood products in the calculation of the CO ₂ balance.	Forest and wood organizations, forest owners and forest operations, SAEFL, FOE	SAEFL, WSL, ETH, technical universities, organizations
15. When selecting wood, the generally most ecologically optimum variant should be chosen (including consideration of transport distance); Inclusion of the examination of a “wood” variant in rules governing invitations to tender (e.g. as is the case in the forest law of the canton of Bern).	FOBL, FHO, forest and wood organizations (lobbying)	SAEFL, other federal services, cantons, municipalities
16. Creation of technical documentation on fire protection, noise protection, sustainability and construction systems and the implementation of the corresponding principles in practical building solutions; reduction of the competitive disadvantages of wood with respect to other materials through the liberalization of fire regulations and the adoption of wood-friendly building regulations.	Forest and wood organizations (implementation in building solutions, focus on planners and builders) Forest and wood organizations (lobbying) cantons/municipalities (buildings insurance, construction law)	SAEFL, ETH, technical universities, planners, standardization organizations, insurance companies

Framework conditions for the wood sector

The conditions under which the wood processing industry operates should be organized in a way that makes it possible for it to compete successfully on international markets. Optimum operation is currently hindered by certain framework conditions which also give rise to comparatively high production costs as compared with other countries. As a result, it is difficult or even impossible to take investment decisions with regard to the expansion of existing operations or creation of new ones. From the sector’s perspective, optimization is necessary and a matter of priority in the following areas;

- transport (e.g. 10% tolerance on 40 t weight limit from 2005, increase in reimbursement of the heavy traffic levy (LSVA) etc.);

- environmental protection (adaptation of maximum nocturnal limits for noise pollution and their implementation in individual cases);
- land-use planning (facilitated expansion of existing operations, provision of land for new sawmills at a favourable price);
- forest sector (development of a more professional and competitive structure for the acquisition of roundwood and improvement of logistics channels).

Conflicts of interest

The demands of the wood sector with regard to transport, environmental protection and land-use planning lie beyond the influence of the forest legislation and are the responsibility of other sectoral policies, some of which are located at cantonal level. This often leads to a conflict of interest with other sectoral policies. The economic associations should assume the responsibility for optimization in these areas. SAEFL sees its role as highlighting the issues for the forest sector and supporting the associations' demands insofar as this is compatible with general environmental concerns. Bases for structural improvement in the wood sector is also provided by the Confederation.

Measure	Responsible actor	Cooperation partners
17. Argumentative support of the forest and wood sector for the creation of good general operating conditions.	SAEFL	Sectoral associations, sectoral policies
18. Provision of basic assistance for possible structural improvements in the wood sector (e.g. analysis of the structure and potential of Swiss sawmills).	Initiative: wood sector organizations Responsibility: other federal offices (OSD)	SAEFL Organizations

Investment credit for the wood sector

The Confederation approves of and supports the wood sector's efforts to adapt its structures and increase its competitiveness. The forest investment credit, which is already available, will be extended to include the wood industry and sawmills in particular. To do this, the instrument must, however, be subject to conceptual scrutiny and adaptation.

Measure	Responsible actor	Cooperation partners
19. Granting of investment credits for future-oriented investments in wood processing; conceptual examination and adaptation of the existing instruments.	Forest and wood organizations, SAEFL	seco

5.6 Innovation through education, further training, research and development

Education guarantees core skills and competencies

Education is the basis of all activities within and on behalf of the forest. Education and further training are the driving forces behind innovation and productivity. A flexible up-to-date educational system must be able to guarantee the core skills and competencies required by the forest and wood sector. Actors should have the expertise and management skills necessary to fulfil forest policy objectives. Thus, the ability of forestry personnel to meet the increasing requirements arising from a more entrepreneurial approach and from the adoption of integrated approaches and cooperation in the forest sector (e.g. in the area of natural hazard risk management) is crucially important.

SAEFL supports forest education through coordination

The providers of education include institutions, associations, the Confederation and cantons. Research is carried out by the research institutions (e.g. WSL), universities and technical colleges (i.e. Swiss Federal Institutes of Technology/ETH and FHS). SAEFL is involved in the area of actor coordination and also promotes the quality of education and research in the area of forests.

Measure	Responsible actor	Cooperation partners
20. Formulation of core competencies in the context of a charter (with all forest actors). Promotion of the ongoing adaptation of the education system to the core competencies on the basis of the legislation in force.	SAEFL	Cantons, institutions, associations
21. Provision of opportunities for further training and promotion of joint educational opportunities in the area of forests and wood; education and further training in the wood value-added chain (managers, employees), including cooperation with planners.	Education institutes, SAEFL	OPET, SAEFL, institutions, associations, seco, professional training schools, technical colleges, Lignum, sectoral associations, ETH, WSL, EMPA
22. Formulation and implementation of a joint continuing education policy with all actors involved in the area of education policy.	SAEFL	Cantons, institutions, associations, educational institutes
23. Improvement of business management knowledge among all actors involved in the forest and wood sector (five-year educational programme throughout the forest education system).	Organizations, ETH, FHS, professional training schools and cantons (as bodies responsible for the professional training schools)	SAEFL (support)

Better knowledge transfer between research and practice

The support of the research sector is required to ensure that both the priority and additional objectives are fulfilled. Research must concentrate more on current problems and issues in forest practice, develop bases, seek out practicable solutions and develop innovations. Moreover, more effective instruments are required to ensure that research issues are identified through forest practice. Incentive systems are needed to encourage research to adopt and resolve these issues in collaboration with forest practitioners and, finally, so that the insights gained are integrated into forest practice, expert milieus, education and public relations. Research must also become more interdisciplinary to ensure that the increasingly complex issues in forestry are approached from a holistic perspective. This also means that it must rest on a far broader institutional basis. In addition to actual research, the role of monitoring (National Forest Inventory, landscape inventory, Sanasilva surveys, business surveys etc.) must be newly regulated and its institutional and financial bases guaranteed. The current erosion of academic research and education institutions represents a major challenge for forest policy.

Measure	Responsible actor	Cooperation partners
24. Partnership-based dialogue. Creation of a networked platform for the transfer of knowledge which includes representatives of the universities, technical colleges, other institutions and forest practice; development of a centre responsible for the integration of the results of applied research into forest education and for keeping the general public informed (Extension Service Center).	SAEFL	Cantons, municipalities, universities, technical colleges, research institutes (WSL), organizations/associations
25. Provision and support of research on wood in universities and technical colleges; deciduous wood research and construction-oriented wood research should be intensified in particular (new wood materials, high-performance materials, system solutions etc.).	Universities and technical colleges	SAEFL (argumentative support), associations
26. Consolidation of the Foundation for the Promotion of Forest and Wood Research.	SAEFL and cantons, possibly organizations	Organizations
27. Institutionalization of forest monitoring, in particular in relation to protective forest development and the concentration and deposition of air pollutants in the forest.	SAEFL, other federal offices, WSL	Forest owners, forest operations, organizations

5.7 Cross-sectoral partnerships

Greater interaction

Experience shows that other sectors have been exercising an increasing influence on the forest. Similarly, the influence of the forest and its services on other sectors and society in general is also growing. Thus, solutions to forest-related problems (e.g. more extensive use of wood to increase CO₂-storage) should be sought in and with other policy and economic sectors. At the same time, the specialized knowledge accumulated over the years by the forest sector (e.g. concerning the interaction between forest and water, experience in dealing with extreme events and natural hazards) is very useful for other sectors.

Partnership: a basic prerequisite

Thus, cross-sectoral partnerships represent an important precondition for the long-term guaranteed provision of sustainable forest management. Cooperation with other sectors and actors is imperative. The Confederation attaches great importance to the role of cross-sectoral partnerships in future forest policy whereby the forest sector can offer its services as a competent partner, on the one hand, and seek the assistance of suitable partners, on the other.

Promotion of an integrated approach

Partnerships with actors outside the forest area should lead to a greater awareness and a shift of the focus to holistic approaches. This holistic vision will create an acute awareness among managers of the dimensions “forest and environment/space”, “forest and the economy” and “forest and society”. As a result, far better use can be made of the multi-layered opportunities for synergies, even in everyday contexts.

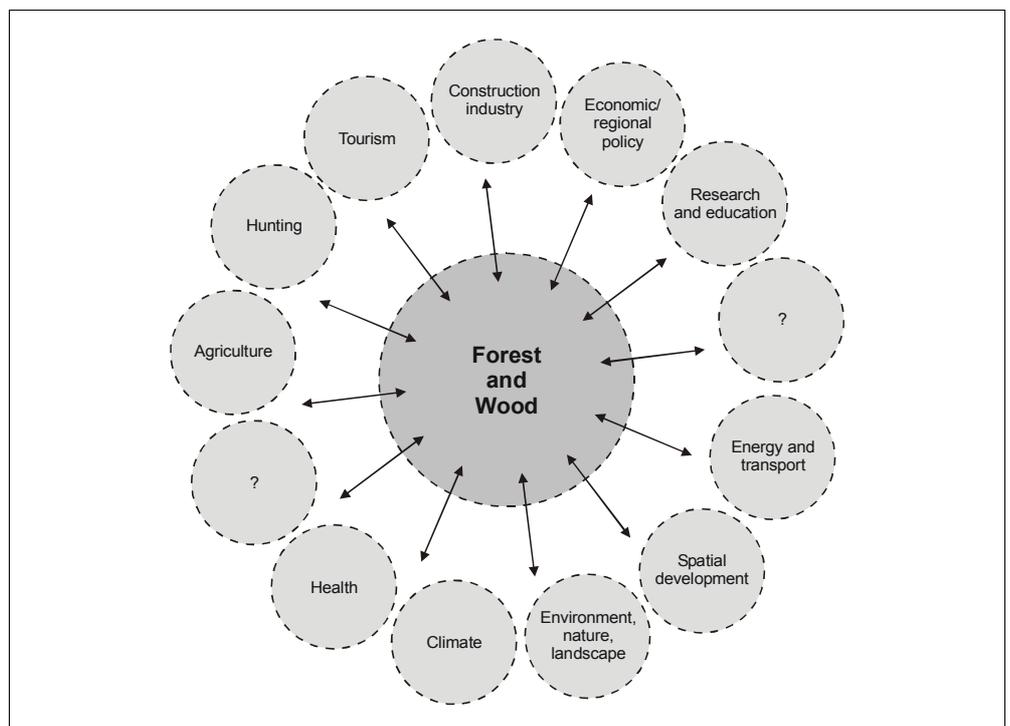


Figure 5-4:
Sectors that affect and influence the forest and wood sector
(the list is not exhaustive)

Based on: Sektorübergreifende Ansätze in der Waldpolitik. Höhere Synergien durch Partnerschaften mit anderen Politik- und Wirtschaftsbereichen, GEO Partner AG, Zürich, 2003.

Cooperation with other federal policies and the private sector

Almost all of the sectors that feature in the above diagram are currently in the process of transition or have already adapted to new conditions. This is true, in particular, of environment policy (Swiss Landscape Concept, Landscape 2020, climate and energy policy, clean-air policy), spatial development (re-evaluation of the basic principles of spatial development in Switzerland, federal urbanization policy, Rural Area Network), the new regional policy (NRP), agricultural policy 2007, tourism policy and the Federal Council’s renewed strategy for sustainable development. However, forest policy is not only connected with other federal policies, it also has links with the private sector. Various forest problems can or could be resolved more efficiently in cooperation with the private sector.

Joint programmes with other sectoral policies

Cooperation and partnership are no easy undertaking. They require trust between the participants and clarity with respect to the joint objectives. With the help of the following measures, SAEFL would like to take a step forward as part of the Swiss NFP and invite potential partners to do the same. Of primary importance are programme-specific partnerships with:

- the different cantonal policy areas in the context of integrated natural hazard risk management;
- the new regional policy (NRP) in the context of issues concerning the regional economy (creation of added value from the forest);
- water authorities at all levels to ensure the optimum provision of drinking water protection in the forest;
- agricultural policy in the context of the infringement of agricultural land by forest and the management of forest edges.

Measure	Responsible actor	Cooperation partners
28. Joint programmes with other sectoral policies (joint funding for joint objectives).	SAEFL	seco, FOAG, FOE, sectoral policies at cantonal level

Incentive policy focus on collaboration

The forest policy’s entire incentive system will be focused on holistic integrated approaches and will actively encourage inter-sectoral cooperation. Funding will mainly be targeted at cooperation models between:

- forest and timber operations for the development of more efficient logistics chains;
- forest operations with the intention of optimizing their size and organizational structures, and organizations within the forest and wood sector in connection with the funding of optimal business models for forest operations;
- private-sector and public organizations in the context of integrated natural hazard risk management;
- financial institutions, institutional investors and insurance companies likely to play an important role in the promotion of the use of wood in the construction sector and for energy purposes.

Measure	Responsible actor	Cooperation partners
29. Implementation of pilot projects with a strong integrated approach (including diffusion of the expertise gained) and granting of funding in association with certain conditions (consideration of integrated approaches as a criterion for granting of funding).	SAEFL	Cantons

5.8 Information and dialogue

Communication as a prerequisite to the implementation of the Swiss NFP

The implementation of the Swiss NFP involves numerous challenges: the content of the programme is highly complex, the fulfilment of its objectives requires the contributions of numerous participants and the open nature of the process means that new participants will continue to join the debate. Thus, it is essential that the participating actors work well together. This necessitates mutual trust that can only be achieved through intensive communication.

Concerted communication efforts

As part of the Swiss NFP, SAEFL will ensure that communication both within the forest and wood sector and with external target groups is intensified. Many of the measures include targeted efforts in the area of communication. Thus, a general concept will be developed for the programme to enable co-ordinated joint communication with clear and coherent content.

Public relations

The complexity of forest policy with its varying underlying demands and optimization tasks necessitates comprehensive communication with the general public and individual target groups (e.g. leisure seekers). Thus, the aim of the public relations work in this context is to inform and raise awareness of the interrelations within the forest ecosystem, thus ensuring that the public can clearly understand the intervention (and lack of intervention) in the forest.

Measure	Responsible actor	Cooperation partners
30. Communication campaigns to raise awareness among the general public about interrelations within the forest ecosystem; presentation of the services provided by the forest and the forest and wood sector (coherent messages and comprehensible argumentation).	SAEFL	Forest owners, forest operations, cantons, organizations, associations, schools, other disseminating instances

Dialog within the forest sector

There is a clear need for greater dialogue within the forest and wood sector – between individual companies, the administration and interest groups etc. This fact was clearly demonstrated in the course of the current Swiss NFP process. Various platforms already exist, e.g. Working Group for the Forest (AfW), the Platform for Natural Hazards (PLANAT) and the Rio Forest Forum Interdepartmental Committee (IDA Rio Forum Wald), which enable the exchange of experience and the resolution of joint tasks. Most of these platforms are, however, dedicated to specific issues. In order to respond to the need for constructive joint solutions, the Swiss NFP wishes to consistently promote and present dialogue between all participants.

Forest/Wood forum

The existing Swiss NFP Forum will be developed further. It facilitates the exchange of political and expert experience and will support the implementation of the Swiss NFP process. The Confederation will benefit from this process in a number of ways: the NFP objectives will be achieved more efficiently, conflicts minimized, constructive solutions and synergies identified through interdisciplinary cooperation and numerous insights and practical know-how gained through joint learning processes. The organization, function and participants of the platform have yet to be defined.

Measure	Responsible actor	Cooperation partners
31. Establishment of a platform for decision makers and experts from sectors with an interest in the forest to support the implementation and further development of the Swiss NFP.	SAEFL	Main interest/stakeholder groups

5.9 Measures relating to the other objectives

The measures relating to the other objectives (cf. Chapter 4.4) can be found in the thematic overview in the Annex.

6 Implementation

6.1 Subsidy mechanisms

- Programme agreements** In future the Swiss Confederation's subsidy policy in terms of the application of the Federal Law on Forests will take the form of target-oriented programme agreements between the Confederation and cantons.¹⁵ These comprehensive agreements, which will be valid for a number of years, link quantified contractual objectives with global budgets and a monitoring system. Negative interference between individual products will need to be avoided in the design of the subsidy models (e.g. the influencing of the wood market by highly subsidized wood from the protective forest). The cornerstones of this new subsidy strategy can be summarized as follows:
- Target-oriented subsidies**
- In future, subsidies will be based on the results of measures as opposed to their cost. Programme agreements record the priority objectives and results from the national perspective. As a result, the need for detailed regulations at operative level is eliminated. The cantons will have greater scope for action in terms of both strategy and measures.
- Partnership between the Confederation, cantons and forest owners**
- The programme agreements are the expression of a partnership. The Confederation can only achieve its forest policy objectives with the help of the cantons. These agreements are created when the interests of the Confederation and canton coincide. The cantons assume operative responsibility for the implementation of the programme whose actual services are provided by the forest owners. The cantons can also enter into service agreements with the forest owners. This new cooperation-based instrument marks the beginning of a transformation in the relationship between the Confederation, cantons and forest owners.
- Joint funding**
- Forest policy remains a joint task in accordance with the New Fiscal Equalization (NFA), i.e. the Confederation and cantons are jointly responsible for its funding. Apart from the new instrument of geographical-topographical burden sharing (GLA), there is no other provision for the shifting of burdens between the Confederation and cantons. This new solution means that, in terms of funding, the cantons are no longer liable for a fixed and predefined financial contribution. The extent to which the recipient or beneficiary of a measure should contribute to its funding is entirely a matter for the cantons.

The principles for the implementation of target-oriented subsidies in the area of the forest legislation were developed as part of the effor2 project at the same time as the Swiss NFP was being developed. They incorporate two main points:

The same federal contribution per service (uniform fees)

1. The payment of services for all cantons will be based on uniform fees. The calculation of these fees will be based primarily on the average national costs. Possible differences between the cantons in terms of the cost of providing ser-

¹⁵ Cf. effor2 sub-project: "Neugestaltung der Bundesbeiträge". Vorschläge zur Ausgestaltung der Zahlungen des Bundes im Rahmen von Programmvereinbarungen in der Waldpolitik, BSS, Basel, 2003.

vices will be compensated through the New Fiscal Equalization (NFA) and “geographical-topographic burden sharing” (geografisch-topografischer Lastenausgleich/GLA). The cost differences will not be taken into account in the context of the target-oriented subsidy policy.

The same federal contribution per product

2. The federal funding for all products based on the joint programme funding will be basically uniform in principle.¹⁶ The national priorities are expressed primarily by the different sizes of the “product kitties” (i.e. absolute value of funding available per product). Taking all subsidies into account, the Confederation’s current average contribution to the total cost of all measures in receipt of subsidies is around 48%.¹⁷ To ensure compliance with the budgetary neutrality required under the NFA, in future the Confederation’s contribution will total around 40%, following deduction of the GLA.¹⁸ This means that in future the Confederation’s contribution will be mainly in the range of 30% to 50%: in the case of very important measures and in exceptional cases involving smaller sums (e.g. hazard maps), a higher federal contribution of up to 60% is possible. The application of this range of contributions necessitates clear, transparent and demonstrable criteria based on secure data bases. During the initial contractual phase involving the new instrument of the programme agreement (probably from 2007, in coordination with the NFA), the Confederation’s contribution will generally total around 40%.

Forest investment credit

In addition to the programme agreements, the Confederation also has the option of granting interest-free or low-interest loans through the forest investment credit scheme. The credit is paid in a lump sum to the cantons which can then manage it autonomously in accordance with the Confederation’s guidelines. A capital sum of around CHF 100 millions is currently in circulation which is largely availed of by the public authorities (above all the municipalities). Most of the investment credit is used as bridging assistance for the pre-financing of subsidies granted in the aftermath of Storm Lothar and the avalanche winter of 1999. As part of the Swiss NFP, in addition to the existing forest subsidies, it is planned to adopt a new approach focused on the wood sector and the facilitation of major investments in cases in which the actors themselves are also willing to contribute. As this mainly involves inter-cantonal projects, more active management on the part of the Confederation would be helpful in this context.

¹⁶ A product comprises certain services to be purchased. Examples of products include the protective forest, biodiversity etc.

¹⁷ Weighted average

¹⁸ “Geographical-topographical burden sharing” (geografisch-topografischer Lastenausgleich/GLA) in the area of forest subsidies: financial transfers from the Confederation to the cantons of around CHF 24 million (calculation basis 1999).

