

Thematic Report on Mountain Ecosystems

Please provide the following details on the origin of this report.

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Please provide summary information on the process by which this report has been prepared, including information on the types of stakeholders who have been actively involved in its preparation and on material which was used as a basis for the report.

The Min. of Environment has, in a letter of August 8, 2002, given to the Directorate for Nature Management (DN) the main responsibility to follow up the decisions taken by COP 6 under CBD, and in particular to contribute to the various National Reports requested by COP 6.

For the specific thematic report on Mountain Ecosystems, DN has involved the relevant departments of the Directorate, as well as consulted various relevant publications on the theme. It has not been considered necessary to formally involve other ministries in this work, other than collecting relevant information through telephone and e-mail.

The Min. of Environment has taken the responsibility to coordinate various contributions to the thematic reports.

Mountain Ecosystems

1. What is the relative priority your country accords to the conservation and sustainable use of biological diversity in mountain ecosystems?					
a) High	X	b) Medium		c) Low	
2. How does your country assess the resources available for conservation and sustainable use of biological diversity in mountain ecosystems, both domestic and international?					
a) Good		b) Adequate		c) Limiting	X
3. Has your country requested financial assistance from GEF for funding the activities for conservation and sustainable use of biological diversity in mountain ecosystems?					
a) no					X
b) yes, please provide details					

Assessment, Identification and Monitoring

4. Has your country undertaken any assessment of direct and underlying causes of degradation and loss of biological diversity of mountain ecosystems?	
a) no, please specify the reasons	
b) yes, please specify major threats and their relative importance, as well as gaps	X (see below)
c) If yes, please specify the measures your country has taken to control the causes of loss of mountain biodiversity	X (see below)
5. Has your country identified taxonomic needs for conservation and sustainable use of biological diversity of mountain ecosystems?	
a) no, please specify the reasons	X (see below)
b) yes, please specify	
6. Has your country made any assessment of the vulnerability or fragility of the mountains in your country?	
a) no, please specify the reasons	
b) yes, please specify the results and observed impacts on mountain biodiversity	X (see below)
7. Has your country made any assessment important for conservation of biological diversity of mountain ecosystems at the genetic, species and ecosystem levels? (You may wish to use the Annex I of the Convention for categories of biodiversity important for conservation)	
a) no, please specify the reasons	
b) yes, some assessments or monitoring undertaken (please specify)	X (see below)
c) yes, comprehensive assessments or monitoring programmes undertaken (please specify where results can be found, and opportunities and obstacles, if any)	

Regulatory and Information System and Action Plan

8. Has your country developed regulations, policies and programs for conservation and sustainable use of biological diversity in mountain ecosystems?	
a) no	
b) yes, please specify sectors	X (see below)
9. Has your country applied the ecosystem approach (adopted at COP 5) in the conservation and sustainable use of biological diversity in mountain ecosystems?	
a) no	
b) yes, please provide some cases or examples	X (see below)
10. Does your national biodiversity strategy and action plan cover mountain biological diversity?	
a) no, please specify why	
b) yes, please give some information on the strategy and plan, in particular on mountain biodiversity	X (see below)
11. Has your country disseminated the relevant information concerning management practices, plans and programmes for conservation and sustainable use of components of biological diversity in mountain ecosystems?	
a) no	
b) yes, please provide details where information can be retrieved concerning management practices, plans and programmes	X (see below)

Cooperation

12. Has your country undertaken any collaboration with other Parties for conservation and sustainable use of biological diversity in mountain ecosystems at the regional level or within a range of mountains?	
a) no	
b) yes, please specify the objectives of this collaboration and achievements	X (see below)
13. Has your country signed or ratified any regional or international treaty concerning mountains?	
a) no	
b) yes, please specify which treaty and provide as much as possible a report on the progress in the implementation of the treaties, including any major constraints in the implementation of the treaties	X (see below)