6.2 Organization and allocation of roles

Decentralized organization of forest services An important factor behind the previous – in part significant – success achieved in the implementation of national forest policy is the successful interaction of all levels of the administration. The decentralized organization of the forest sector has made an important contribution to the locally adapted implementation of national objectives. This confirms the importance of the coherent organization of the forest services at all levels.

Division of tasks and responsibilities However, the collaboration between the different public and private actors still needs to be improved so as to increase the efficiency and efficacy of the entire system. The question of “good governance” is central in this context.¹⁹ The orientations and measures outlined in the previous chapters involve a division of tasks and responsibilities that is mainly in tune with the rules of good governance:

- The Confederation will concentrate on strategy and strategic control and largely withdraw from the provision of operative support at the level of individual companies/operations. It will also promote communication, cooperation and coordination between all actors and, to this end, create a forum which will act as a platform for the exchange of information and views (cf. Chapter 5.8)
- The cantons are responsible for the operative implementation of forest policy. In future, they will act as the partners of the Confederation rather than implementing bodies. The cooperation and co-financing processes between the Confederation and cantons will be regulated in the form of programme agreements to be developed in partnership for a duration of several years (cf. Chapter 5.4). Thus, this joint task necessitates good organization between the Confederation and cantons. To this end, the Confederation will foster political and expert exchange and cooperation with the Conference of Forest Directors (FoDK) and the Conference of Head Cantonal Foresters (KOK).
- Forest owners and the forest sector will be given greater scope for action and hence greater responsibility, and as the cantons’ partners they will enter into service agreements with them. They are, therefore, being called on to think more strategically with respect to their own future options and the socially desirable forest services to be provided for the future.

Horizontal coordination Greater emphasis will be placed on horizontal coordination within the federal administration. SAEFL will become very active within existing coordination platforms such as the Rio Forest Forum Interdepartmental Committee (IDA Rio Forum Wald) and Rural Area Network (Netzwerk ländlicher Raum) and seek out new opportunities in this regard where necessary.

¹⁹ Good governance is based on the following principles: clear management structures, coordination of tasks, competencies and responsibility, separation of strategic and operative tasks, transparency based on credible communication, clearly defined decision-making processes. Moreover, rules should be derived from these principles which facilitate the consolidation of cooperative forces and create the necessary conditions for conflict resolution.

Organization of the forest agency in SAEFL

In order for the Swiss NFP to be implemented efficiently and in accordance with the new priorities, the organization of the Swiss Forest Agency needs to be examined and adapted if necessary. There was a plan to carry out this task from 2004, however it was overtaken by the Budgetary Relief Plan 2003. Thus, the Swiss Forest Agency plays its part in the significant reduction of jobs within SAEFL and reduces its number of departments. It will also have to concentrate more than previously on the core tasks (priorities of the Swiss NFP) and withdraw various coordination and consultancy services despite the fact that these are highly valued by the cantons.

6.3 Estimation of the cost of the Swiss NFP

Total cost of the Swiss NFP

It will cost around CHF 2.7 billion to implement the Swiss NFP between 2004 and 2015. Of this CHF 1.1 billion or 41%, which represents around CHF 95 million per year, will be born by SAEFL/Swiss Forest Agency. The remaining costs will be carried mainly by the cantons followed by the other federal authorities (FOAG, FOE, seco etc.), forest owners and associations. These costs were not broken down any further in the context of the national forest programme. The following table does not present the entire budget of SAEFL/Swiss Forest Agency. In addition to the cost of implementing the national forest programme, it also incurs costs in the following areas: structural protective measures (around CHF 50 million/year), forest surveys and educational projects (CHF 8 million/year), implementation of the Federal Law on Hunting (around CHF 5 million/year) and other miscellaneous areas (e.g. international affairs at less than CHF 1 million/year).

Table 6-1: Estimation of the cost of the Swiss NFP in Swiss francs

(not including protective measures, forest surveys, other projects in the areas of education, implementation of the hunting legislation and other smaller miscellaneous items)

Individual objectives	Cost per year (in CHF)	Annual costs for SAEFL/ SFA (in CHF)
Priority objectives		
• Protective forest services	130 million	54 million
• Biodiversity (natural forest development,* species protection)	22 million	9 million
• Forest soils, trees and drinking water	1 million	1 million
• Wood value-added chain (use and processing of wood)	31 million (incl. investment credits)	12 million (incl. investment credits)
• Production capacity of the forest sector	16 million (limited to 5 years)	7 million (imited to 5 years)
Other objectives		
• Conservation of forest area	<1 million	<1 million
• Landscape diversity	3 million	1 million
• Networks of forests/forest edges	5 million	2 million
• Potentially harmful organisms	14 million	6 million
• Forest and game	<1 million	<1 million
• Recreation and leisure	2 million	<1 million
• Education, research and development	2 million	1 million
Total NFP	ca. 230 million	ca. 95 million

* including cost of site classification maps

Comments:

- The target-related costs indicated in the table relate to the forest area in all cases. This means that they do not incorporate, for example, the cost of species protection outside the forest area (this also applies to soil protection, landscape diversity, game etc.).
- The contribution of the Confederation presented in Chapter 6.1 (30–50%) was incorporated into this cost assessment when subsidies were involved. In order to fulfil other specific objectives, SAEFL/Swiss Forest Agency can also fully finance third-party mandates.

Concentration of funding on priority objectives

By far the largest part of the federal funding is used to “purchase” public protective forest services at cantonal level. Together with the support of measures to counteract forest damage, which is only guaranteed in the case of a threat to the protective forest, around 66% of the funding is used in the conservation of the protective forests. Other major items of expenditure include biodiversity in general (species protection, natural forest development, forest and wild animals/game, forest edges) at 13% and the support of wood use and processing at 14% (of which 9% in the form of investment credits) of all funding.

Less funding required

A comparison with SAEFL’s previous budget for the forest of approximately CHF 120 million²⁰ shows that there will be a reduction of around CHF 25 million in the

²⁰ Average for the years 1995-99, i.e. years without natural disasters.

funding required per year. This reduction can be explained by the fact that the Confederation no longer supports the maintenance of young forests and forest roads outside of the protective forest.

Multi-annual credit for the forest The above cost estimation is based on the knowledge currently available. The gaps in the information available in the area of drinking water and soil protection as well as the flexibility necessary for adaptation to new conditions necessitate ongoing planning. Thus, the funding for the forest is to be provided in the form of a multi-annual credit. The Confederation will define initial requirements for a multi-annual credit based on the strategic objectives of national forest policy.

Budgetary Relief Programme 2003 The Budgetary Relief Programme 2003 means a reduction of 42 CHF million for the entire forest sector, including structural protective measures, from 2006. It is difficult to estimate the effects of these cuts in the area of structural protective measures, however they are largely compatible with the target objectives of the Swiss NFP. While the reduction in funding will mean the consistent application of the most efficient methods, it also means that there is nothing in reserve to finance new requirements (e.g. water, soil protection) or for the reintroduction of support for the maintenance of young forests. Any further reduction in funding would represent an enormous threat to the objectives of the Swiss NFP and possibly render their fulfilment impossible.

6.4 Partial revision of the Federal Law on Forests

Immediate implementation from 2004 Based on the priorities defined and, where possible, in accordance the legislation in force, the Swiss NFP should be implemented immediately from 2004. In terms of operation, the measures are being included in the Confederation's programme of work for the next few years. As the Confederation is not solely responsible for many of the measures, opportunities must be created to involve all of the partners. The cantons will play a very important role in this context.

Partial revision of the forest legislation necessary Examination of the proposed Swiss NFP measures shows that the partial revision of the Federal Law on Forests is also necessary: of the 57 articles in the Law on Forests, 14 will probably need to be revised – not including the changes already under way in accordance with the NFA (cf. Table 6-2). In addition to the issues examined in this report, other problems and developments exist in the forest sector that will also necessitate the revision of the forest legislation. These include the question of eligibility for higher office of forest officials (Art. 29 WaG, based on the reform of forest studies at the Swiss Federal Institute of Technology), work safety during wood harvesting (Art. 21; 35 WaG; Federal Council mandate), the technical area of natural hazard prevention (Art. 19, 32, 35, 36 WaG; maintenance of protective structures and avalanche warning) and the possible inclusion in the legislation of a mandatory contribution to the self-help fund by the forest sector.

Schedule

The partial revision of the legislation will be advanced rapidly in accordance with the following schedule: development of a consultation document for the partial revision of the WaG (2004), consultation (2004/2005), approval of the Message²¹ by the Federal Council (2005), parliamentary review (2005/2006), coming into force (1.1.2007).

Table 6-2: Swiss NFP measures, Federal Law on Forests and other laws and ordinances

Swiss NFP measures	Articles of the Federal Law on Forests	Other laws and ordinances
Main measures in relation to priority objectives		
Measure 1: Definition of the priority services "protective forest" and "biodiversity" and their indemnification during planning (instrument: programme agreement in accordance with the NFA).	NFA, 19	
Measure 2: Promotion of region-specific programmes for the ecological improvement of forest edges, for creation of quiet zones for fauna in areas of high ecological value, to increase quantities of dead wood, interconnection of habitats, for the definition of protected forest areas and for the continued practise of traditional forms of management.	NFA	
Measure 5: Legislative definition and implementation of an ecological standard for forest management.	20; 43	
Measure 6: Development and implementation of specific promotion and genetic conservation programmes for priority species (including the identification of priority species).	NFA	
Measure 7: Identification of the extent of damage caused by airborne pollution and its impact on the forest. Efforts to reduce the level of contamination in excessive cases.		LRV
Measure 11: Provision of business models, concepts and sample documents for the improvement of the economic viability of the forest sector; temporary promotion of the creation of cost-effective management units and forms of management that foster market success.	40	
Measure 12: Examination and, where appropriate, adaptation of legal and other regulatory provisions (Confederation and cantons) with respect to negative effects on economic viability; clarification of the public-service role (state tasks) of the forest services and their withdrawal from operative issues.	20, 21	
Measure 13: Programmes to promote the increased use of wood and energy wood.	31; 38	EnG; StoV
Measure 14: Support for the introduction of a CO ₂ tax; Indemnification of CO ₂ fixed in wood products in the calculation of the CO ₂ balance.		CO ₂ Law

²¹ A Message is draft legislation presented to parliament by the Federal Council

Swiss NFP measures	Articles of the Federal Law on Forests	Other laws and ordinances
Measure 15: When selecting wood, the generally most ecologically optimum variant should be chosen (including consideration of transport distance). Inclusion of the examination of a “wood” variant in rules governing invitations to tender (e.g. as is the case in the forest law of the canton of Bern).		VoeB
Measure 19: Granting of investment credits for future-oriented investments in the area of wood processing; conceptual examination and adaptation of the existing instruments.	40	
Other measures		
1a1: Extended catalogue criteria for the exceptional authorization of clearing and increased emphasis on spatial planning aspects (possible criteria: reintroduction of agricultural management and pasture management on former agricultural land; existence of predominant public interest in areas with increasing forest area).	5	
2a2: Partial abandonment of the dynamic concept of the forest and creation of an Official Register of Forests (Kataster) in areas with an increase in forest which is defined as undesirable in terms of spatial planning; after 30 years, it will be decided whether areas taken over by the forest that are not officially forest areas according to the Register of Forests are to be classified as forest area.	2; 5	
2a3: In areas in which forest is increasing, abandonment of compensation in kind for clearing in favour of nature and landscape conservation measures.	7	
3a2: Definition of corridors (including wildlife passages) and stepping stones based on the National Ecological Network (Réseau écologique national/REN) and spatial planning.		NHG
3b1: Definition of potential compensation areas for clearing in the context of spatial planning (use planning) for the benefit of the networking of forest areas.	7	RPG
5a2: Checkpoints at borders to prevent the introduction of known potentially harmful organisms (quarantine organisms).		PSV
6a1: Supra-regional definition of game areas as a basis for the management of game.		JSG
14b1: Development of legal bases (forest structures, major events, liability issues, access rights etc.) in connection with the recreational use of forests.	14; 16	
15e2: Legal definition of the obligation to provide continuing forest education.	29; 30	

Comments

- Where the NFA is indicated, the measure is based on the changes to the forest legislation proposed in the context of the NFA. These concern articles 35; 36; 37; 38; 41.
- Articles 37 and 38 need to be adapted as a result of the adoption of the Budgetary Relief Programme 2003 by parliament.

6.5 Programme monitoring and evaluation

Iterative Swiss NFP process

The Swiss NFP is a process involving policy planning, implementation monitoring and evaluation at national level and in the cantons. With the help of indicators the Confederation will monitor the success of the new policy: the development of the forest ecosystem, the situation in the forest and wood sector and the fulfilment of the important objectives of the Swiss NFP. The insights gained will be incorporated into the ongoing process.

Evaluation

In order to assess the efficiency and efficacy of the entire Swiss NFP process, an intermediate evaluation will be carried out in 2008 as well as an overall evaluation on completion of the programme in 2015. These evaluations will include analyses of the programme implementation, analysis of the extent to which the objectives have been fulfilled and programme effects.

Monitoring

Developments in and around the forest will be observed by means of monitoring system. The pan-European indicators for sustainable forest management will be used to ensure the comparability of the data at both national and international level. Additional indicators should only be formulated in justified cases. Reporting will be carried out in the context of existing reports (e.g. the forest report compiled in collaboration with the WSL). New regulations will have to be formulated with respect to the role of monitoring (National Forest Inventory, landscape inventory, Sanasilva surveys, surveys of forest operations etc.) and to guarantee its execution in both institutional and financial terms.²²

Data sources

The data will be taken from existing inventories and surveys such as the National Forest Inventory, the spatial statistics, the socio-cultural forest monitoring (WaMos public survey), the Monitoring of Forest Ecosystems in Switzerland (Waldbeobachtung Schweiz), the Phytosanitary Observation and Reporting Service (PBMD), biodiversity monitoring and various business surveys (e.g. forest statistics/network of pilot operations, census of companies). Furthermore, the effor2 project contains provisions for the monitoring of objectives defined for four years. New monitoring and evaluation instruments (e.g. in the area of soil compaction) need to be developed. The gaps that exist could be filled with the help of targeted research mandates.

²² The National Forest Inventory (NFI) will be one of the main monitoring instruments. To this end it must be developed in accordance with the Swiss NFP objectives and given a stable basis. The use of the NFI would also enable the cantons to be relieved of their obligation to provide information.

6.6 Crisis management in the aftermath of extreme events

The Swiss NFP offers better basic conditions in the event of a crisis

The Swiss NFP is conceived for the normal forest policy situation and does not incorporate specific provisions for disaster situations, for example the aftermath of a bad storm. The question arises as to whether the formulated strategies and measures are also suitable for dealing with an extreme event at national level. Initial comparisons of the findings in relation to Storm Lothar, which are still incomplete, and the Swiss NFP measures show that the Swiss NFP will foster good preconditions for an improved reaction to future events, in particular with regard to organization.²³ The research on Storm Lothar clearly showed that efficient management and marketing organizations are better prepared for crisis situations than ad-hoc organizations. Furthermore, it would appear that large management units and inter-company collaboration also play an essential role in enabling the optimization of forest management during such crises.

Clearly defined priorities, also in the case of crisis

In terms of institutions, the research shows that clear objectives are necessary for state action so that clear instructions can be defined for the use of public money. The standard instruments of forest policy should basically be used. In this way, delays and uncertainties in the area of decision-making are avoided. Furthermore, bases specifically tailored to prioritization during major events are also necessary. These bases have been created with the Swiss NFP and will be further substantiated in the course of its implementation. The bark-beetle problem has been dealt with, in particular: given that the Confederation will consider as priority services those services that benefit the common good and are among the identified priority services, in future federal funding will only be used for measures to counteract bark beetle infestation if the protective services of the forest are at risk.

Establishment of a team of experts

In terms of crisis management in the strict sense (communication and preparation of a possible special programme), the Lothar research recommends the establishment of a preventive solution aimed at the balanced treatment of the interests at stake. It proposes the creation of an expert group for the purpose of implementing the measures that would define the prioritization of state action in the case of a crisis. The tasks of formulating a crisis management programme, estimating the funding required and possibly implementing extraordinary measures and communication will fall to an expert committee.

Bern/Zurich, December 2003

²³ The most recent findings from the Lothar research will be available end of April 2004. If they lead to relevant changes to the legislation, it is planned to incorporate them into the Message on the partial revision of the Federal Law on Forests.

Annexes

1 Acronyms

BC

base cations: calcium, magnesium and potassium (ratio of basic cations to aluminium in the soil solution should not be lower than 1, otherwise the roots may suffer toxic effects)

BBG

Federal Law on Professional Training, www.admin.ch/ch/d/sr/sr.html

BSF

Forest with special protective function (cf. Swiss Forest Agency circular/Kreisschreiben Nr. 8), www.environment-switzerland.ch

Cantonal WV

Cantonal branches of the Association of the Swiss Forest Owners

Critical Level for Ozone

The critical level for ozone is calculated as the accumulated hourly values from April to September above a threshold of 40 ppb

DEA

Federal Department of Economic Affairs, www.evd.admin.ch

DETEC

Federal Department of Environment, Transport, Energy and Communication, www.uvek.admin.ch

DHA

Federal Department of Home Affairs, www.edi.admin.ch

effor2

Project for the development of a new instrument for the implementation of forest subsidies (programme agreements with the cantons), www.effor2.ch

EnG

Federal Law on Energy

EMPA

Swiss Federal Laboratories for Materials Testing and Research, www.empa.ch

ETH

(EPFL and ETHZ)

Swiss Federal Institute of Technology (Lausanne: www.epfl.ch; Zurich: www.ethz.ch)

ETHG

Federal Law on the Swiss Federal Institutes of Technology,
www.admin.ch/ch/d/sr/sr.html

FAL

Swiss Federal Agricultural Research Centre, Zürich-Reckenholz, www.sar.admin.ch

FAN

Natural hazards forestry working group, www.fan-info.ch

FDG

Federal Department of Finance, www.efd.admin.ch

FEDRO

Federal Roads Office (DETEC), www.astra.admin.ch

FH/FHS

Third-level technical college(s)

FHSG

Federal Law on Technical Colleges

FHO

Federal Housing Office (DEA), www.blw.admin.ch

FOAG

Federal Office for Agriculture (DEA), www.blw.admin.ch

FOBL

Federal Office for Buildings and Logistics (FDF), www.bbl.admin.ch/de/

FOE

Federal Office for Energy (DETEC), www.energie-schweiz.ch

FOWG

Federal Office for Water and Geology (DETEC), www.environment-switzerland.ch

FUB

Research Institute on Environmental Monitoring , Rapperswil

GE Convention

Geneva Convention (on Long-Range Transboundary Air Pollution)

GEOSTAT

The federal service for spatial data, www.statistik.admin.ch/service-stat/geostat/

GNP

Gross National Product: the total money value of the final goods and services produced in a nation's economy over a one-year period including income accruing to residents from investments abroad.