Relevant thematic areas and cross-cutting issues

14. Has your country taken account of mountain ecosystems while implementing thematic programmes of work on agricultural; inland waters; forest; and dry and sub-humid lands biological diversity?	
a) no	
b) yes – but in only one or two thematic programmes of work	
c) yes, included in all programmes of work	X (see below)
d) if yes, please specify details	
15. Has your country taken any measures to ensure that the tourism in mountains is sustainable?	
a) no , please specify why	
b) yes, but in early stages of development (please specify the reasons)	X (see below)
c) in advanced stages of development (please specify the reasons)	
d) relatively comprehensive measures being implemented (please specify the reasons)	
16. Has your country taken any measures to protect the traditional knowledge, innovations and practices of indigenous and local communities for conservation and sustainable use of biological diversity in mountain ecosystems?	
a) no	
b) not relevant	
c) yes, but in early stages of policy or programme development	
d) yes, in advanced stages of development	X (see below)
e) some programmes being implemented	
f) comprehensive programmes being implemented	
17. Has your country developed any programmes for the protection of natural and cultural heritages in the mountains?	
a) no	
b) yes, please provide some information in the programmes	X (see below)
18. Has your country established protected areas in mountains?	
a) no	
b) yes, please specify the percentage of mountains under protected areas out of total mountain areas in your country	X (see below)
19. Has your country undertaken any activities to celebrate the International Year of Mountains and Eco-tourism?	
a) no	
b) yes, please specify	X (see below)

Case-studies

Please provide case-studies made by your country in conservation and sustainable use of biological diversity in mountain ecosystems.

Further comments

- Norway has a provision under the Planning and Building Act to consider important biological diversity as an important factor in the EIA process
 - A new Norway/UN – Trondheim Conference (the fourth since 1993) is planned for June 2003 with main focus on transfer of technology and capacity building
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4b. According to a pilot study on Norwegian Millennium Ecosystem Assessment (<http://english.dirnat.no/archive/attachments/01/22/DNrep059.pdf>) the major threats of development are:

- Hydropower development and transmission lines
- Motorised transport, particularly on bare soils
- Increasing number of cottages
- Tourist development
- Military shooting ranges
- Mountain roads opened during wintertime
- Increasing domestic animal grazing pressure

Social driving forces are:

- population growth
- Increased economic growth; increasing industrial production and transport
- Infrastructure development
- Conflicts between different uses, especially those connected with different types of industrial activity and nature conservation.

Environmental pressures:

- Climate change: rising temperatures and precipitation
- Increased pollution (nitrogen, ozone) in southern areas, long range environmental pollutants and radioactivity from the Chernobyl accident
- Local pollution (mining)
- Fragmentation of alpine areas (transport infrastructure, tourism/recreation, reindeer fences)
- Disturbance and wear-and-tear on the terrain from motor traffic of the roads
- Over grazing of reindeer pasture, particularly in Finnmark County
- Abandonment of alpine dairy farms and the reduction of alpine pastures
- Over-harvesting and culling of large predators and game populations

- 4c. - One major military shooting range in a mountainous area (Hjerkin) has been closed down
- A few management programmes targeted on specific species have been initiated, e.g. on wild reindeer and on the arctic fox
 - There are various research programmes related to management of mountain areas related to wild reindeer ecology and etology:
 - * Hunting and the use of mountain areas in open-air recreation
 - * Biological and sociological criteria for a sustainable management of wild reindeer
 - * Available grazing areas for wild reindeer
 - * Long-term sustainable management of mountain areas in Southern Norway

* Effects on wild reindeer by keeping the Hardangervidda road (Rv. 7) open during wintertime

5a. Scandinavian mountains have very few endemic species. However, in a few taxonomic groups where sister species are effectively isolated from each other in the Norwegian mountains, a fairly active genetic selection activity can be detected. Additionally, for a number of mountain organisms, the Norwegian populations occupy marginal parts of their total distributions, and it is therefore probable that a large number of mountain organisms has developed genetic adaptations to such situations. Formally, there could therefore have been some taxonomic needs for conservation and sustainable use of biological diversity in mountain ecosystems in Norway, but no actual plans or establishments of such schemes have so far been initiated.

6b. A general assessment was made in the pilot study "Norwegian Millennium Ecosystem Assessment" (DN Report 2002-1b). See also 4b.