(GDP = Gross Domestic Product: the total money value of the final goods and services produced in a nation's economy over a one-year period)

GWG

Mountain forest maintenance group

IAP

Institute for Applied Plant Biology, Schönenbuch

ICP Forests

International Co-operative Programme on Assessment and Monitoring of Air Pollution Effects on Forests

JSG

Federal Law on Hunting and the Protection of Wild Mammals and Birds

KS

Circular (Kreisschreiben), www.environment-switzerland.ch

LEK

Landscape development concept

Lignum

Umbrella organization of the Swiss wood sector, www.lignum.ch

LRV

Ordinance on Air Pollution Control

LSVA

Heavy traffic levy, www.are.admin.ch/are/de/verkehr/lsva/

NAIS (NaiS)

Sustainability in the Protection Forest, www.gebirgswald.ch/bilder/NaiS.PDF

NFI

National Forest Inventory, www.wsl.ch/land/products/lfi/

NGO

Non-Governmental Organization

NHG

Federal Law on Nature and Landscape Protection, www.admin.ch/ch/d/sr/sr.html

NRP

New regional policy of the Swiss Confederation

OPET

Federal Office for Professional Education and Technology (DEA), www.blw.admin.ch

ÖQV

Ordinance of 4 April 2001 relating to the Regional Promotion of the Quality and Interconnection of Ecological Compensation Areas in Agriculture

OSD

Federal Office for Spatial Development (DETEC), www.are.admin.ch

OZD

General customs authority (Oberzolldirektion)

PBMD

Phytosanitary Observation and Reporting Service (WSL), www.pbmd.ch

Profor II

Project for the coordination of forest education and training,
www.codoc.ch/d/d_codoc_profor.asp

PSV

Ordinance on Plant Protection

Regio Plus

Programme for the support of structural change in rural areas, www.regioplus.ch

RPG

Federal Law on Spatial Planning, www.admin.ch/ch/d/sr/sr.html

SAEFL

Swiss Agency for the Environment, Forests and Landscape (DETEC),
www.environment-switzerland.ch

SAH

Swiss Working Group for Wood Research, www.holzforschung.ch

SBV

Swiss Farmers' Association, www.bauernverband.ch and www.sbv-usp.ch

seco

State Secretariat for Economic Affairs (DEA), www.seco-admin.ch

SFA

Swiss Forest Agency (SAEFL), www.forstdirektion-schweiz.ch

SFOPH

Federal Office of Public Health (DHA), www.bag.admin.ch

SFSO

Federal Statistical Office (DHA), www.statistik.admin.ch

StoV

Ordinance relating to Environmentally Hazardous Substances,
www.admin.ch/ch/d/sr/sr.html

VBBo

Ordinance relating to Impacts on the Soil, www.admin.ch/ch/d/sr/sr.html

VoeB

Ordinance on Public Procurement

WaG

Federal Law on Forests, www.admin.ch/ch/d/sr/sr.html

WaMos

Socio-cultural forest monitoring: “What do we expect of the Swiss forest?”
Long-term monitoring of the populations expectations and knowledge of the forest and
the implementation of the resulting insights, www.environment-switzerland.ch

WaV

Ordinance on Forests, www.admin.ch/ch/d/sr/sr.html

WEP

Forest development plan

Wood 21

Wood promotion programme, www.holz21.ch

WSL

Swiss Federal Institute for Forest, Snow and Landscape Research, www.wsl.ch

WVS

Association of the Swiss Forest Owners, www.wvs.ch

2a List of diagrams and graphics

Figure 2-1: Structure of the policy system	20
Figure 2-2: Project process	21
Figure 4-1: The three dimensions of sustainable forest management	28
Figure 4-2: Five priority objectives	30
Figure 5-1: Overview of strategic directions	39
Figure 5-2: Protective forest and biodiversity as priority services (schematic representation)	40
Figure 5-4: Sectors that affect and influence the forest and wood sector	51

2b List of tables

Table 5-3: Ecological standard	43
Table 6-1: Estimation of the cost of the Swiss NFP in Swiss francs (not including protective measures, forest surveys, other projects in the areas of education, implementation of the hunting legislation and other smaller miscellaneous items)	59
Table 6-2: Swiss NFP measures, Federal Law on Forests and other laws and ordinances	61

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- Waldpolitik Bund; Schwerpunkte des Eidg. Departementes für Umwelt, Verkehr, Energie und Kommunikation (UVEK).

The reports of the eight working groups (i.e. “Forest Area”, “Forest Conservation”, “Wood utilization”, “Biodiversity”, “Protective Forest”, “Economic Viability of Forest Operations”, “Recreation and Leisure” and “Education and Training”) were the key sources used in the compilation of the Swiss NFP final report. The working groups’ final reports can be downloaded at the following internet address: www.waldprogramm.ch/projekt/materialien.shtml.

4 Glossary

Activities subject to authorization

The staging of major events in the forest requires the authorization of the cantons.

Alien species

Species that are introduced from an area outside their former or current habitual native range.

Biodiversity, biological diversity

Term used to denote the diversity of life on earth on all levels and in all combinations. The most obvious expression of biodiversity is the number and diversity of species (species diversity) and the diversity of ecosystems (ecosystem diversity). Biodiversity is the outcome of a long evolutionary process, in the course of which organisms adapted to constantly changing living conditions (thanks to the differentiation of their genetic heritage (genetic diversity)) and thus underwent significant changes.

Core forest competencies

Competencies arising from the combined application of forest training and practical experience.

Cantonal spatial master plan

The cantonal spatial master plan specifies the ways in which spatially-relevant activities are harmonized with spatial development objectives and the sustainable protection of the environment. The cantonal spatial master plan is the instrument used for the general management and coordination of spatial development in the cantons and is binding on the authorities.

Dead wood

All dead wood elements, e.g. lying and standing tree, branches and large roots, within forest stands or in water courses.

Dynamic forest concept

The term “dynamic forest concept” refers to a definition of the forest whereby the current state of a forest, i.e. the actual growth characteristics (e.g. age, area), alone determines whether a given area qualifies to be legally defined as forest. Thus, the origin of the area, the wishes of its owner and its description in the land register are irrelevant. Based on this definition, it is possible for the forest edge to undergo “dynamic” shifts.

Endangered species

Endangered species are species that are not threatened with extinction but are strongly at risk from disappearing from their natural habitats in the near future.

Energy wood

Wood used for the production of energy, e.g. wood generated during forest maintenance, scrap wood, waste wood.

Forest actors

Individuals and groups with an interest in the areas of forest and wood, e.g. forest owners, forest service, entrepreneurs, associations, organizations.

Forest Development Plan (WEP)

The Forest Development Plan (also known as the Regional Forest Plan in some cantons) is the management and coordination instrument currently used by the cantonal forest services. It defines the services to be provided by the forest in the public interest (forest functions) and provides instructions on the sustainability of forest management. Under the terms of the Federal Law on Spatial Planning, the WEP must be coordinated with the cantonal spatial master plan. The WEP incorporates one region or canton and is binding on the authorities.

Forest ecosystem

A forest ecosystem is a dynamic complex of plant, animal and microorganism communities and their abiotic environment which forms a functional entity, within which the existence of trees plays an important role. Human beings with their cultural, economic and ecological needs are an integral component of many forest ecosystems.

Forest education

Forest education (Waldpädagogik) promotes a holistic relationship between society and the cultural, economic and ecological aspects of the forest and the environment as a whole.

Forest education charter

Central ideas on education in the forest professional area jointly developed and recognized by the institutions responsible for the forest education system.

Forest education system

Entire system for education, further training and continuing education in the forest professional area based on the Federal Law on Forests (WaG), the Federal Law on Professional Education (BBG), the Federal Law on Technical Colleges (FHSO) and the Federal Law on the Swiss Federal Institutes of Technology (ETHG).

Forest operations

Forestry operations, which are mainly public, are organizational entities that manage forests on behalf of forest owners.

Forest professional area

Area incorporating all those actively involved in the forest sector.

Forest sector

General term for all of the actors and activities associated with the management of forests.

Game areas

Zones defined on the basis of geographical and anthropic obstacles and administrative boundaries that provide a habitat for one population (reproductive community) of a specific species of wild animal. Thus, game areas also correspond to the area in which certain measures, e.g. hunting intervention, take effect.

Genetic reserve

The aim in areas designated as genetic reserves is to conserve the genetic variety of the native tree species and their local breeds.

Invasive alien species

Alien species whose introduction and proliferation represents a threat to ecosystems, habitats or other species and causes socio-cultural, economic environmental damage and/or harm to human health

Islands of old growth

Islands of old growth serve as areas in which rare plant and animal species are conserved. Biologically effective old growth is conserved in these areas, either until the standing stems disintegrate or until another neighbouring stand is ready to assume this task.

Landscape development concept (LEK)

A LEK proposes ways in which landscapes can be used sustainably and improved, both ecologically and aesthetically. The plans and reports are recommendatory in nature and they may be implemented in conjunction with cantonal spatial master plans, forest development plans, operational plans and/or contracts governing the payment of subventions.

Managed protected forest area

Managed protected forest areas are forest areas selected for the purpose of conserving traditional forms of forest management, rare plant communities, rare plant and animal species or the ecological conditions in the area in question. Special forestry measures – usually specific wood harvesting practices – are required to achieve the defined objective.

Official register of forests (Waldkataster)

Set of maps indicating the legally binding definition of forest areas and their differentiation from other zones. The only boundaries currently indicated on the maps in the register are those that legally distinguish forest areas from development zones (in accordance with Article 13 of the Federal Law on Forests).

Operating plan

The operating plan (also referred to as the economic plan and management plan) is the planning instrument used by individual and cooperating forest operations (forest owners, managers). It incorporates silvicultural planning, business plans, measures to be implemented and performance monitoring standards. It may also contain information on the optimization of the assortment. The operational plan is integrated vertically into the forest development plan.

Public services

Public services differ from private-sector services in that their scope does not diminish as a result of their consumption by other consumers (absence of use rivalry). For example, all residents in an area at risk from natural hazards can “consume” the protective function of a protective forest without reducing their neighbours’ consumption of the service. Moreover, these services are not saleable as individuals cannot be prevented from consuming them (non-exclusivity, free-rider behaviour). This means, for example, that nobody can be excluded from the protective services provided by a protective forest.

Recreation and leisure

The terms “recreation” and “leisure” are used almost or entirely synonymously in the forest literature and also, in part, in the area of spatial planning. In the context of the Swiss NFP recreation is hierarchically subordinate to leisure. Leisure is understood as the free availability and control of time. A differentiation is also made between “external activities” and “individual leisure” (relaxation, recreation, change of scene, distraction, communication, sociability, information, education, movement, expression, identity, self-development and freedom from obligation) and “social leisure” (sozialization, regeneration, compensation, integration, consumption, commerce, system stabilization, innovation, lifestyle creation)

Recreation and leisure forest

A forest that is managed primarily with a view to recreation and leisure

Red-list species

Red lists are a legally-binding nature conservation instrument as defined in Article 14 of the Federal Swiss Ordinance on Nature and Landscape Protection. Switzerland’s endangered species are included in the lists on the basis of the IUCN criteria

Stand

A community of trees that is sufficiently uniform in terms of age, structure and condition so as to be distinguishable from forest or other vegetation in adjacent areas, thus forming a temporary forest or management unit.

Stepping stones

The purpose of stepping stones or stepping-stone biotopes is to provide a way of overcoming significant spatial barriers and enable target species to move between larger biotopes.

Strictly protected forest areas

The main feature of strictly protected forest areas is the complete absence of management. A process is initiated which enables the free development of the forest with its succession phases. The priority tasks of a strictly protected forest areas are based on its holistic perspective and approach to the conservation of the biotic communities and their species.

Wildlife corridors

Wildlife corridors are sections in the movement routes of wild animals that are laterally bordered by natural or anthropic structures or intensively farmed areas. They make it possible to connect the disparate and isolated habitats of populations or subpopulations.

Wood chain (also wood processing chain, wood value-added chain)

Network incorporating all of the operations and associations involved in the forestry and wood sector (wood harvesting, logistics, wood processing, wood trade, end consumption).

Wood sector

General term for the companies and organizations involved in the processing and trade in wood and wood products. These include, for example, sawmills, joinery workshops, furniture factories, wood construction firms, wood derivatives industry, the paper industry and the companies involved in wood trading.

5 Mandates for the development of the Swiss NFP

The Swiss National Forest Programme (Swiss NFP) represents the fulfilment by SAEFL of two mandates: 1) the mandate defined in the legislative planning for 1999 to 2003; 2) the mandate issued by the Department of Environment, Transport, Energy and Communications (DETEC) on May 9, 2001.

Mandate from the legislative planning for 1999 to 2003

2.4 Environment and Infrastructure²⁴

Objective 7: Environment, transport and energy policy based on the strategy "Sustainable Development of Switzerland"

R 14: Follow-up programme E2000 – Revision of the nuclear power legislation – improved air pollution control – forest as part of a comprehensive and sustainable landscape policy

"The Federal Council aims to improve the co-ordination between forest and landscape policy. To this end, it will present a concept on forest area containing the authoritative definition of forest boundaries and take a decision on the introduction of cantonal master plans for the forest. The integrated forest policy approach will also necessitate the revision of the Federal Law on Forests. Finally, the Federal Council wishes to guarantee the promotion of the renewable raw material wood through the creation of a follow-up programme to Wood 2000 which will run for several years."

Mandate of the Department of Environment, Transport, Energy and Communication (DETEC) of 9 May 2001

The Swiss NFP process was launched with the publication in March 2000 of DETEC's focus paper on the Swiss Confederation's forest policy.²⁵ At that time, DETEC initiated an informal consultation process on the paper with interested organizations, associations and institutions. Substantial and procedural deficits were identified as a result. SAEFL was finally commissioned by DETEC to:²⁶

- examine the six focus areas (forest area and forest distribution, forest protection, protective forest, species diversity of flora and fauna, increasing wood utilization, socio-economic functions of the forest) in detail with partners and working groups;
- to define quantifiable objectives and measures for each focus area that can be implemented in the medium-term (Swiss NFP);
- to collate all of the results in a general report which would form the basis for the development of a government message to parliament for the adaptation of the forest legislation and other measures..

²⁴ Bericht über die Legislaturplanung 1999 – 2003; SR 00.016, p. 16.

²⁵ Waldpolitik Bund. Schwerpunkte des Eidg. Departementes für Umwelt, Verkehr, Energie und Kommunikation (UVEK).

²⁶ Procedure to be adopted following consultation on the DETEC document on forest policy.

6 Members of the Swiss NFP Forum

Berger, Michèle	Member of the Council of States**, Neuchâtel
Binder, Max	Member of the National Council*, Zurich; Central President Swiss Forest Owners Association (WVS)
Bolliger, Hans-Jürg	Swiss Olympic Association (SOA)
Bötsch, Manfred	Director of the Federal Office for Agriculture (FOAG)
Broggi, Mario	Director of the Swiss Research Institute for Forest, Snow and Landscape (WSL)
David, Eugen	Member of the Council of States**, St Gallen; President Fonds Landschaft Schweiz (Swiss Landscape Foundation)
Egger, Thomas	Director Joint Working Group for the Mountain Regions
Engler, Stefan	Cantonal Minister Grisons; President Conference of Cantonal Forest Directors
Epiney, Simon	Member of the Council of States**, Valais
Ganz, George	Director Conference of Directors of Construction, Planning and Environmental Protection
Gossweiler, Conrad	Director of LIGNUM
Haering-Binder, Barbara	Member of the National Council*, Zurich
Kasper, Heinz	President of Swiss Forest Association
Mosimann, Emil	President of Association of the Swiss Timber Industry
Müller, Hansruedi	Professor, Research Institute for Leisure and Tourism, University of Bern
Oettli, Damian	WWF Switzerland
Pedrini, Franco	President of Swiss Foresters' Association
Rodewald, Raimund	Director of Landscape Protection Foundation
Rumley, Pierre Alain	Director of the Federal Office for Spatial Development (OSD)
Schärer, Hans Ulrich	Sector Director, Federal Office for Energy (FOE)
Scheidegger, Eric	Ambassador, Executive Committee, State Secretariat for Economic Affairs (seco)
Strauss, Ulrich	Director of the Planning Office, Canton of St Gallen
Teuscher, Franziska	Member of the National Council*, Bern
Weyeneth, Hermann	Member of the National Council*, Bern; representative of forest owners
Wiss, Pius	President of Association of Swiss Forest Enterprises
Wüest, Josef	Vice-Director Swiss Farmers' Association (SBV)
Wüest, Otmar	President Conference of Cantonal Forest Inspectors
Zimmermann, Willi	Professor of Forest Policy and Forest Economics, ETH Zurich

* Lower chamber of the Swiss Parliament ** Upper chamber of the Swiss Parliament

7 Key questions raised by the Swiss NFP working groups

“Forest area” working group	How much forest does Switzerland want and where should it be located?
“Forest protection” working group	What represents a threat to the forest and what protection does the forest require to be able to provide the services expected of it?
“Wood utilization” working group	How can the volume of wood harvested in Swiss forests be increased (supply and demand)?
“Biodiversity” working group	What natural biodiversity or biodiversity resulting from human influence should be conserved and promoted using public money?
“Protective forest” working group	How can the protective effect of the protective forest be guaranteed to ensure the protection of human life and important material assets?
“Economic viability of forest operations” working group	What forest management structures are necessary to ensure the optimal provision of both public and private services?
“Recreation and leisure” working group	To what extent should the recreational forest in Switzerland be managed? What are the limits to management in this area?
“Education and training” working group	What kind of modern education and further training system can ensure the provision of the qualifications necessary for sustainable forest management?

8 Members of the Swiss NFP working groups

Forest area working group

Surname	First name	Function	Employer
Manser	Rolf	Head of working group	SAEFL, Swiss Forest Agency, Bern
Rohner	Jürg	Working group facilitator	Non Pro Cons, Basel
Huber	Stefan	Reporting	BHP Bruggler und Partner AG, Zürich
Beeli	Gaudenz	Municipal President	Municipality of Flims
Berger	Hanspeter		Federal Office for Agriculture (FOAG), Direct Payments Department, Bern
Camenzind	Reto	(from 2003)	Federal Office for Spatial Development (OSD), Bern
Delucchi	Marco	Division manager	Cantonal forest division, Ticino, Bellinzona
Kamber	Evelyn		Pro Natura Schweiz, Basel
Magnin	Georges	President	Forest Owners Association Fribourg, Broc
Meier	Heinz	(to end of 2002)	Federal Office for Spatial Development (OSD), Bern
Morier	Alain	Cantonal forester	Forestry Department, Office for Landscape and Nature, Zurich
Muggli	Rudolf	President	Schweizerische Vereinigung für Landesplanung, Bern
Schmid	Silvio		SAEFL, Swiss Forest Agency, Bern
Stalder	Andreas	Sector Head	SAEFL, Nature + Landscape, Bern
Teutsch, Dr	René	Director	Swiss Association for Sand and Gravel, Bern
Zimmermann, Professor	Willi		Chair of Forest Policy and Forest Economics, ETH Zurich

Forest protection working group

Surname	First name	Function	Employer
Volz, Dr	Richard	Head of working group	SAEFL, Swiss Forest Agency, Bern
Cavelti	Guido	Working group facilitator	BHP Bruggler und Partner AG, Zürich
Koller	Cécile	Reporting	BHP Bruggler und Partner AG, Zürich
Covi	Silvio	Regional forester	Forestry Department 1, Lucerne
Flückiger, Professor	Walter		Institute for Applied Plant Biology, Schönenbuch
Hefti	Reto		Forestry Office, Graubünden, Rheintal/Schanfigg, Tamins
Holdenrieder, Professor	Ottmar	Chair	ETH Zurich, Chair of Forest Protection and Dendrology
Huber	Barbara		
Nigg	Heinz		East Switzerland Branch of WildArk, Buchs SG
Schnidrig-Petrig, Dr	Reinhard	Deputy Head, Wildlife Sector	SAEFL, Swiss Forest Agency, Bern
Weibel	Franz	Forest Inspector	Civic Community Bern
Zahn	Christoph		SAEFL, Swiss Forest Agency, Bern

**Forest protection:
“Soil/air” sub-working-
group**

Surname	First name	Function	Employer
Volz, Dr	Richard	Head and facilitator of the working group	SAEFL, Swiss Forest Agency, Bern
Koller	Cécile	Reporting	BHP Brugger und Partner AG, Zürich
Achermann	Beat		SAEFL, Department of Air Pollution Control, Bern
Blaser, Dr	Peter		Swiss Federal Institute for Forest, Snow and Landscape Research (WSL), Birmensdorf
Borer, Dr	Franz		Department of Soil Protection, Cantonal Office for the Environment, Solothurn,
Flückiger, Professor	Walter		Institute for Applied Plant Biology, Schönenbuch
Weibel	Franz	Head Forester	Civic Community Bern
Winkler	Martin	Forest Inspector	Cantonal Forest Service, Zug

**Forest protection:
“Harmful organisms” sub-
working group**

Name	Vorname	Funktion	Firma
Surname	First name	Function	Employer
Volz, Dr	Richard	Head and facilitator of the working group	SAEFL, Swiss Forest Agency, Bern
Huber	Stefan	Reporting	BHP Brugger und Partner AG, Zürich
Covi	Silvio	Regional forester	Forest Department 1, Lucerne
Engesser, Dr	Roland	Head phytosanitary monitoring and reporting service	Swiss Research Institute for Forest, Snow and Landscape (WSL), Birmensdorf
Gonseth, Dr	Yves		Swiss Centre for the Cartography of Fauna (CSCF), Neuchâtel
Holdenrieder, Professor	Ottmar	Director	ETH Zurich, Chair of Forest Protection and Dendrology
Lambert	Alain		Forest and Wildlife Service, Fribourg, Givisiez
Zahn	Christoph		SAEFL, Swiss Forest Agency, Bern

**Forest protection:
“Forest-Game”
sub-working group**

Surname	First name	Function	Employer
Schnidrig-Petrig, Dr	Reinhard	Head of working group (from July 2002)	SAEFL, Swiss Forest Agency, Bern
Volz, Dr	Richard	Working group facilitator	SAEFL, Swiss Forest Agency, Bern
Huber	Stefan	Reporting	BHP Brugger und Partner AG, Zürich
Baumann	Martin		Department of Hunting and Fishing, Canton of Solothurn
Hefti	Reto		Forest Office, Canton Graubünden Rheintal/Schanfigg, Tamins
Huber	Barbara		
Kern	Hanspeter	Municipal President	Municipality of Buchberg
Nigg	Heinz		East Switzerland Branch of WildArk, Buchs, St Gallen

**Wood utilization
working group**

Surname	First name	Function	Employer
Zanetti, Dr	Marco	Head of the working group	SAEFL, Swiss Forest Agency, Bern
Hofer	Peter	Facilitation and reporting	GEO Partner AG, Zürich
Amstutz	Urs	Director	Swiss Forest Owners Association (WVS), Solothurn
Krebs	Barbara		Cantonal Office for Forests Bern
Riegger	Werner	Director	Schweiz. Interessengemeinschaft Industrieholz, Riegger GmbH, Zürich
Starck	Christoph	Director	Starck & Partner, wood 21 programme, Zurich
Streiff	Hansruedi	Director	Swiss Wood Industry, Bern
Zeltner	Stefan	Timber market expert	Swiss Forest Owners Association (WVS), Solothurn (G), Trin (P)

**Biodiversity
working group**

Surname	First name	Function	Employer
Bolliger, Dr	Markus	Head and facilitator of the working group	SAEFL, Swiss Forest Agency, Bern
Anderegg	Rolf	Reporting	SAEFL, Swiss Forest Agency, Bern
Schnidrig-Petrig, Dr.	Reinhard		SAEFL, Swiss Forest Agency, Bern
Duelli, Professor	Peter	Head of Biodiversity Department	Swiss Federal Institute for Forest, Snow and Landscape Research (WSL), Birmensdorf
Gmür	Philippe		Etat de Vaud, Conservation de la nature, KBNL, St-Sulpice
Kohli, Dr	Erich		SAEFL, Nature + Landscape, Species and Biotope Protection
Müller	Werner	Director	SVS Birdlife Switzerland, Zurich
Murri	Marcel		Forest Department, Canton of Aargau, Coordination and Ecology Section, Aarau
Schütz, Professor	Jean-Philippe	Director	ETH Zürich, Chair of Silviculture
Werlen	Christian	Service head	Forest and Landscape Service, Canton of Valais, Sion

**Protective forest
working group**

Surname	First name	Function	Employer
Greminger, Dr	Peter	Head of the working group	SAEFL, Swiss Forest Agency, Bern
Geelhaar, Dr	Michel	Facilitation and reporting	BHP Brugger und Partner AG, Zürich
Huber	Stefan	Reporting	BHP Brugger und Partner AG, Zürich
Bieger, Professor	Thomas		University of St Gallen, Institute for Public Services and Tourism
Bugmann, Professor	Harald	Group Head	ETH Zurich, Assistant Chair of Mountain Forest Biology
Combe, Dr	Jean		FNP-Antenne romande, Lausanne

Emmenegger	Josef	Mayor	Municipal administration Flühli
Furrer	Heiner	Director	Swiss Federal Railways (SBB) Track Construction and Management, Lucerne
Heinimann, Professor	Hans Rudolf	Director	ETH Zürich, Chair of Forest Engineering
Kaufmann-Hayoz, Professor	Ruth		Interfaculty Coordination Office for General Ecology (IKAÖ), University of Bern
Lienert	Peter	Cantonal Forest Inspector	Office for Forest and Landscape, Canton of Obwalden, Sarnen
Lüscher, Dr	Felix	Operations manager	Oberallmeindkorporation Schwyz (OAK)
Métral	Roland	President	Mountain forest maintenance group, Arrondissement VIII, Valais, Martigny
Püntener	Peter	Cantonal engineer	Uri Office for Construction, Altdorf
Rageth	Magnus		Forest Office, Canton Graubünden, Rheintal/Schanfigg, Tamins
Rageth	Thomas	President	Natural hazards forestry working group (FAN), Glarus
Sartori	Fulvio	Vice-Director	Swiss Funicular Association, Bern
Thormann	Jean-Jacques		SAEFL, Swiss Forest Agency, Bern

Economic viability of forest operations working group

Surname	First name	Function	Employer
Zbinden	Manfred	Head and facilitator of the working group	SAEFL, Swiss Forest Agency, Bern
Cavelti	Guido	Reporting	BHP Bruggler und Partner AG, Zürich
Amstutz	Urs	Director	Swiss Forest Owners Association (WVS), Solothurn
Böhi	Kaspar		Private forest owner, Bürglen, Thurgau
Hostettler	Martin		Swiss Forest Association, Forest and Wood Sector Working Group, Bern
Jacquiard	Claude		Mayor of the municipality of Corserey, President of the Corporation of Triage Sarine Ouest
Lienhard	Fredy	Operating manager	Teaching and Research Forest on Mount Uetliberg, Uetikon Waldegg
Schmidhauser, Dr	Albin		Forest Department 2, Canton of Lucerne, Hochdorf
Stübi	Anton		Federal Office for Agriculture (FOAG), Structural Improvements Department, Bern
Wiss	Pius	President	Association of Swiss Forest Enterprises (VSF), Dietwil
Zimmermann	Daniel	Head of Service	Forest, Wildlife and Nature Service of the Canton of Vaud, Lausanne

**Recreation and leisure
working group**

Surname	First name	Function	Employer
Suter Thalmann	Claire-Lise	Head of working group	SAEFL, Swiss Forest Agency, Bern
Cavelti	Guido	Working group facilitator	BHP Brugger und Partner AG, Zürich
Koller	Cécile	Reporting	BHP Brugger und Partner AG, Zürich
Bernasconi, Dr.	Andreas		PAN Büro für Wald und Landschaft, Bern
Binggeli	Jacques	Inspector	Cantonal Arrondissement 2, Vaud, Bex
Buffi, Dr	Roberto	District engineer	District 8 Forest Office, Ticino, Locarno
Laesser, Dr	Christian	Vice-Director	University of St Gallen (HSG), Institute for Public Services and Tourism
Loup, Dr	Bernard		Canton of Fribourg Office of Construction and Spatial Management
Müllli	Daniel		Mountain Wilderness, Backpack School, Zurich
Rudin	Denise	Director of focus programme "movement, nutrition, relaxation"	Health Promotion Switzerland, Bern
Rusterholz, Dr	Hans-Peter		University of Basel, Institute for Nature, Landscape and Environmental Protection
Seeland, Professor	Klaus		ETH Zürich, Department of "Urban Forestry, Chair of Forest Policy and Forest Economics"
Von Ballmoos	Maria	Member of the Cantonal Parliament, Director of Forests Davos	
Wenk	Daniel	President of the WVS (BS + BL)	Forest Operations Bennwil BL
Wolf	Brigitte	Commission on Orientiereing and the Environment	Swiss Orientiering Association, AfW Committee, Bitsch, Valais
Wyder	Rita		SAEFL, Nature + Landscape, Bern

**Education and training
working group**

Name	Vorname	Funktion	Firma
Surname	First name	Function	Employer
Büchel	Martin	Head of the working group	SAEFL, Swiss Forest Agency, Bern
Bernasconi, Dr	Andreas	Reporting and facilitation	PAN Büro für Wald und Landschaft, Bern
Bachmann	Rudolf		Association of Swiss Forest Enterprises (VSF), Steinhausen
Egloff	Hanspeter		Association of Swiss Forest Owners (WVS), Solothurn

Jacobi	Claudia		SAEFL, Swiss Forest Agency, Bern
Hitz	Andreas	Delegate	Association of Swiss Forest Enterprises (VSF), Zizers
Holdenrieder, Professor	Ottmar	Director	ETH Zurich, Chair of Forest Protection and Dendrology
Nipkow	Fredy	Director	SILVIVA, Environmental Education and Forests, Zurich
Rechsteiner	Karl	Director	Forest Education Centre, Maienfeld
Riva	Fausto		Cantonal Forest Section, Ticino, Bellinzona
Schmidtke, Dr	Hubertus		Silvaconsult AG, Winterthur

9 Comments and position papers

The Swiss NFP Project Management received written submissions from the following organizations and associations in the course of the project:

Swiss Forest Association (SFV), Association of Swiss Foresters (VSF)	02.12.02
Pro Natura	18.02.03
Conference of Heads of Cantonal Forest Services (18.02.03)	12.03.03
Conference of Cantonal Forest Directors	08.04.03
Pro Natura, SVS BirdLife Switzerland, Swiss Foundation for Landscape Protection, WWF Switzerland	20.05.03
Pro Natura, SVS BirdLife Switzerland, WWF Switzerland	03.06.03
PRO ENGADINA BASSA – Gruppa da God	10.06.03
City of Neuchâtel	12.06.03
SAEFL, Nature + Landscape Division	01.07.03
Association of Swiss Forestry, Association of the Swiss Wood Industry, Lignum, Swiss Farmers' Association (SBV), Association of the Swiss Forest Owners (WVS)	01.07.03
Swiss Forest Association, Association of Swiss Foresters	04.07.03

In addition to the comments submitted by the Conference of Cantonal Forest Directors and the Conference of Heads of Cantonal Forest Services, the regional groups of the Conference of Heads of Cantonal Forest Services and individual cantons made a total of twelve further submissions. The Project Management received 40 other comments and submissions from interested individuals. Position papers were also compiled by various associations and organizations dealing with forest policy in general as opposed to the Swiss NFP in particular:

Swiss Forest Association, Association of Swiss Foresters	30.08.02	Braunwald Declaration on the Conservation and Promotion of the Swiss Mountain Forest
Swiss Joint Working Group for the Mountain Regions	30.08.02	Resolution Mountain Forest as an Integral Component of Regional Development
European Forest Commission	18.09.02	Final resolution of the 23 rd Conference of the "Working Party on the Management of Mountain Watersheds"
Swiss Forest Association	Jan. 03	Position paper: Examination of Swiss Forest Conservation Policy
Swiss Forest Owners Association (WVS)	Jan. 03	Eight theses on a forest sector that is viable for the future

Various official reactions to these position papers were also published:

Swiss Olympic Association	06.02.03	SFV position paper 12.02
Chambre romande des ingénieurs forestiers indépendants (CRIFOR)	01.04.03	Confederation's Budgetary Relief Programme
Association Neuchâteloise des Gardes Forestiers (ANGF)	24.04.03	WVS's 8 theses
Associazione forestale ticinese (FORESTAVIVA) Beschluss vom 08.05.03	03.06.03	WVS's 8 theses

10 Dialogue with interest groups

The Swiss NFP Project Management was able to inform the following organizations and institutions about the Swiss NFP process and discuss its content:

Annual General Meeting Swiss Forest Association (SFV), Herisau	21.09.01
19 th forestry coordination discussions, Bern	25.10.01
Annual meeting SFA and ETH professors, Zurich	03.12.01
Commission of the Timber Market, Bern	23.01.02
20 th forestry coordination discussions, Bern	12.03.02
Wood21 steering committee, Bern	21.03.02
Annual General Meeting Swiss Forest Association, Braunwald	29./30.08.02
Annual General Meeting Swiss Joint Working Group on Mountain Regions, Murten	30.08.02
Forest Summit I, SFV, VSF, Birmensdorf, Lyss, Maienfeld	16.10.02
21 st forestry coordination discussions, Bern	24.10.02
Conference of Cantonal Forestry Directors, Herisau	08.11.02
Conference of Directors of Education, Lucerne	21./22.11.02
Conference of the Confederation for Spatial Development, Bern	26.11.02
Events involving the cantonal forest services	09.12.02
Conference of Heads of Cantonal Forest Services	18.02.03
Environmental organizations	03.03.03
Meeting of the presidents of associations of cantonal foresters, Olten	07.03.03
Swiss Society for Agronomy Rapperswil	28.03.03
Conference of Cantonal Forest Directors, Bern	04.04.03
Swiss Commission for Avalanches and Rockfall, Bern	08.05.03
Forest Summit II SFV, VSF, Birmensdorf, Lyss, Maienfeld	14.05.03
SIA Forest Expert Group, Yverdon	16.05.03
KBNL, Olten	21.05.03
holz21 steering committee, Bern	05.06.03
Commission of the Timber Market, Bern	16.06.03
Forest and timber, climate, mountain regions parliamentary groups Bern	18.06.03
Environmental associations	25.06.03
Forestry fair, Lucerne	21.–25.08.03
Conference of Heads of Cantonal Forest Owners Associations, Solothurn	08.09.03
UREK-N, Zurzach	27.10.03
Swiss Wood Industry, Kriegstetten	31.10.03
Conference of Cantonal Forest Directors, Schaffhausen	07.11.03
Conference of Heads of Cantonal Forest Services, Bern	07.11.03
Swiss Forest Owners Association, Appenzell/Speicher	08.11.03

Information about the Swiss NFP was presented at international level on the following occasions:

NFP working group, Riga (Lettland)	24.–26.04.02
Urban Woods for People, Paris	25.–27.11.02
EFNS (European Foresters' Competition in Nordic Skiing), Glurigen, Goms	06.03.03
Forest-Dialog, inaugural event, Vienna	09.04.03
Canadian forest delegation from the region of Bas-St-Laurent; Lyss	13.11.03

11 The Swiss forest in numbers

Forest area (2001)	12'192 km ² = 30% of Switzerland's national territory
Productive forest area (2001)	approximately 10'750 km ² = approximately 88.2% of the total forest area
Increase in forest area over the past decade	average for Switzerland = approximately 4% (0.5% in the Central Plateau, 7.6% in the Alps)
Ownership structure	Public forest: 73% Private forest: 27%
Distribution of tree species	Based on the number of stems: 60% coniferous trees, 40% deciduous trees
Growing Stock (1995)	approximately 367 m ³ /ha
Increment (2003)	7 million m ³ /year (commercially exploitable)
Wood harvest (average)	approximately 4.5 million m ³ /year
Wood consumption (average)	approximately 7 million m ³ /year (roundwood equivalent)
Wood imports (average)	approximately 7 million m ³ /year (roundwood equivalent)
Wood exports (average)	approximately 4.5 million m ³ /year (roundwood equivalent)
Species diversity	The forest provides a home for around 70% of Switzerland's approximately 50'000 animal and plant species. Of the 58 forest dwelling bird species, 7 (=12%) are classified as endangered. 8% of the forest plants are endangered or extinct.
Strictly protected forest areas (2002)	1.1% of total forest area
Condition of the forest	18.6% of trees have crown defoliation exceeding 25%, the cause of which is unknown (2002)
Forest stand stability "reduced" to "critical" (1995)	approximately 5900 km ² = approximately 50% of total forest area
Contaminant pollution	Exceeding critical threshold levels: Nitrogen: in 75% to 90% of the forest area (1993–1995) Acid: in around 60% of forest area (1986–1990)
Forest road density	Switzerland: 2.6 km/km ² Jura: 3.9 km/km ² Central Plateau: 5,8 km/km ² Lower Alps: 1,6 km/km ² Alps: 1,1 km/km ² ; Southern Alps 0,8 km/km ²
Forest access	8.1% of accessible forest area >1000 m from a forest road and 39% <100 m from a forest road.
Inaccessible forest area	27% of total forest area
Number of forest operations in the forest sector (2002)	2930 public forest operations 245'000 private forest owners
Number of operations in the forest sector (2001)	12'538
Employees in the forest sector (2000)	7277, of which 5321 are employed in public forest operations, 1956 in private forest operations

Employees in the wood sector (2001)	87'355		
Size of public forest operations	68% of operations <200 ha 18% of operations between 201 and 500 ha 14% of operations >501 ha		
Number of visits made to the forest in summer	Almost daily 14%; 1–2x/week 44%; 1–2x/month 29% (1999)		
Forest subsidies provided by the Swiss Confederation (in million CHF)		<u>1999</u>	<u>2002*</u>
	Forest maintenance (incl. protective forest)	86.8	135.6
	Structural improvements	<u>29.2</u>	<u>23.3</u>
	Total	116.0	158.9
	* (including special payments related to Storm Lothar)		

12 The challenges arising in the different focus areas

Forest area

- Overall increase in forest area.
- Areas with increasing forest area (and a declining ingrowth rate): increase due to the abandonment of agricultural activity in inaccessible and previously extensively farmed areas in the hill/mountain regions, in particular. Possible slow-down in this trend due to the increase in organic farming which requires more land.
- Regions whose forest area remains more or less constant: increasing differentiation of the landscape. Concentration of forest areas (clearing of the landscape, threat to ecological networks and division of the landscape)
- Regions with decreasing forest area: increasing settlement pressure and pressure from infrastructure development (modes of transport).
- The forest legislation is a forest conservation law and does not tackle the issue of areas in which the forest is expanding. Uniform legislation for all of Switzerland does not adequately take variations in development in different locations into account.
- Forest area is dependent on exogenous factors (spatial planning, agriculture, exploitation of raw materials).
- Uniformization of the landscape means a loss of structural diversity.
- The possibilities for modifying the distribution of forests are very limited (long-term duration of forest development, lack of space).

Forest protection

- The concept of forest damage will change. How will damage be defined in the future?
- The vulnerability of the forest is increasing as is the level of damage to which it is subjected. Some unresolved issues concerning forest damage need to be tackled:
 - habitats for wild animals;
 - infestation by harmful organisms;
 - soil acidification/compaction.
- Climate change and environmental impacts create new potential risks.
- The risk of proliferation and introduction of harmful organisms is increasing.
- The decline in the social acceptance of hunting and reduction in hunting activities → increased damage to trees caused by game.
- Increasing dissection of the landscape → isolation of species → interruption of gene flow.
- Localized soil compaction as a result of the increasing mechanization of wood harvesting.
- Reduction in funding available for forest protection measures:
 - funding of forest protection only available for selected forest functions;
 - incentives place a one-sided emphasis on wood harvesting which does not always translate into the effective use of resources.

Wood utilization

- Possible macro trends at European level could have different effects on Switzerland – depending on how Switzerland reacts to these changes:
- An “accelerated shift towards increased environmental protection” could mean a gain in terms of international competitiveness as a result of other countries placing similar emphasis on requirements in the area of environmental protection, biodiversity and close-to-nature forest management to that already given to these issues in Switzerland.
- A “shift towards sustainable energy use” would mean greater competitiveness in the area of substitute energy products. Thus, wood energy would gain ground against energy generated from fossil fuels.
- An “increased acceptance of economic integration and market deregulation” will force the sector to implement structural adaptations and embrace a significantly higher level of innovation. However, Switzerland’s competitiveness is threatened by products from low-wage economies (in particular transition countries).
- Unfavourable general operating conditions (i.e. land prices, environmental regulation, transport/ heavy traffic levy, strong competition from wood imports and other materials).
- Restrictive regulations in the area of construction and fire-safety make it more difficult to use wood, particularly in construction.
- Weaknesses in the wood processing chain (stagnant processing capacities, insufficient innovation, insufficient profit and capital, complex sectoral structure with numerous small companies).
- Deficit in terms of technological expertise (the transfer of knowledge and technology between research and practice only works sporadically; there is a decline in wood research at the level of the institutes of technology (ETH); to a certain extent there is a lack of understanding of the need for further training in the sector).
- Insufficient added value, in particular in the area of the harvesting and processing of deciduous wood.

Biodiversity

- The forest is expanding – particularly in the mountain regions – at the cost of biologically valuable ecosystems, e.g. wooded pastures.
- The considerable number of forests subject to little or no management has a negative affect on biodiversity in the short to medium term, but a positive effect in the long term.
- Increasing pressure arising from the pursuit of leisure activities – even in remote forests – causes disturbances to the habitats of sensitive flora and fauna.
- Climate change and anthropogenic pollution also have a negative effect on biodiversity.
- The conservation of biodiversity is only partly guaranteed: the living conditions of many species are deteriorating, local populations are declining or dying out. Causes:
 - loss of species-rich forest types and management forms;
 - Decreasing light penetration and increasing structural uniformity;
 - lack of variety of tree species and not site-adapted tree species
 - too little old and dead wood in some areas;

- forest edges lacking in variety;
- lack of interconnection of forests and forest biotopes;
- increasing disturbances.
- Strategic deficits: a comprehensive programme with concrete objectives and instruments for biodiversity in Switzerland, in general, and in the forest, in particular.

Protective forest

- The increasing demands on the forest mean that the protective forest faces additional challenges.
- The decline in inter-regional solidarity with regard to providing funding to compensate for the geographical disadvantages in the mountain region is accompanied by a simultaneous increase in safety and protection requirements.
- The population remains unaware of the need to maintain the protective forest.
- Forest owners can no longer bear the cost of providing protection and show an increasing lack of interest in maintaining the protective forest.
- Protection issues are being neglected as a result of the depopulation of the mountain regions.
- The protective forest will become destabilized in the absence of a minimum level of maintenance and reduction of the growing stock → the protective forest will itself represent a threat → potential damage to the image of the protective forest.
- The current and future level of protection is under threat: the regeneration of the forest is not guaranteed (too little regeneration area), damage, game damage.
- Protective forest maintenance is under pressure for financial reasons.
- Hitherto, the development of mountain regions and the accompanying use of public money was very much sector-oriented. There was little or no incentive to adopt coordinated and integrated approaches. The small-scale structure of the forest sector also represents an obstacle to integrated planning.
- It is difficult to market the non-material services of the mountain forest.
- There are no incentives for inter-company cooperation and development of local value chains.
- Traditional structures make it difficult to develop the distribution of tasks between the Confederation and the cantons.
- Third-level research does not engage sufficiently with the issues surrounding the future of the mountain regions.

Economic viability of forest operations

- Wood prices remain low (insufficient processing capacities in Switzerland, global surpluses).
- Globalization is generating pressure on sawmills to adapt to new market conditions; as a result the requirements of forest operations are also changing.
- The pressure to rationalize and use new technologies in wood harvesting continues to increase.
- The framework conditions for the forest sector are changing (new subsidy mechanism) and prompting structural changes in the forest sector as a result.
- Private forest enterprises are assuming a more important role as they allow the public forest operations to fulfil their objectives better.

- It is almost impossible for wood harvesting to cover its costs with the existing processes and organizational forms.
- The combination of private markets and public goods (subsidies) is creating false incentives for wood production.
- False incentives, lack of flexibility and the predominance of individual interests make it difficult to implement change.
- The prevailing situation is characterized by a mixture of state and private-sector tasks; clear objectives and priorities have not been defined.
- The distribution of competencies and responsibilities between the Confederation/cantons/municipalities (forest operations) is unclear and inefficient.
- Efficient wood harvesting and the use of modern harvesting technologies is often hampered by topography and small-scale distribution of forests.
- Insufficient entrepreneurial spirit, lack of business knowledge and accounting transparency, over-capacity in public forest operations.
- Public forest owners are not primarily motivated by profit and forestry is no longer their core business.
- Insufficient demand from the wood sector.

Recreation and leisure

- Increasing interest in the forest as a venue for leisure activities; the future structure of society (demographic development, proportion of immigrants) will have a significant influence on the use of the forest.
- Increasing diversification of leisure activities; activities involving both intensive and extensive use of the forest are on the increase.
- Urban and rural forests are under additional pressure with intensification of activities in forests that are already accessible and penetration of previously inaccessible areas.
- Tourism infrastructure is increasingly located in forest areas.
- Fashionable activities and the number of non-organized users are on the increase and difficult for forest experts to reach.
- Conflicts between forest users are becoming more common.
- The pressure arising from the intensive and extensive use of the forest in urban and rural areas is increasing.
- Forest experts are facing new problems and requirements and are unable to deal with them adequately.
- Due to the general right of access to the forest, forest owners provide certain services free of charge and there is little willingness among beneficiaries to pay for these services.
- Many recreational users are not organized and difficult for forest experts to reach. Thus, they can only react to fashionable new activities when they have already caused damage.
- The costs arising from leisure activities are not defined in accountancy terms.
- Up to now there has been no policy concerning the recreational function of the forest, and no corresponding education and further training.
- Insufficient communication between the actors (beneficiaries, forest owners, managers, administrators), increasing conflicts.

Education and training

- Increasing pace of social change; need for ongoing adaptation of skills and competencies (further training continues to gain in significance).
- Increasing shift in tasks in educational operations, private operations also playing a greater role in education and training.
- Increased involvement of forest employer organizations in forest education.
- Increase in the importance of virtual education.
- Training of new forest experts at the technical colleges (FHS).
- Increasing internationalization of forest education.
- Partial lack of specialized knowledge; the involvement of forest circles in education remains insufficient at times.
- Inadequate opportunities for the development of forest professions in the professional environment.
- Forest owners do not pay sufficient attention to educational tasks.
- Current changes in the professional field (e.g. through changes in operating structures) prompt changes in the forest education requirements.

13 Principles

The sustainable management of the forest must take the three dimensions of sustainability (economic, ecological and social) equally into account. This necessitates rules that help to achieve a balance between the different requirements.

The biodiversity strategy and ecological standard are merely part of a comprehensive concept of forest management that also incorporates economic and social issues. Social sustainability is already largely guaranteed in the context of various legal provisions.²⁷ In terms of the Swiss NFP, the Confederation has concretized this dimension in the form of social principles. With respect to the economic dimension, it is primarily up to the state to create a framework that will facilitate economic activity. The most important principles involved here are also enshrined in economic principles. The defined social and economic principles should act as a guideline for state subsidy activities and thus trigger the desired effects among the actors.

Economic principles

Criterion	Indicator
1. Economic viability	<p>1.1 Market forces can operate on the basis of economic freedom and the right to own property. Within the context of their social obligation, the actors in the forest sector work on a largely commercial basis: this obligation involves the implicit acknowledgement of certain well defined rights of the public to use the forest.</p> <p>1.2 The public services required by society are provided by the least expensive provider at the desired level of quality and efficiency; the latter is paid for providing these services. The service users are involved in the finance and decision-making processes in accordance with the Principle of Equivalence.</p>
2. Subsidiarity	<p>2.1 The principle of subsidiarity applies: the higher levels of the state only become involved when the lower levels are unable to implement the relevant functions. This principle also applies to the relationship between the state and the private sector.</p>

²⁷ These include, for examples, the work safety regulations, Art. 699 ZGB (Swiss Civil Code) regarding the right of access to the forest, equal opportunities for the sexes etc.

3. Subsidy mechanism	<p>3.1 The subsidy and payment mechanisms are based on the desired services and effects as opposed to costs.</p> <p>3.2 The general conditions and subsidy mechanisms give rise to the minimum possible market distortion. The indemnification of public services does not have a negative effect on the production of services in the private sector.</p> <p>3.3 The cost/benefit ratio of the measures implemented is acceptable in terms of cost-effectiveness. The cost-effectiveness of measures implemented is examined periodically.</p> <p>3.4 Actors who are unable to survive on the market are not artificially sustained in the long term by federal subsidies.</p>
4. Efficiency through transparency	4.1 The actors in the forest and wood sector quantify their services on the basis of regional, national and international comparative values.

Social principles

Criterion	Indicator
1. Welfare	<p>1.1 Work safety and the quality of employment are guaranteed in accordance with the regulations in force. Employees have a high level of professional competency.</p> <p>1.2 Significant importance is attached to the regional potential of forests (generation of revenue). In conjunction with the relevant local and regional employment cycles, they lead to the enhanced welfare of the local and regional communities.</p> <p>1.3 Fair working conditions are guaranteed. Men and women have equal opportunities in terms of both recruitment and remuneration.</p>
2. Ownership and third-party use	<p>2.1 The institutional guarantee of ownership is guaranteed in accordance with the “ecological standard” and the agreed public services.</p> <p>2.2 Free access to the forest and use of the beneficial services provided by the forest are guaranteed.</p>
3. Participatory forest policy and its implementation	<p>3.1 The legal bases necessary for the involvement of stakeholders exist.</p> <p>3.2 Stakeholders and the population are involved in the planning, decision-making and implementation processes.</p>

14 Keys: correspondences between the final report and findings of the working groups

	Formulation of objective in accordance with the Swiss NFP final report	Source (cf. thematic overview sheets)
Priority objectives	The services of the forest in protecting the population and infrastructure (settlements, railways, roads etc.) are guaranteed sustainably and consistently throughout Switzerland.	Objective 12
	The plants and animals that live in the forest as well as the forest as an ecosystem are conserved. Species that are naturally common in Switzerland remain common, species that have become rare become more common again, and there is an increase in ecologically valuable tree species. The forest is allowed to develop naturally within a representative area (strictly protected forest areas, islands of old growth, dead wood).	Objectives 10 and 11
	Forest soils, trees and drinking water are not at risk from the input of contaminating substances, inadequate management and the corresponding physical effects.	Objective 4
	The increased demand for wood and wood products in all application areas leads to increased added value and a better CO ₂ balance for Switzerland. The contribution of wood to the improvement in the CO ₂ balance is rewarded through economic incentives. The companies involved in the wood chain are more productive, innovative and thus more competitive.	Objectives 7 and 8
	The optimization of the distribution of tasks and structures in the forest sector leads to greater efficiency. This results in the improvement of the economic viability of forest operations.	Objective 9
Additional objectives	The existing spatial distribution of the forest will be conserved and there will be no reduction in forest area.	Objective 1
	The service provided by the forest in relation to the CO ₂ balance will be recognized in terms of compliance with the Kyoto Protocol.	Objective 1
	The forest contributes significantly to the conservation of landscape diversity.	Objective 2
	The forests are interconnected and dovetailed with the grassland by means of ecologically improved forest edges.	Objective 3
	The forest is protected against the introduction of potentially harmful organisms. Damage by such organisms will not exceed an acceptable level in view of the provision of forest services.	Objective 5
	The forest provides adequate and quiet living space for game. The game stocks are adapted to their habitats and have a natural age and sex distribution. Natural forest regeneration is not hindered by ungulates.	Objective 6
	Recreational and leisure activities in the forest are controlled to promote the conservation of the forest. Forests near urban agglomerations are managed with the priority service of recreation and leisure in mind and this reduces the burden on other forest areas.	Objective 14
	The forest education system guarantees high-quality expert and management competencies for the activities carried out in and on behalf of the forest. Research develops scientific bases and target-oriented methods for the resolution of problems.	Objective 15

Formulation of measures in accordance with the Swiss NFP final report	Source (cf. thematic overview sheets)
1. Definition of the priority services “protective forest” and “biodiversity” and their indemnification during planning (instrument: programme agreement in accordance with the NFA).	9b2, 9c1, 9c2, 11a2, 12a1
2. Promotion of region-specific programmes for the ecological improvement of forest edges, for the creation of quiet zones for fauna in areas of high ecological value, to increase quantities of dead wood, for the interconnection of habitats, for the definition of protected forest areas and for the continued practise of traditional forms of management.	11a2
3. Guaranteeing of a minimum level of protective forest maintenance and rectification of maintenance deficits as part of a national protective forest programme.	12a1, 12a2
4. Pilot projects and creation of incentives for new structures based on integrated natural hazard risk management (business structures, centres of competency, innovative organizational models).	12c1, 12c2, 12f2, 12f3
5. Legislative definition and implementation of an ecological standard for forest management.	4c1, 11a1
6. Development and implementation of specific promotion and genetic conservation programmes for priority species (including identification of priority species).	10a1, 10a2, 10a3
7. Identification of the extent of damage caused by airborne pollution and its impact on the forest. Efforts to reduce the level of contamination in excessive cases.	4a2, 4a3
8. Identification of sensitive and polluted locations and provision of bases and target agreements for the special management of sensitive and polluted locations.	4b1, 4b2
9. Identification of soil compaction and, where necessary, measures to improve compacted soils.	4c2
10. Campaigns to raise awareness of the potential for change (opportunities in the forest sector) among important target groups, such as municipal managers, managers of forest operations, opinion leaders etc.; creation of a clear understanding of paradigm shift within the sector: the Confederation, cantons, municipalities, educational institutions take a stand for the forest sector.	9a1
11. Provision of business models, concepts and sample documents for the improvement of the economic viability of the forest sector; temporary promotion of the creation of cost-effective management units and forms of management that foster market success.	9a2, 9a3
12. Examination and, where appropriate, adaptation of legal and other regulatory provisions (Confederation and cantons) with respect to negative effects on economic viability; clarification of the public-service role (state tasks) of the forest services and their withdrawal from operative issues.	9b1, 9d1, 9d2

Formulation of measures in accordance with the Swiss NFP final report	Source (cf. thematic overview sheets)
13. Programmes to promote increased use of wood and wood energy.	7a4, 7a5
14. Support for the introduction of a CO ₂ tax; indemnification of CO ₂ fixed in wood products in the calculation of the CO ₂ balance.	7a7, 7a8
15. When selecting wood, the generally most ecologically optimum variant should be chosen (including consideration of transport distance); Inclusion of the examination of a “wood” variant in rules governing invitations to tender (e.g. as is the case in the forest law of the canton of Bern).	7b1, 7b2
16. Creation of technical documentation on fire protection, noise protection, sustainability and construction systems and the implementation of the corresponding principles in practical building solutions; reduction of the competitive disadvantages of wood with respect to other materials through the liberalization of fire regulations and the adoption of wood-friendly building regulations.	7c1, 7c2
17. Argumentative support of the forest and wood sector for the creation of good general operating conditions.	8a2, 8a3, 8a4, 8a7
18. Provision of basic assistance for possible structural improvements in the wood sector (e.g. analysis of the structure and potential of Swiss sawmills).	8a1
19. Granting of investment credits for future-oriented investments in wood processing; conceptual examination and adaptation of the existing instruments.	8a6
20. Formulation of core competencies in the context of a charter (with all forest actors). Promotion of the ongoing adaptation of the education system to the core competencies on the basis of the legislation in force.	15a1, 15a2
21. Provision of opportunities for further training within the forest education system and promotion of joint educational opportunities in the area of forests and wood; education and further training in the wood value-added chain (managers, employees), including cooperation with planners.	15f1, 15f2
22. Formulation and implementation of a joint continuing education policy with all actors involved in the area of education policy.	15e1, 15e2, 15e3
23. Improvement of business management knowledge among all actors involved in the forest and wood sector (five-year educational programme throughout the forest education system).	8b3

Formulation of measures in accordance with the Swiss NFP final report	Source (cf. thematic overview sheets)
24. Partnership-based dialogue. Creation of a networked platform for the transfer of knowledge which includes representatives of the universities, technical colleges, other institutions and forest practice; development of a centre responsible for the integration of the results of applied research into forest education and for keeping the general public informed (Extension Service Center).	15i1, 15i2
25. Provision and support of research on wood in universities and technical colleges; deciduous wood research and construction-oriented wood research should be intensified in particular (new wood materials, high-performance materials, system solutions etc.).	15k3, 8b
26. Consolidation of the Foundation for the Promotion of Forest and Wood Research.	15k4
27. Institutionalization of forest monitoring, in particular in relation to protective forest development and the concentration and deposition of air pollutants in the forest.	4a1
28. Joint programmes with other sectoral policies (joint funding for joint objectives).	cross-sectoral measure*
29. Implementation of pilot projects with a strong integrated approach (including diffusion of the expertise gained) and granting of funding in association with certain conditions (consideration of integrated approaches as a criterion for granting of funding).	cross-sectoral measure *
30. Communication campaigns to raise awareness among the general public about interrelations within the forest ecosystem; presentation of the services provided by the forest and the forest and wood sector (coherent messages and comprehensible argumentation).	cross-sectoral measure *
31. Establishment of a platform for decision makers and experts from sectors with an interest in the forest for the support, implementation and further development of the Swiss NFP.	cross-sectoral measure *

* derived from strategic directions and other measures 15

15 Thematic overview sheets

Forest Area

Problem: Today, one third of the territory of Switzerland is covered by forest. While the development of the forest area in the Central Plateau region remains constant, it was shown to have increased at varying rates in the other regions between 1983/85 (NFI I) and 1993/95 (NFI II). The development and distribution of forest area is mainly influenced by three factors: altitude, the proximity to urban areas or remoteness and primary sector development. The increase in forest area is mainly caused by the abandonment of agricultural activities in areas that were previously farmed extensively (structural change in agriculture).

Opinions vary with regard to the increase in forest area. Although extensive and connected patches of forest can provide habitats for some threatened animal species (e.g. downy woodpecker, lynx), the more prominent effects include a reduction in biodiversity and the uniformization of richly diverse landscapes (loss of landscape diversity and cultural heritage). Indeed, the increase in forest area poses fewer problems in terms of forestry than it does in the areas of biodiversity, tourism and agriculture.

Switzerland's forest areas, in particular in the Central Plateau, are extremely fragmented; in many locations, the connectivity between ecologically significant habitats has been disrupted. The forest edge, which provides an important ecotone between the habitats of the forest and open land, is almost impermeable and of little ecological value.

The forest legislation in force provides inadequate responses to the changing issues of today and the future. In particular, the regulatory measures currently applicable in the area of forest conservation (in particular clearing authorization/clearing substitute policy) are not sufficiently differentiated to deal with the complexity of the problem and need to take specific regional factors into account.

Objective 2015	Indicator	Target value	Strategic direction (implementation area)	Measures	Actors		Follow-up measures SAEFL (Instruments SAEFL)	Instrument type
					Responsibility	Coordination partners		
Individual objective 1: The existing spatial distribution of the forest will be conserved and there will be no reduction in forest area. The service provided by the forest in relation to CO ₂ balance will be recognized in terms of compliance with the Kyoto Protocol.	Change in forest area in ha (National Forest Inventory [NFI] 4 – NFI 3, GEOSTAT).	Minimum: area in accordance with NFI 3.	1a Maintenance of the ban on clearing and specification of authorized exceptions.	1a1 Extension of the catalogue of criteria authorizing exceptions to the ban on clearing and increased emphasis on spatial development (possible criteria: reintroduction of agricultural and mountain pasture practices in areas previously used for agriculture; existence of a preponderant public interest in regions with increasing forest area).	Criteria catalogue: SAEFL Implementation: FEDRO, FOT, FOCA, FOE, DDPS and cantons	OSD Cantonal spatial development services Environmental organizations	Updating of the catalogue of criteria Consultation	R
				1a2 Maintenance of the primacy of "like-for-like" compensation, i.e. afforestation in exchange for authorized clearing.	Implementation: FEDRO, FOT, FOCA, FOE, DDPS and cantons	SAEFL	Re-examination of the Federal Law on Forests (WaG)	R
				1a3 Consistent application of the principle of compensation of the advantages arising from authorized clearing in accordance with the current Law on Forests of 1991 (overcoming implementation deficit).	Implementation: FEDRO, FOT, FOCA, FOE, DDPS and cantons/municipalities	Environmental organizations Cantonal spatial development services	Monitoring	R
	Carbon reserves in the biomass and in the forest soil.	50% of the increase in the carbon reserves is taken into account in the context of the Kyoto Protocol and compensated for.	1b Taking into account of the forest's service as a carbon sink in the fulfilment of the conditions of the Kyoto Protocol.	1b1 Definition of the forest's CO ₂ balance and sink which can be taken into account for the Kyoto Protocol in accordance with international provisions. Synergy with 4a2 (soil inventory).	SAEFL	Research	Complete database (soil inventory), identification of the "Kyoto forest"	--
				1b2 Private-sector recording and marketing of CO ₂ sinks recognized by the Kyoto Protocol in the form of CO ₂ credits. Synergy with 9a4.	Forest owners/forest operations	Private sector (sponsorship)	Development of general conditions and practical instructions	P
Individual objective 2: The forest contributes significantly to the conservation of landscape diversity.	Implemented Landscape Development Concepts (LEK), Forest Development Plans (WEP), land-use plans.	Implementation of Landscape Development Concepts (LEK), Forest Development Plans (WEP) and land-use plans for 20% of forest area in view of landscape function. To be developed.	2a Control of the increase in forest area on the basis of spatial development objectives, with a view to the implementation of public interests.	2a1 Definition of objectives and criteria in relation to the increase in forest area in the context of spatial development (e.g. on the basis of the Landscape Development Concept (LEK)). Synergies with 2b1, 3a2, 3b1.	SAEFL, OSD	FOAG Environmental organizations Cantons (forestry and spatial planning) Tourism	Definition of the criteria	P
				2a2 Partial abandonment of the "dynamic forest concept" and elaborating an Official Register of Forests in areas defined in the spatial planning as having an undesired increase in forest area. After 30 years, it will be evaluated whether an area colonized by forest, which is not classified as forest in the Official Register of Forests, should be classified as such.	Cantons	Regions/municipalities	Revision of the Federal Law on Forests (WaG)	R
				2a3 In locations with increasing forest area, replacement of "like-for-like" compensation for clearing by nature and landscape conservation measures. Synergies with 3a2, 10a3, 11a2.	Implementation: FEDRO, FOT, FOCA, FOE, DDPS and cantons	SAEFL Environmental associations	Revision of the Federal Law on Forests (WaG)	R
				2a4 Targeted use of payments (e.g. Ordinance on ecological quality) to keep areas free from recolonization by the forest. Synergies with 3a1, 6b4.	FOAG, cantonal agricultural services	SAEFL Cantons	Cross-sectoral partnerships	I
	Increase in forest area in ha since NFI 2.	Area of wooded pastures, chestnut groves according to NFI 2.	2b Conservation and promotion of forms of management/cultivation of particular value in terms of the landscape (wooded pastures, chestnut groves etc.).	2b1 Development and implementation of the spatial planning instruments (e.g. LEK, WEP, Cantonal Master Plan) in collaboration with the agricultural sector. Synergies with 2a1.	Cantons/municipalities Tourism Regional policy: Regio Plus	SAEFL, OSD, FOAG Forest owners/forest operations Agriculture	Financial support	I, P
				2b2 Federal/cantonal promotion programmes.	SAEFL, cantons	FOAG, cantonal agricultural services	Service agreements between the Confederation and cantons	I

Objective 2015	Indicator	Target value	Strategic direction (implementation area)	Measures	Actors		Follow-up measures SAEFL (Instruments SAEFL)	Instrument type
					Responsibility	Coordination partners		
Individual objective 2: The forests are interconnected and dovetailed with the grassland by means of ecologically improved forest edges.	Proportion of ecologically improved forest edges	20% of total length of forest edge (Perimeter: cantons).	3a Exploitation of synergies between forest and landscape policy and other spatially-relevant policy areas.	3a1 Joint forest/agricultural programmes and the sharing of administrative responsibilities for the qualitative improvement of forest edges (maintenance, gradation) and the bordering grassland (Ordinance on ecological quality/ÖQV). Synergies with 2a4, 6b4, 11a2.	SAEFL, FOAG, cantons, cantonal agricultural services	Forest owners, agriculture, National Forum for Ecological Compensation	Cross-sectoral partnerships	I
	Proportion of areas in which connecting elements are guaranteed in a way that is binding on land owners	100% implementation of Landscape Development Concepts (LEK), Forest Development Plans (WEP).		3a2 Definition of (wildlife) <i>corridors</i> and <i>stepping stones</i> based on the National Ecological Network (REN) and spatial planning (e.g. Landscape Development Concept, Forest Development Plan, Local Agenda 21). Synergies with 2a1, 2a3, 6a1, 10a3.	Cantons, regions/municipalities	SAEFL OSD Cantonal spatial development services	Instruction	P
	Number of rehabilitated wildlife corridors	100% of wildlife corridors rehabilitated in accordance with the national strategy (number = 50).	3b Facilitation of the spatial redistribution of small forest areas in the public interest.	3b1 Definition of potential clearing-compensation areas in the context of spatial planning (land-use planning) with a view of the promotion of the interconnection of forest areas. Synergies with 3a1, 10a3	Cantons/ municipalities	OSD Cantonal spatial development services Agriculture	Definition of criteria Possible adaptation of the Federal Law on Spatial Planning (RPG)	R/P
				3b2 Prior acquisition of areas for future clearing-compensation measures.	Cantons/ municipalities		Possible revision of the Federal Law on Forests (WaG)	R/P

Instrument type: R = Regulative instruments (general bans and rules, bans and rules with exceptions, sanctions etc.) I = Incentive-based instruments (financial contributions, tax deductions etc.) P = Persuasive instruments (information, awareness-raising, education, appeals etc.)

Authorities etc.: DDPS = Federal Department of Defence, Civil Protection and Sports; FOAG = Federal Office for Agriculture; FOCA = Federal Office for Civil Aviation; FEDRO = Federal Roads Office; FOT = Federal Office of Transport; OSD = Federal Office for Spatial Development; SAEFL = Swiss Agency for the Environment, Forests and Landscape; SFOE = Swiss Federal Office of Energy; WSL = Swiss Federal Institute for Forest, Snow and Land Research

Forest Protection

Problem: Soils with insufficient buffer capacity suffer long-term and irreversible damage from chemical and physical effects. The deposition of airborne pollutants, in particular nitrogen, promote soil eutrophication and acidification. Improper management practices intensify the problem and the unsuitable use of machinery can result in soil compaction. Certain pollutants, such as heavy metals and persistent organic compounds, accumulate in the soil. The soil takes a very long time to recover, if at all, and there are very few options available in terms of artificial methods for restoring the soil. Thus, the entire ecosystem is affected.

A central problem in the area of forest protection concerns the invasion of new harmful organisms with damage potential as well as proliferation of existing ones. The latter becomes a particular problem in forest areas that are insufficiently structured, are stocked with not site-adapted tree species, have excessive growing stocks or insufficient regeneration.

The fragmentation of habitats that exists today is the outcome of an ongoing landscape transformation process, in particular changes in land use as well as the disturbance, destruction and splitting up of habitats. The habitats that provide food and shelter for wild animals are not sufficiently interconnected. In certain areas, unnatural silvicultural practices with not-site-adapted tree species, large growing stocks as well as poor light penetration mean a reduction in the food available for game. These two phenomena represent a major threat to the natural regeneration of forest areas accessible to game.

The regulation of game populations by means of hunting lacks dynamism and it is still insufficiently tailored to the forest sector's local natural regeneration targets.

Objective 2015	Indicator	Target value	Strategic direction (implementation area)	Measures	Actors		Follow-up measures SAEFL (Instruments SAEFL)	Instrument type
					Responsibility	Coordination partners		
Individual objective 4: Forest soils, trees and drinking water are not at risk from the input of contaminating substances, inadequate management and the corresponding physical effects.	Nitrogen deposition	Max. 20 kg N/ha per year.	4a Preventive and effect-oriented reduction of the concentration of air pollutants and deposition of contaminants in the forest.	4a1 Research and study of causes and their correlations, and monitoring of the dynamics of change in the forest ecosystem.	SAEFL/WSL	Research institutes, cantons, NGOs/interest groups, consultancies	Guaranteeing of own research funding and institutional and financial support for monitoring and promotion of interdisciplinary work, creation of a platform for research questions	R, P
	Soil acidification (critical parameters for BC/Al, pH and base saturation).	Based on regional assessment, 20% of areas in which critical values are exceeded show an improvement in the main root area as compared with the year 2000. Significant improvement on LTFER* and IAP permanent monitoring plots. (*LTFER: long-term forest ecosystem research).		4a2 Recording of the concentration and deposition of air pollutants and their effects on the forest. Synergy with 1b1 (soil inventory).	SAEFL (SFA, LR)	WSL Cantons/Municipalities IAP/FUB	<ul style="list-style-type: none"> Financing of monitoring, research and modelling (in particular for soil solution parameters) Initiation and financing of the soil inventory Participation in the Integrated Monitoring Programme 	P
				4a3 Reduction of contamination arising from the concentration and deposition of air pollutants.	SAEFL (SFA, LR) with other federal authorities (FOAG, FAL, FOE, FEDRO), Cantons/municipalities (implementation)	Swiss Farmers' Union Agriculture, Commerce Consultants	<ul style="list-style-type: none"> Bases, recommendations for implementation Input into the Geneva Convention and ICP Forests 	R/I
	Exceeding of the Critical Level for Ozone.	20% reduction as compared with 2000.		4a4 Demonstration of the effects of climate change and air pollutants on forest conservation and drinking water and improved integration of forest interests into sectoral policies (levels: federal, regional, cantonal, international agreements, policy).	SAEFL	Research, cantons, associations, regions	Participation in related working groups, formation of alliances (e.g. with protection of water bodies), reinforcement of involvement in international agreements Regional pilot projects for partnerships between the forest and water sectors	R, P
			4b Promotion of site-adapted stands and implementation of further-reaching measures for the avoidance of risks in the management of sensitive and highly polluted locations without neglecting measures to counteract the origin of the pollution or risks.	4b1 Recording of sensitive and polluted locations.	SAEFL (SFA) with cantons/municipalities	WSL Forest owners/forest operations Private individuals	<ul style="list-style-type: none"> Mapping of critical loads (models) Development of criteria Target agreements 	I
	Soil compaction parameters.	To be developed.	4c Promotion of management practices that protect the soil, in particular in relation of wood harvesting.	4b2 Specially adapted management of sensitive and polluted locations.	Cantons/municipalities, Forest owners/ forest operations	SFA WSL Business people	<ul style="list-style-type: none"> Bases: "indicative values", practical instructions, continuing education effor2 target agreements 	P/ R (cf. standard) I
				4c1 Minimization of soil compaction (cf. standard). Synergies with 11a1.	Cantons/municipalities	SFA, BS, WSL, Forest owners/forest operations, Forest owners association, entrepreneurs	Information Criteria for compaction risks	P/R
				4c2 Recording of soil compaction and, if necessary, measures to improve compacted soils. Synergies with 11a1.	SAEFL (SFA, BS) with cantons/municipalities (in accordance with VBBo)	WSL Forest owners/forest operations others	Surveying of bases Financing of attempts to revitalize compacted soils Research Definition of indicative values and restoration values	R

Objective 2015	Indicator	Target value	Strategic direction (implementation area)	Measures	Actors		Follow-up measures SAEFL (Instruments SAEFL)	Instrument type	
					Responsibility	Responsibility			
Individual objective 5: The forest is protected against the invasion of potentially harmful organisms. Damage by such organisms will not exceed an acceptable level in view of the provision of forest services.	Potentially harmful invasive organisms.	0	5a Prevention of the invasion of potentially harmful organisms and – where necessary – measures to control their presence.	5a1 Promotion of the understanding of processes in the forest ecosystems and of disturbances, influences and measures through targeted communication with actors and society (public relations, forest education). Synergies with 15g.	SAEFL, cantons	Forest organizations, associations, research, media, NGOs,	Provision of information and information instruments	P	
	Priority services affected by damage are fully restored within a short period.	≤ 2 years		5a2 Border controls to prevent the invasion of known potentially harmful organisms (quarantine organisms).	SAEFL FOAG	Customs authorities Wood trade Tree nurseries	Information and instruction, Updating of legal bases	R	
				5a3 Rapid identification and recognition of potentially harmful invasive organisms and provision of information to the relevant federal authorities/organizations.	SAEFL (quarantines), PBMD), FOAG	Cantons/municipalities, forest owners/forest operations, organizations, wood trade, Tree nurseries	Diagnosis (identification of cause, proposal of measures to be taken), information, awareness-raising)	P R	
				5a4 Definition of the protection measures to be implemented.	SAEFL	PBMD, FOAG Cantons/municipalities, forest owners/forest operations, organizations	Issuing of instructions (import/export), funding	R	
			5b Prevention of forest damage, in particular through the promotion of near-natural, site-adapted, structurally rich and species rich forests. This reduces the threat of the proliferation of potentially harmful organisms.	5b1 Maintenance and rehabilitation of forests to ensure that they are resistant to biotic and abiotic damage, in particular through the promotion of species-rich and structurally rich stands. Cf. also the ecological standard. Synergies with measure 11a1.	Cantons, municipalities Forest owners/ forest operations	SAEFL Other federal authorities (research) Organizations	Development of bases, provision of information, definition of quality criteria for service agreements	R (in priority areas with protective function >12a1) P (remaining forest area)	
			5c Control of potentially harmful organisms through defined damage criteria and subvention based on uniform principles supported jointly by the Confederation and cantons.	5c1 Monitoring of potentially harmful organisms and registration of the scale of their presence.	PBMD, Cantons/municipalities	SAEFL, cantons/municipalities		R P	
				5c2 Definition of damage criteria which, if fulfilled (in particular in the event of major damage events), would trigger financial support for combating potentially harmful organisms.	SAEFL	WSL, ETH	Research, development of basis; revision of KS 9 (Circular 9); definition of subsidy conditions	R P	
				5c3 Implementation of suitable measures to deal with damage or subsequent damage arising from the infestation of organisms as well as other harmful effects.	Cantons (order) Forest owners/forest operations (in the absence of public forest services)	SAEFL, WSL, ETH	<ul style="list-style-type: none"> Subsidies Monitoring (efficacy) Bases and recommendations for measures 	I R	
	Individual objective 6: The forest provides adequate and quiet living space for game. The game stocks are adapted to their habitats and have a natural age and sex distribution. Natural forest regeneration is not hindered by ungulates.	Forest area with sufficient regeneration of the main tree species.	75% of the forest area in each canton.	6a Reflection, planning and action in <i>game management areas</i> .	6a1 Definition of supraregional game areas as a basis for wildlife management. Synergies with 3a2.	Cantons/municipalities	SAEFL, hunters	Instruction	P I (with service agreements)
		Cantons with hunting plans tailored to game management areas.	26		6a2 Tailoring of cantonal hunting plans to game areas and to the requirements of silviculture.	Cantons/municipalities	SAEFL, hunters		P
Cantons with established procedure for the surveying/investigation of game damage and forest regeneration.		26		6b Implement hunting practices adapted to the biology of game; forest management that accommodates the needs of game and the careful management of the open land near forests so as to guarantee natural forest regeneration.	6b1 Definition of requirements for hunting practices adapted to the biology of game and forest management that accommodates the needs of wild animals (as a precondition for the granting of payments, otherwise using persuasive methods).	SAEFL	Cantons/municipalities Hunters	Revision of KS 21 (Circular 21); recommendations, instructions	R P
					6b2 Effective regulation of game when a minimum threshold for natural forest regeneration is not reached.	Cantons/municipalities	Cantons/municipalities Hunters	Instruction Definition of target values	P
			6b3 Development of a forest-game strategy (in particular for the protective forest) for the regional regulation of game stocks.		SAEFL (strategic), Cantons/municipalities (operational)	Forest owners/forest operations Organizations	Ordinance Circular Success monitoring	I/R	
			6b4 Maintenance of forest edges and bordering grassland that takes the needs of wildlife into account. Synergies with 2a4, 3a1, 11a2.	Cantons/municipalities	SAEFL, FOAG Forest owners/forest operations Farmers	Instruction	P I (with service agreements)		
			6c Recognition of areas of particular ecological importance for game in the context of the priority service "biodiversity".	6c1 Definition of the areas of particular ecological importance for game and consideration of these areas in the forest development plans. Synergies with 10a3.	Cantons	SAEFL, forest owners, agriculture, hunters	Definition of criteria	P	
				6c2 Calming of areas of particular ecological importance with respect to game (e.g. quiet areas for game). Synergies with 10a3, 14b2.	Cantons/municipalities	SAEFL Forest owners/forest operations	Instruction, identification (areas)	P, R	

Instrument type: R = Regulative instruments (general bans and rules, bans and rules with exceptions, sanctions etc.) I = Incentive-based instruments (financial contributions, tax deductions etc.) P = Persuasive instruments (information, awareness-raising, education, appeals etc.)

Authorities etc.: BS = Soil Protection Division (SAEFL); ETH = Swiss Federal Institute of Technology; FAL = Swiss Federal Institute for Agroecology and Agriculture Research; FOAG = Federal Office for Agriculture; FOAG = Federal Office for Agriculture; IAP = Institute for Applied Plant Biology, Schönenbuch; LR = Air Pollution Control Division (SAEFL) PBMD = Phytosanitary Observation and Reporting Service (WSL); SAEFL = Swiss Agency for the Environment, Forests and Landscape; SFA = Swiss Forest Agency (SAEFL); WSL = Swiss Federal Institute for Forest, Snow and Landscape Research

Wood Utilization

Problem: The productive potential of the Swiss forest is not being exploited to the full. In terms of volume, Switzerland would be in a position to cover its wood consumption from its own increment. Switzerland is integrated in international markets and its domestically produced wood faces strong competition from imports. Various preconditions for the increased use of wood have basically been fulfilled. However, certain reservations remain with regard to the material properties of wood. The small-scale structure of the wood-processing sector makes it difficult to keep pace with the pressure for innovation and rationalization arising from globalization. It is precisely those areas of the wood-processing sector that need to develop from operation on an artisan scale to an industrial scale that are affected by the lack of profitability. Switzerland lacks the processing capacities necessary to increase wood use to keep pace with growth levels and, moreover, reduce the very high growing stock in its forests. These inadequacies in net output are particularly prevalent with regard to the use and processing of hardwood, the production volume of which is set to increase. The future of academic research, which is sometimes accused of lacking practical relevance, is constantly under threat. In general, the sector is not used to working with research institutions. The framework conditions for (industrial) wood-processing operations are unfavourable. The rational and economical use of wood is hindered by the requirements of different public groups with respect to the use of the forest and the conditions associated with this. The production of economically important tree species (e.g. spruce) is a controversial issue in the accessible and productive forests of the Central Plateau and the use of modern wood harvesting methods faces opposition.

Objective 2015	Indicator	Target value	Strategic direction (implementation area)	Measures	Actors		Follow-up measures SAEFL (Instruments SAEFL)	Instrument type
					Responsibility	Coordination partners		
Individual objective 7: The increased demand for wood and wood products in all application areas leads to increased added value and a better CO₂ balance for Switzerland. The contribution of wood to the improvement in the CO₂ balance is rewarded through economic incentives. The companies involved in the wood chain are more productive and innovative and thus more competitive.	Use of domestically produced wood (market analysis, surveying of planners). Quantity of energy produced from wood, use of wood pellets and other "new combustibles" (to be defined) produced from wood. Quantity of CO ₂ stored in Swiss wood products.	50% increase based on Planconsult survey (1996); Swiss-produced wood constant. 100% increase as compared with the year 2000. 50'000 t pellets. 15% increase as compared with value for the year 2000.	7a Strengthening of wood markets (disposition process, delivery capacity) and of the image of wood among end consumers.	7a1 Raising awareness for wood and wood products; stimulation of demand (advertising), development of well-founded arguments in favour of wood use, persuasion based on scientific facts.	Forest and wood organizations Concept development/implementation	SAEFL	Co-financing Diffusion	P, I
				7a2 Monitoring of the wood market, identification of market opportunities.	Forest and wood organizations ("market reflection")	SAEFL, SFSO, forest owners/wood sector (provision of data), construction sector	Material flow; Targeted periodic market analysis; Co-financing of surveys of associations	P
				7a3 Facilitation of access to foreign markets.	Forest and wood organizations (lobbying)	SAEFL, seco	Support for lobbying through provision of arguments and information (e.g. Swisswood)	P
				7a4 Programme for the general promotion of wood (e.g. continuation of the wood promotion programme 'wood 21').	Forest and wood organizations (lobbying) SAEFL (co-financing)	SAEFL ETH, technical colleges	Finance based on the Federal Law on Forests (to be incorporated)	R, I, P
				7a5 Programme to promote the use of energy wood (rationalization of availability/increase in efficiency of distribution/support for investments in plants /revision of legislation governing the forest and environmentally hazardous substances (Ordinance on forests/Ordinance on substances), recycling of wood ash).	Forest and wood organizations (implementation in building solutions); Forest owners and forest operations (rationalization of availability); SAEFL/SFOE (Swiss-Energy), cantons	SAEFL ETH, technical colleges	Finance based on wood energy support programme (FOE)	R, I, P
				7a6 Support of joint certification to enhance the value of Swiss wood and facilitate market access.	Forest and wood organizations; Forest owners and forest operations (forest)	SAEFL Certification bodies	Support of the certification process, e.g. methods, pilot projects, communication	P
				7a7 Introduction of a CO ₂ tax (CO ₂ -neutral wood and the products derived from it will become more competitive on the basis of their better ecological and energy balances).	FOE	SAEFL	Calculation concepts, Decision-making bases	P
				7a8 Taking into account the CO ₂ bound in wood products for the calculation of the CO ₂ balance.	SAEFL	Wood sectors	Provision of arguments, decision-making bases	P
	7b Active promotion of the use of wood in the construction of public buildings.			7b1 Prioritization of the use of the most ecological types of wood (also taking transport distances into account).	FOBL/FHO	SAEFL	Support through provision of arguments	(R); P
				7b2 Inclusion of obligation to examine a "wood" variant in the regulations governing invitations to tender (e.g. as exists in the forest legislation of the canton of Bern).	Forest and wood organizations (lobbying)	SAEFL, other federal authorities, cantons/municipalities	Support for lobbying through provision of arguments	R
	7c Improvement of framework conditions for the use of wood.			7c1 Development of technical documentation on fire protection, noise protection, durability and construction systems and its incorporation into practical building solutions.	Forest and wood organizations (Implementation in practical building solutions, focus for planners and those responsible for implementation)	SAEFL, ETH, Technical Colleges Planners	Financing through wood promotion programmes and through Foundation for the Promotion of Research on Forests and Wood	Research & Development, P
				7c2 Reduction of competitive disadvantages of wood as compared with other materials: liberalization of fire regulations, more wood-friendly building regulations.	Forest and wood organizations (lobbying); cantons/municipalities (building insurance companies; construction law)	SAEFL, ETH Standardization bodies	Financing through wood promotion programmes and through Foundation for the Promotion of Research on Forests and Wood	R
	7d Strengthening of innovation capacities in the area of products and processes through research and development, education and further training.			7d1 Research and development: knowledge transfer. Education and further training in the wood value-added chain and among planners.	Substantiation of measures: cf. Education and Training (15i/k)			
				7d2 Provision of information about successful examples in all areas of application.	Forest and wood organizations Concept development/implementation	SAEFL	Co-financing Diffusion	P, I

Objective 2015	Indicator	Target value	Strategic direction (implementation area)	Measures	Actors		Follow-up measures SAEFL (Instruments SAEFL)	Instrument type
					Responsibility	Coordination partners		
Individual objective 8: The wood sector's economic and general operating conditions enable an increase in processing capacity. The sector is more competitive.	Quantity of wood processed in existing or new plants (sawn wood, wood derivatives, cellulose, paper). Production of ¼ finished products (new wood materials, high performance materials and system solutions, proportion of hardwood products). Difference between exports and imports based on product categories. Production and export quantities of products manufactured and patented in Switzerland. Research capacity.	Stemwood: 7 million m³ Industrial wood: 3.0 million m³ (1.1 million m³ of wood from the forest). Over 25% increase as compared with 2000, over 50% for hardwood products. Difference = 0 20% in excess of the volume of ¼-finished products manufactured.	8a Improvement of framework conditions for wood processing.	8a1 Creation of basis for eventual structural improvements in the wood sector (e.g. analysis of the structure and potential of the Swiss saw milling industry).	Initiative: organizations and wood sector Responsibility: other federal authorities (OSD)	SAEFL Organizations	Co-financing of studies and their implementation, e.g. in pilot projects	P, I
				8a2 Spatial development: e.g. examination of ways in which the extension of existing production facilities can be facilitated; examination of the creation of wood storages outside development zones and/or in the forest.	Initiative: forest and wood organizations Responsibility: other federal authorities (OSD)	SAEFL Forest owners/ forest operations Organizations	Provision of arguments in support of lobbying	P
				8a3 Technical environmental protection: e.g. checking and possible adaptation of emission limit values for air and noise (for the purpose of facilitating shift operation); examination of provisions for the disposal of fly ash and disposal or recycling of rust ash etc.	Initiative: forest and wood organizations Responsibility: SAEFL	SAEFL, other federal authorities (construction law, labour law) Cantons/municipalities (construction law and regulations)	Provision of arguments in support of lobbying	R, P
				8a4 Acceleration of authorization process for the construction of new wood-processing plants and the extension/conversion of existing ones.	Forest and wood organizations Responsibility: cantonal construction offices	SAEFL, Cantons/municipalities, Construction and administrative law	Provision of arguments in support of lobbying	R, I
				8a5 Wood supply: improvement of logistics (supply chain management). Synergies with 9a3.	Forest and wood organizations; Forest owners and forest operations	SAEFL	Financing of the development of bases and experiments; eventual provision of start-up finance	I
				8a6 Financing of investments made by forest operations and sawmills: facilitation of finance, e.g. by means of investment credits and guarantees.	Initiative: forest and wood organizations Responsibility: SAEFL, possibly seco		Provision of financial resources (e.g. extension of forest investment credits and sawmills); regulation of use, distribution	I
				8a7 Transport: e.g. examination of the following possibilities: reintroduction of tolerance of excess weight for the transportation of wood; increased reimbursement of heavy traffic levy; reimbursement of fuel costs also for internal company transport within the wood sector.	Initiative: forest and wood organizations Responsibility: various federal authorities, e.g. FEDRO, OZD		Support	R, I
	8b1 Research, development in the wood value-added chain; Knowledge transfer.	Substantiation of measures: cf. education (15k)						
	8b2 Attachment of importance to education and further training, the tailoring of services provided by the professional associations: basic practical training, training for management at higher level professional institutions, university; networking of further training courses and system.	Initiative: wood sector associations Responsibility: Confederation (ETHZ and EPFL; EMPA; professional training) and cantons (FH, professional training), companies (apprenticeships)		Support; partial financing of research and development mandates (e.g. Foundation for the Promotion of Research on Forests and Wood)	I			
	8b3 Improvement of business expertise among all actors involved in the wood sector (five-year training programme throughout the education system).	Organizations, ETH, FHS, training centres and cantons (as sponsors of the educational institutes)	SAEFL: support	Persuasion work by the Confederation	P			
	8b	Strengthening of innovation in terms of products and processes (e.g. new wood materials, high performance materials, system solutions).	25% increase in both personnel and funding as compared with 2000.					

Instrument type: R = Regulative instruments (general bans and rules, bans and rules with exceptions, sanctions etc.) I = incentive-based instruments (financial contributions, tax deductions etc.) P = Persuasive instruments (information, awareness-raising, education, appeals etc.)

Authorities etc.: EMPA = Swiss Federal Laboratories for Materials Testing and Research; EPFL = Swiss Federal Institute of Technology Lausanne; ETH(Z) = Swiss Federal Institute of Technology (Zurich); FEDRO = Federal Roads Office; FHO = Federal Housing Office; FHS = Technical Colleges; FOBL = Federal Office for Buildings and Logistics; OSD = Federal Office for Spatial Development; OZD = General Customs Authority; SAEFL = Swiss Agency for the Environment, Forests and Landscape; seco = State Secretariat for Economic Affairs; SFOE = Swiss Federal Office of Energy; SFSO = Federal Statistical Office;

Biodiversity

Problem: Sustainability in the area of biological diversity is only partly guaranteed. Many of the species that used to be common have become more rare and species that were originally rare but quite evenly distributed can only be found in a few residual isolated populations. The populations of many species are diminishing rapidly or disappearing entirely. As a result there is a general decline of the affected animal and plant species in their areas of distribution. Although it has still to be proven in most cases, the isolation of small residual populations in forests that are not sufficiently ecologically interconnected can cause a reduction in genetic diversity. In general, it is possible to say that the forest also lacks the variety of habitats necessary to conserve the still extensive variety of species and breeds.

The main causes for the partial deterioration in the living conditions of many forest species are: loss of species-rich forest types and of traditional forest management; reduction in light penetration and structural poverty; monotonous mixtures of tree species; too little old wood and dead wood; lack of connectivity in forests; increase in disturbances; browsing damage caused by game.

While one of the stated objectives of the Federal Law on Forests is to protect the forest as a near-natural habitat, it also contains provisions for the abandonment of forest maintenance and use, if this promotes biodiversity. However, there is no actual biodiversity programme for the forest with concrete objectives and binding instructions with regard to its implementation.

Objective 2015	Indicator	Target value	Strategic direction (implementation area)	Measures	Actors		Follow-up measures SAEFL (Instruments SAEFL)	Instrument type
					Responsibility	Coordination partners		
Individual objective 10: The plants and animals that live in the forest as well as the forest as an ecosystem are conserved. Species that are naturally common in Switzerland remain common, species that have become rare become more common again, and there is an increase in ecologically valuable tree species..	Population development of species that were previously more common.	50% of species that have become rare become more common again; there is no further decline in the other 50%.	10a Guaranteeing of the long-term conservation of priority species by means of specific programmes.	10a1 Development of a catalogue of criteria for the definition of priority species (rare and threatened species and species of particular ecological value).	SAEFL	Cantons, scientific institutes, universities, nature conservation organizations	Initiation and co-financing	P, I
	Number of Red List species (according to the Red List published by SAEFL, based on IUCN criteria).	10% reduction in the number of red-listed species as compared with previous Red-Lists.		10a2 Selection and publication of the priority species.	SAEFL	Cantons, scientific institutes, universities, nature conservation organizations	Decision by SAEFL taking into account internal and external positions. Communication	P
	Number of stems and new populations of priority tree species.	In compliance with specific programmes for the core areas.		10a3 Development and implementation of specific genetic programmes for the promotion and conservation of priority species. Synergies with 2a3, 3a2, 3b1, 6c1, 6c2.	SAEFL and cantons	Forest service/ forest owners/ scientific institutes, universities, nature conservation organizations	Initiation and financing of species-specific and region-specific projects (bases, implementation aids). Service agreements with cantons	P, I
	Number, size and representativity of forests with special intervention measures (managed protected forest areas, genetic reserves) for the promotion of biodiversity.	In compliance with special programmes for the conservation or promotion of species, genetic traits and special management forms.						
	Species promotion programmes implemented.	For at least 2/3 of the priority species.						
Individual objective 11: The forest is allowed to develop naturally within a representative area (strictly protected forest areas, islands of old growth, dead wood)	Proportion of natural regeneration in the regeneration area.	Increase in all regions.	11a Guaranteeing of near-natural state of forests with generally binding regulations on management and with targeted promotion of the ecological-structural diversity.	11a1 Definition and implementation of an ecological standard incorporating concrete indicators and target values. Synergies with 4b2 und 4c2.	SAEFL	Cantons/ Forest service forest owners/ forest operations organizations	Revision of the law; instructions regarding implementation (ordinance, circular); introduction of monitoring instruments	R, P
	Proportion of the standing dead wood (snags) in the growing stock.	At least 1.5% per km ² in the Central Plateau, 2% in the Jura and Pre-Alps and 5% in the Alps 25'000 ha.		11a2 Development of region-specific programmes for the improvement of forest edges, increasing of dead wood, interconnection of forest habitats, definition of forest reserves and for the conservation of traditional management forms etc. Synergies with 2b2, 3a1, 6b4.	SAEFL, FOAG, cantons (implementation)	Cantons/municipalities Forest owners, forest operations	Service agreements with cantons Integration of the Ordinance on ecological quality (agriculture): co-ordinated planning in the areas of agriculture and forest management, joint subsidies Implementation aids	I, P
	Total area of protected forest areas; currently 22'000 ha (of which half are strictly protected forest areas).	70'000 ha.						
	Number and distribution of large strictly protected forest areas.	At least 15 strictly protected forest areas >500 ha, distributed proportionally among the major regions (or natural parks with corresponding forest areas).						

Instrument type: R = Regulative instruments (general bans and rules, bans and rules with exceptions, sanctions etc.) I = Incentive-based instruments (financial contributions, tax deductions etc.) P = Persuasive instruments (information, awareness-raising, education, appeals etc.)

Authorities etc.: FOAG = Federal Office for Agriculture; SAEFL = Swiss Agency for the Environment, Forests and Landscape

Protective Forest

Problem: The sustainable provision of protection against natural hazards in Switzerland is not guaranteed, either today or in the future. Given that the proportion of regeneration areas continues to decline, the continuing regeneration of the mountain forest is not guaranteed either. This leads to the increased vulnerability of forests to damage arising from storms and snow. The ecologically important tree species fir and mountain maple are under threat from game damage in many high-altitude locations. The scale of the damage and lack of stability and/or regeneration of forest stands indicate that in many locations protection against avalanches, rockfall, landslides and debris flows is not guaranteed either today or in the future. Due to the high growing stock in mountain areas, there is a greater risk of destabilization of the protective forests with corresponding consequences for the protective services. Since 1982, wood production in the Alps has changed from being a profit-making activity to a loss-making one. This development is accompanied by an increasing lack of interest on the part of forest owners in guaranteeing the necessary maintenance of protective forests. There is also a deficit in terms of concern and interest on the part of the general public: the population is not sufficiently aware of the crucial value of the protective effects of the forest. This safety service is seen by many as something provided automatically and naturally..

Objective 2015	Indicator	Target value	Strategic direction (implementation area)	Measures	Actors		Follow-up measures SAEFL (Instruments SAEFL)	Instrument type	
					Responsibility	Coordination partners			
Individual objective 12: The services of the forest in protecting the population and infrastructure (settlements, railways, roads etc.) are guaranteed sustainably and consistently throughout Switzerland.	Number of interrupted highways (to be developed).	As little damage as possible, no loss of life.	12a Promotion of a national protective forest programme mainly based on an incentive system.	12a1 Programme agreements (result-oriented agreements without prescribed measures) between the Confederation and cantons and service agreements between clients and service providers based on the NAIS concept "sustainability in the protective forest".	SAEFL and cantons	Forest owners/forest operations Beneficiaries of services (SBB, motorways) FOWG, FOAG, OSD	Programme agreements between the Confederation and cantons; criteria; benchmarking; success analyses; long-term securing of finance	I/R	
	Scale of damage to transport axes and settlements.			12a2 Definition of the area of protective forest that could provide a comparable level of protection throughout Switzerland.	SAEFL	Cantons	Definition of the criteria; definition of the protective forest area	R	
	Increase in the protective forest area without maintenance/management deficits.			12a3 Establishment of a monitoring system (compilation of a protective forest inventory – status of regeneration, maintenance, game damage, monitoring); institutionalization of the National Forest Inventory (NFI) in order to undertake the protective forest inventory.	SAEFL/WSL, Cantons/municipalities	FOWG, FOAG, Forest owners/forest operations Organizations	Monitoring system directed at the protective forest for early recognition and success analysis	P/R	
	Increase in forest area with adequately ensured regeneration of tree species essential to the maintenance of the forest's protective effect (NAIS).	100% of forest area with a special protective function has no maintenance deficit.	60% of forest area with special protective function.	12b Guaranteed availability of the expert knowledge necessary to maintain the protective forest, the transfer of this knowledge through multidisciplinary education and training and the intensification of the exchange of experience beyond municipal and cantonal boundaries. Application of international knowledge and experience in the Alpine region.	12b1 Guaranteed provision of specialist competencies in the area of protective forest maintenance (support for training courses, exchange of experience).	SAEFL	Cantons, municipalities, organizations	Ongoing process	P
		12b2 Reinforcement (including internationalization capacity) of the <i>Extension Service Centres</i> at the Centre for Protective Forest Maintenance (Maienfeld).			SAEFL	Cantons, municipalities, organizations	Co-financing	P/ I	
	Level of awareness among the population of the protective function of the protective forest.	80% of the population in the mountain region and 40% of the population in the Central Plateau region.	12c Increased efficiency in the management of protective forests that takes the optimization of the wood value-added chain into account.		12c1 Promotion of innovative projects and organizational models at regional level.	Cantons/municipalities (initiation), SAEFL/seco (promotion)	Forest owners/forest operations and forest entrepreneurs Organizations Beneficiaries of services	Competition between projects; Payment of high contributions	I
		12c2 Improvement of the business structures for protective forest maintenance and tailored use of resources in the context of integrated natural hazard risk management.			Cantons/municipalities, Forest owners/forest operations	SAEFL, Forest Owners Association	Conditioned investment credits	P/ I	
		12c3 Development and use of effective and efficient techniques for protective forest management.			Science and research, Forest owners/forest operations/forest entrepreneurs	SAEFL Cantons/municipalities Forest Owners Association, GWG	Co-financing of studies, pilot and demonstration projects	P/ I	
		12c4 Promotion of the use of wood from protective forest through the promotion and optimization of the regional wood value-added chain.			Cantonal/regional development, wood chain	SAEFL, seco	2–3 pilot and demonstration projects	P	
			12d Promotion of awareness-raising among service beneficiaries, partners and the population in relation to the services provided by the protective forest.		12d1 Calculation of cost-benefit ratio for protective forest maintenance in comparison with other alternative measures such as technical protective structures. Communication of the results.	SAEFL	FOAG; OSD, FOWG, PLANAT forest owners/forest operations FAN, GWG	Basic work – studies	P
		12d2 National protective forest campaign for the sustainable guaranteeing of the functions of the protective forest: raising of awareness among service beneficiaries, partners and the population in the protective forest area and integrated natural hazard risk management, publicity for "NAIS".			SAEFL together with the cantons and forest owners/forest operations	Confederation, other associations, GOWN, schools, NGOs	Concept; project organization	P/ I	

Objective 2015	Indicator	Target value	Strategic direction (implementation area)	Measures	Actors		Follow-up measures SAEFL (Instruments SAEFL)	Instrument type		
					Responsibility	Coordination partners				
	Number of regional centres for ensuring integrated natural hazard risk management focused on watersheds.	Reduction of 15% as compared with 2003.	12e Promotion of cross-sectoral partnerships.	12e1 Intensification of the flow of information to other sectors so as to increase the use of opportunities for synergy.	SAEFL, cantons	FOWG, OSD, FOAG, FOPP ETH, PLANAT	Periodic exchange of information	P		
				12f1 Creation of suitable institutional preconditions (forum) for the dialogue between those who seek, benefit from and provide protective forest services.	SAEFL with cantons/municipalities	OSD, FOWG, FOAG, Forest owners/forest operations Organizations	Creation of a forum	P		
				12f2 Development of an incentive system for the promotion of cross-sectoral, "Natural Hazards and Risk Management" competency centres in pilot regions.	SAEFL/FOWG	Cantons/ forest owners/forest operations, PLANAT	Competition, pilot projects	P/ I		
				12f3 Development of cross-sectoral regional competency centres for the guaranteeing of integrated natural hazard risk management in which the protective forest plays a key role.	Cantons/regions/municipalities	SAEFL/OSD, FOAG, FOWG, seco, PLANAT	Start-up finance	P/ I		
	Cost per ha protective forest management.	70% increase as compared with 2003.	12f Development of integrated risk management at regional level with the service provided by the protective forest as an important component.	12g1 Promotion of an interdisciplinary exchange of experience between representatives of the Confederation, cantons and municipalities, land owners and the private sector (discussion platform, workshops).	SAEFL	Cantons, municipalities, FOWG, OSD, FOAG, FOPP, ETH, PLANAT, forest owners, private sector	Periodic exchange of information	P		
				12g2 Intensification of teaching (multifunctional education and training courses at the appropriate universities and technical colleges) and research (development and documentation of teaching material) in the area of regional risk management and resource use (human and financial resources).	SAEFL, FOAG, OSD, OPET	Forest owners/forest operations, GOWN, FAN, GWG, cantonal associations of the forest sector	Promotion of discussion and information events for targeted further training	P		
				Number of organizations involving several owners.	100%					
				Payments made for services and results.						

Instrument type: R = Regulative instruments (general bans and rules, bans and rules with exceptions, sanctions etc.) I = Incentive-based instruments (financial contributions, tax deductions etc.) P = Persuasive instruments (information, awareness-raising, education, appeals etc.)

Authorities etc.: ETH = Swiss Federal Institute of Technology; FAN = Natural Hazards Forest Working Group; FOAG = Federal Office for Agriculture; FOPP = Federal Office for the Protection of the Population; FOWG = Federal Office for Water and Geology; GWG = Mountain Forest Maintenance Group; GOWN = Group for Forest and Natural Hazards Public Relations; OPET = Federal Office for Professional Education and Technology; OSD = Federal Office for Spatial Development; PLANAT = Platform for Natural Hazards; SAEFL = Swiss Agency for the Environment, Forests and Landscape; seco = State Secretariat for Economic Affairs; WSL = Swiss Research Institute for Forest, Snow and Landscape; WVS = Association of the Swiss Forest Sector

Economic Viability

Problem: Today, the forest operations that make up the forest sector are operating at a loss. Given current global market prices and the existing processes and forms of organization within the sector, it is virtually impossible to cover the costs of wood harvesting. As a result many forest owners are losing interest in the forest in the long-term and withdrawing from forest management activities. The "atomization" of forest ownership (and structure of forest management) with innumerable small units and, in many cases, a lack of economic interest in the forest on the part of owners play an important role in this context. This "atomization" is particularly prevalent in the private forests; 27% of forest area is in the hands of 245'000 private owners. It should also be noted that in reality there is very little cooperation between forest owners.

The current subsidy mechanism for public goods and services influences the private-sector wood market. The mixing of private market and public goods provides false incentives for wood production. Given the increasing demands placed on the forest by the general public, forest operations feel that they receive too little support in the area of forest management. The services provided by the forest sector are only partly remunerated by the users. The mixing of state and private sector tasks in forestry without clear identification of objectives and priorities also leads in part to the confusion of interests.

Excess capacities in the public forest operations have negative consequences in the area of costs; there are few incentives for technical and organizational innovations. Due to false incentive mechanisms, among other things, the current "forest culture" is resistant to change and tends to be backward-looking. High subsidy rates have led to the creation of rigid structures and hampered structural adaptation to new conditions. The emphasis is often on the protection of vested and individual interests and this is an obstacle to change. There is a lack of clear entrepreneurial spirit in the forest operations. Public forest operations do not belong to the municipalities' core businesses. Moreover, there is insufficient demand for raw material from the wood sector.

Objective 2015	Indicator	Target value	Strategic direction (implementation area)	Measures	Actors		Follow-up measures SAEFL (Instruments SAEFL)	Instrument type
					Responsibility	Coordination partners		
Individual objective 9: The optimization of the distribution of tasks and structures in the forest sector leads to greater efficiency. This results in the improvement of the economic viability of forest operations.	<ul style="list-style-type: none"> Overall outcome per forest operation. Result per m³ of raw wood. Wood harvesting costs per m³. Forest sector's contribution to gross national product. Reduction in average costs per m³ raw wood. 	<ul style="list-style-type: none"> 90% of operations report a profit. Profit per m³ raw wood. Wood harvesting costs similar to those in neighbouring countries. Increase. Rate of return equal to federal bonds. 	9a Encouragement of commercial self-sufficiency among public forest operations and simultaneous promotion of optimum operation sizes and organizational forms to increase efficiency, reduce costs and facilitate access to new markets.	9a1 Awareness-raising campaign among important target groups, e.g. municipalities, directors of forest operations, opinion leaders etc., with regard to the potential for change (opportunities in the forest sector). Creation of a clear understanding of paradigm change: support for the forest sector from the Confederation, cantons, municipalities, educational institutions.	SAEFL	seco Confederation/cantons (implementation) Forest owners/forest operations: basic consensus; Organizations: basic consensus; Wood chain	Information (brochures, events, visits, articles)	P
				9a2 Provision of business models, concepts, sample models (e.g. legal aspects) and support for their introduction (cf. 9a3). Synergies with 12c2.	Organizations (forest owners association) and others (economic sectors etc.) (forest owners association, management consultancy expertise)	Cantons: support, inclusion of specific cantonal issues	Promotion of new course content Financial incentives	P
				9a3 Temporary promotion of the formation of management units and forms or organization that are optimum in terms of costs and capable of succeeding on the market (co-operations, mergers; optimization of existing "assistance for structural improvement"). Synergy with 8a4.	SAEFL and cantons	seco: New Regional Policy (NRP) Organizations: support	Start-up finance: for risk clarification, consultancy, coaching, organizational development, information transparency	I, P
				9a4 Improvement of business expertise of all actors involved in the forest sector (five-year training courses throughout the forest education system). Synergies with 1b1.	Substantiation of measures: cf. Education and training (15a2)			
				9b1 Evaluation of previous experience (Lucerne) / and creation of basis/estimation of consequences (intermediary objective). Clarification of the state tasks to be implemented by forest operations and their clear separation from operational matters.	SAEFL: bases Cantons: implementation	Organizations	Federal Law/Decree on Forests: examination of mandatory authorization for wood harvesting, possible replacement with mandatory declaration. Cf. also Strategy 9d. Information brochure for forest owners (what does the forest legislation say, regulations)	P
	9b Disentangle state tasks from operational tasks with guaranteed implementation of state tasks.	9b2 Definition of priority services so that the areas in which special public management requirements apply and areas that can be managed without state intervention and in compliance with the ecological standard are clearly defined.	Cantons	Revision of the Federal Law/Decree on Forests (definition of public services and linking with indemnification mechanisms)	R			
		9c Service mandates for public services.	9c1 Restriction of payments to public services clearly defined in the Law on Forests; transitional support for a limited period for 9a3.	SAEFL	FOAG,	Federal Law/Decree on Forests <ul style="list-style-type: none"> Definition of public services in the Federal Law/Decree on Forests Examination of existing subsidies in terms of public benefit, e.g. "Silviculture A", forest damage (normal damage), forest planning bases, forest reproductive material, access roads, improvement of management conditions (forest depots, roads etc.) 	I	
	9c2 Service agreements on all levels (i.e. Confederation and cantons/cantons and forest owners, municipalities and forest owners).		SAEFL and cantons/municipalities	Forest owners	Law on Forests/Decree on Forests	I		

Objective 2015	Indicator	Target value	Strategic direction (implementation area)	Measures	Actors		Follow-up measures SAEFL (Instruments SAEFL)	Instrument type
					Responsibility	Coordination partners		
			9d Optimum framework conditions for forest management: adaptation of legislative provisions.	9d1 Examination and adaptation of the legal and other regulatory (e.g. implementation) provisions, for example <ul style="list-style-type: none"> • Standard for ecological provisions clearly defined • Clear-cut clearly defined with eventual shift towards greater possibilities for intervention • Imposition of specific management requirements through the subsidy mechanism • Authorization procedures for wood harvesting and other uses of the forest (e.g. major events), and definition of forest management principles 	SAEFL/cantons	Forest owners association	Adaptation of the Federal law on Forests, Decree on Forests and Circulars	P, R
		9d2 Examination of the cantonal forest laws and implementation in terms of their restrictions and negative effects (on economic viability), e.g. <ul style="list-style-type: none"> • Management principles • Rules governing operational plans and their implementation • Forest service as forest consultant • Mandatory authorization and marking of trees for felling • General planning instruments (WEP, LEK etc.) • Territorial organization of forest services (creation of districts) 						

Instrument type: R = Regulative instruments (general bans and rules, bans and rules with exceptions, sanctions etc.) I = Incentive-based instruments (financial contributions, tax deductions etc.) P = Persuasive instruments (information, awareness-raising, education, appeals etc.)

Authorities: FOAG = Federal Office for Agriculture; SAEFL = Swiss Agency for the Environment, Forests and Landscape; seco = State Secretariat for Economic Affairs; WVS = Association of the Swiss Forest Sector

Recreation and Leisure

Problem: As part of the landscape and as the habitat of plants and animals, like human beings, the forest suffers from the restlessness of modern society and the increasing density of settlements. Urban society (70%) has alienated itself from nature. There is a lack of awareness of the various functions of the forest. The forest makes an important contribution to our quality of life. The use of the forest for leisure activities is increasing as are the pressure on nature, the landscape and the forest sector and conflicts between forest users. There is insufficient communication between the different interest groups (individual and collective beneficiaries, forest owners, managers, administrators). In practice, hardly no forests with a priority in the area of recreational and leisure services have been identified. There are no national objectives for the leisure services provided by the forest. Deficits also continue to exist in the area of research: there is a lack of systematically recorded data which would make it possible to provide information and draw conclusions on the population's requirements, the effective burden on the forest ecosystem and the capacities at its disposal.

Objective 2015	Indicator	Target value	Strategic direction (implementation area)	Measures	Actors		Follow-up measures SAEFL (Instruments SAEFL)	Instrument type
					Responsibility	Coordination partners		
Individual objective 14: Recreational and leisure activities in the forest are controlled to promote the conservation of the forest. Forests near urban agglomerations are managed with the priority service of recreation and leisure in mind, and this reduces the burden on other forest areas.	Satisfaction of forest visitors	Increase in the number of positive opinions on the forest (WaMos II)	14a Raising awareness for a more respectful approach to the forest.	14a1 Raising of the population's awareness of their rights and obligations as forest visitors and on issues concerning natural hazards, forest and wood in the leisure and recreation forest.	SAEFL	Forest owners, cantons, NGOs (Lignum ...)	National poster campaign, training of specialists Cf. Education 15g → Forest education	P
	Quality of natural elements in forest areas that provide "Recreation and Leisure" priority service	Better quality of natural attributes (NFI3)		14a2 Promotion of the experience of nature (and the wilderness) among the population of urban areas. Synergies with 15g.	Towns/cities, municipalities, regions, cantons	Forest owners/forest operations / SAEFL – SFA, N+L/organizations	Subsidies in accordance with the Federal Law on the Protection of Nature and Cultural Heritage (NHG)	I
				14a3 Support of further training for the promotion of the definition, management and maintenance of leisure and recreation forests and the channelling of activities and respectful use of all forests.	Substantiation of measures: cf. Education and training (15e3)			
	Area of forests defined as fulfilling the "Recreation and Leisure" priority service (I 6.11).	10% of Switzerland's forest area designated as Recreation and Leisure forest (WEP)	14b Provision of bases to forest owners concerning the financial exploitation of recreation and leisure activities	14b1 Development of issues relevant to the law (forest structures, major events, liability issues etc.) in connection with the use of forests for leisure activities.	SAEFL	Cantons/municipalities Forest owners/forest operations Forest owners association, tourism	Creation and development of legal bases	R (I)
	Number of cultural objects developed (I 6.12).	Number of cultural objects per year (WEP)		14b2 Provision of information and decision-making bases for the definition, management and maintenance of recreation and leisure forests and for the channelling of activities and respectful use of all forests.	SAEFL	Cantons/municipalities Forest owners/forest operations	Development and provision of bases	P
				14b3 Forest operations to be given the possibility of charging fees for activities that require authorization. Authorization to be granted through the cantons with the prior agreement of forest owners.	Cantons/Forest owners association	SAEFL Municipalities Forest owners/forest operations	Creation of the legal basis	R (I)
	Media reports on conflicts concerning "Leisure in the Forest"	Δ Number of media reports per year (Argus WVS, SAEFL press review)		14b4 Incentives for innovative product development and for the creation of marketable products and services (<i>inter alia</i> with cultural and historical content) for leisure, tourism and health.	SAEFL, cantons/municipalities and organizations	seco, SFOPH, OSD foundations	Financial incentives for co-operation projects/pilot projects	P/I
	Number of participants in the Nature-Forest-Leisure-Tourism-Land-Health platform.	Δ Number of participants per year	14c1 Establishment of a platform for "Nature-Forest-Leisure-Tourism-Landscape-Health" (exchange of information, early identification of new leisure trends, alliances with agglomeration policy etc.).	SAEFL	Confederation (OSD, seco, SFOPH, FOC, FOSPO, FEDRO), Cantons/municipalities forest owners forest operations organizations	(Co-)financing Network management	P	

Instrument type: R = Regulative instruments (general bans and rules, bans and rules with exceptions, sanctions etc.) I = Incentive-based instruments (financial contributions, tax deductions etc.) P = Persuasive instruments (information, awareness-raising, education, appeals etc.)

Authorities etc.: FEDRO = Federal Roads Office; FOC = Federal Office of Cultural Affairs; FOSPO = Federal Office of Sports; N+L = Nature and Landscape (division of SAEFL); OSD = Federal Office for Spatial Development; SAEFL = Swiss Agency for the Environment, Forests and Landscape; SFA = Swiss Forest Agency; SFOPH = Federal Office of Public Health; WVS = Association of the Swiss Forest Sector

Education, Research and Development

Problem: The basic capabilities of those who work in and for the forest (forest core competencies) need to be re-examined and put into practice. In particular, the concept of forest core competencies needs to be tailored to society's future requirements of the forest and guarantee its ongoing adaptation to new general conditions.

Opportunities for career development are partly lacking in the traditional forest environment. There is insufficient emphasis on business expertise in forest education and further training. There is still insufficient understanding of the need for ongoing further training in the forest professional area.

Environmental education is inadequately integrated at all levels of forest education (schools, professional education, universities and adult education).

The applied research on problems that arise in practice and the transfer of research findings of relevant to practice do not adequately respond to the needs of forest practice.

Objective 2015	Indicator	Target value	Strategic direction (implementation area)	Measures	Actors		Follow-up measures SAEFL (Instruments SAEFL)	Instrument type
					Responsibility	Coordination partners		
<p>Individual objective 15: The forest education system guarantees high-quality expert and management competencies for the activities carried out in and on behalf of the forest. Research develops scientific bases and target-oriented methods for the resolution of problems.</p> <p><i>(The forest education system guarantees high-quality expert and management competencies for the activities carried out in and on behalf of the forest.)</i></p> <p><i>(Ongoing further training is professionally integrated into the forest professional area, courses are constantly updated and used extensively by specialists from other sectors.)</i></p> <p><i>(The forest education system will develop and promote comprehensive and holistic forest educations.)</i></p>	Proportion of the population that is satisfied with the services provided by the forest professional area.	At least as big as it was for the WAMOS survey in 1999.	15a Definition of the <i>core competencies</i> and the corresponding forest education system.	15a1 Joint development of a charter on forest core competencies by all interested forest actors.	SAEFL	Cantons, institutions, associations	Initiation	P
				15a2 Ongoing (substantial and structural) adaptation of the education system to the forest core competencies on the basis of the legislation in force, e.g. WaG, BBG, ETHG, FHSG.	SAEFL	Confederation, cantons, institutions, associations	Information, awareness-raising, marketing	P
				15a3 Information of the public on current forest education opportunities.	SAEFL	Cantons/municipalities Forest owners/forest operations Organizations	Information	P
				15a4 Opening up of the forest education system to other professional areas, both at home and abroad.	SAEFL	Confederation, cantons, institutions associations	Information, awareness-raising, marketing	P
			15b Guaranteeing of quality and efficacy of the forest education system.	15b1 Evaluation and adaptation of the forest education system.	SAEFL	Confederation, cantons, institutions associations	Permanent process	I, C
			15c Establishment of a broad basis for the forest education system (creation of necessary institutional and financial requirements).	15c1 Development of a support and finance concept with promotion of the cooperation between different actors and institutions and with the involvement of all public and private employers.	SAEFL, WVS	Cantons, institutions, associations	Involvement and information	P
			15d Promotion of consultancy activity for forest owners.	15d1 Establishment of 2–3 advisory centres (operational, substantial financial advice) and training of consultants.	Confederation and cantons	SAEFL Organizations	Guaranteeing of the exchange of communication and experience as a permanent task; networking with the forest core competencies	P
	Proportion of specialists in the forest professional area who undertake further training on a regular basis.	At least 70%	15e Formulation of a common forest further training policy among all those involved in educational policy.	15e1 Awareness-raising (dialogue-oriented process) among all forest actors with respect to the importance of further training in the forest professional area.	SAEFL	Cantons/municipalities Forest owners/forest operations Organizations	Guaranteeing of contemporary further training opportunities	P
				15e2 Enshrining of the obligation to undertake further training in the legislation.	SAEFL		Implementation of measures	R
				15e3 Promotion of further training in support of the definition, management and maintenance of recreation and leisure forests and the channelling of activities and respectful use of all forests.	SAEFL	Cantons/municipalities Forest owners/forest operations	Instigation of diffusion of bases	P (I)
			15f Promotion of interdisciplinarity between the different sectors and co-operation within the forest sector.	15f1 Opening up of educational courses for further training purposes.	Educational institutes	OPET, SAEFL, institutions, associations	Guaranteeing of mutual recognition	P, I
				15f2 Promotion of joint forest and wood educational courses. Education and training in the wood value-added chain (managers, employees) including cooperation with planners.	SAEFL	seco, professional colleges, technical colleges, Lignum, sectoral associations, ETH, WSL, EMPA	Guaranteeing of cooperation	P, I
			Proportion of educational courses in which forest education is a component of the forest education.	80%	15g Establishment of forest education as a component of all educational courses.	15g1 Dialogue with educational and training bodies (school, professional training).	Environmental education organizations, educational institutes	Confederation Cantons/municipalities Forest owners/forest operations
	15g2 Guaranteeing of the provision of specific technical and management competencies for training in the area of forest education.	Environmental education organizations, educational institutes				SAEFL Cantons/municipalities	Integration of courses into various educational programmes	P, I
	Awareness of the forest.	80% of the population						

Objective 2015	Indicator	Target value	Strategic direction (implementation area)	Measures	Actors		Follow-up measures SAEFL (Instruments SAEFL)	Instrument type
					Responsibility	Coordination partners		
<i>(The open questions in the forest professional area and in associated professional areas are answered by the research institutes. The transfer of knowledge between research and practice works.)</i>	Open questions answered on an ongoing basis.	100%	15h Undertaking on the part of research institutions to engage in applied research.	15h1 Initiation of a corresponding discussion with the relevant institutions.	SAEFL	Cantons/municipalities organizations	Proposal of agreements	R
				15h2 Definition of clear objectives for applied research.	Organizations	SAEFL Cantons/municipalities	Initiation of immediate measures	P
				15h3 Research of cause-effect mechanisms and monitoring of the dynamics of change in the forest ecosystem. (cf. research topics).	Organizations WSL/Confederation	SAEFL Cantons/municipalities		I
	Satisfaction on the part of forest practice with the knowledge transfer between research and practice.	70% of practitioners satisfied with knowledge transfer.	15i Intensification of knowledge transfer.	15i1 Creation of a platform (for knowledge transfer) and corresponding think tanks involving the universities, technical colleges, other institutions and practitioners.	SAEFL	Cantons/municipalities organizations	Participation in the platform	I
				15i2 Establishment of a centre for the integration of the results of applied research into forest education and for informing the general public (Extension Service Centre).	SAEFL	Cantons/municipalities organizations	Evaluation of effect Promotion	R, I
				15i3 Compilation of a knowledge database.	Organizations	SAEFL Cantons/municipalities Forest owners. forest operations		P
				15i4 Consolidation of the Foundation for the Promotion of Research on Forests and Wood (cf. also 15k4).	SAEFL and cantons, possibly organizations	Organizations	Financing of existing foundation	I
	15k Intensification of wood research, including development and knowledge transfer.			15k1 Creation of a platform for knowledge transfer involving the universities, technical colleges and other institutions.	Initiative: forest sector associations Responsibility: directly interested schools, wood centre of competence, SAH		Participation, support	I
				15k2 Political intervention on behalf of wood (renewable native resource, renewable, CO ₂ -neutral, special structure of the sector) with a view to overcoming the deficits in technology and research.	Associations	SAEFL	Support through arguments	R, P
				15k3 Establishment and support of capacities for research on wood in universities and technical colleges; research on deciduous wood and construction-oriented wood research to be intensified in particular.	Universities and technical colleges	SAEFL	Support through arguments	I, P
				15k4 Consolidation of the Foundation for the Promotion of Research on Forests and Wood.	SAEFL and cantons, possibly organizations	Organizations	Financing of existing foundation	I

Instrument type: R = Regulative instruments (general bans and rules, bans and rules with exceptions, sanctions etc.) I = Incentive-based instruments (financial contributions, tax deductions etc.) P = Persuasive instruments (information, awareness-raising, education, appeals etc.)

Authorities etc.: EMPA = Swiss Federal Laboratories for Materials Testing and Research; ETH = Swiss Federal Institute of Technology; FEDRO = Federal Roads Office; FOC = Federal Office of Cultural Affairs; FOSPO = Federal Office of Sports; OPET = Federal Office for Professional Education and Technology; OSD = Federal Office for Spatial Development; SAEFL = Swiss Agency for the Environment, Forests and Landscape; SAH = Swiss Working Group for Wood Research; seco = State Secretariat for Economic Affairs; SFOPH = Federal Office of Public Health; WVS = Association of the Swiss Forest Sector; WSL = Swiss Research Institute for Forest, Snow and Landscape