- See also under 4c above on some relevant research activities, and particularly related to wild reindeer and roads. Long term studies have also been undertaken to monitor the effects of domestic reindeer grazing, particularly in Finnmarksvidda
- The Norwegian Tourist Association (DNT) has worked out some vulnerability analyses for selected mountain areas (cfr 15b)
- Norway participates in high mountain research on ecosystemic response to climatic change (EU Project: Assessment of Potential Effects and Adaptations for Climate Change in Europe. The Europe Acacia Project)
- The Norwegian Research Council is supporting various research programmes related to biological diversity in mountain ecosystems
- Reports from Northern Norway on overgrazing based on domestic reindeer farming have been worked out. There is an increasing grazing pressure also in several mountain areas elsewhere of domestic animals, particularly sheep, including inside National Parks and other protected areas. There are signs (although no conclusive evidence) that such (over-)grazing may disturb the natural mountain ecosystems significantly, including the damaging effects on several red-listed alpine plant species. There are no general limits as to the number of domestic animals that can be released in mountain areas in Norway during the summer season, not even inside conserved areas

7b. - See also under 4c and 6b for research and management activities related to wild reindeer. Some basic research is taking place related to various species groups in mountain ecosystems (mainly vascular plants, mammals and some invertebrate groups)

- A new management system for biological diversity is to be built up in the period 2001 - 2005 (Summary in English; Report to the Storting on Norway's biodiversity policy and action plan – cross sectoral responsibilities and coordination). The system covers all ecosystems incl. mountains, and comprises of 1) surveys and monitoring programmes, 2) coordination (and revision) of economic and legislative instruments and 3) information, research and expertise. See also 10b
- Since 1998 a nationwide monitoring programme at municipal level has identified threatened and vulnerable species (Red List Species). Many Norwegian municipalities are situated in mountain regions.
- The Min. of Environment is responsible for a long-term Terrestrial Monitoring scheme where some of the monitoring efforts are concentrating on mountain ecosystems
- From the management side, the most relevant activity on the species level might be the revisions of the Red List (the latest Norwegian Red List being "Norwegian Red List 1998" (DN-rapport 1999-3))
- On the ecosystem level, Norway has embarked on a plan to establish new National Parks and to expand a number of existing National Parks, the majority of these being situated in mountain ecosystems
- A National Data Bank for Biological Diversity is to be established in Trondheim in 2003
- Efforts to store taxonomic information in readily available databases at several Universities, Museums and other relevant research institutes in Norway after quality checking and updating is on-going ("the Museum Project"). The project was initiated by the Min. of Education and Research

8b. - Norway has not developed an overall policy for conservation and sustainable use of biodiversity in mountain ecosystems. However plans/policies relevant for mountain ecosystems/species exists e.g. protection of mountain areas, watercourses permanently protected against hydropower development, policy guidelines to safeguard permanently protected river systems against development for purposes

other than hydropower production, management plans for reindeer husbandry. In addition, land use is governed by the Planning and Building Act and by the rules set out in the Act and appurtenant regulations concerning environmental impact assessments.

- Norway has developed a rather elaborate system to determine and monitor which areas are far from any technical installations (>5 km), as well as the areas situated between 1 and 5 km, or <1 km away from such technical installations. The vast majority of such remaining areas in Norway are now found within mountain ecosystems

9b. Norway has adopted several of the principles of the ecosystem approach in mountain management, but the overall principles (no 1 and partly no 12) and the interconnections between the principles are not fully implemented (see also 8 a), Norway has ambitions to do so at a later stage, in conservation plans as well as in county planning.

White Paper no. 42 (see also 10b below) states that the principles for ecosystem approach will be applied for the Norwegian management of biodiversity. The Norway/UN Trondheim Conference in September 1999 on "The Ecosystem Approach for Sustainable Use of Biological Diversity" had the ecosystem approach as its main theme

10b. Strategy for biodiversity presented in Report to the Storting no. 58 (1996-97): Environmental Policy for a Sustainable Development. Joint Efforts for the Future (white paper; accepted by the Government on June 6, 1997.)

(<http://odin.dep.no/md/norsk/publ/stmeld/022005-040003/index-dok000-b-n-a.html>)

- Norway's State of the Environment (annual or biannual white papers), e.g. Report to the Storting no. 24 (2000-01): The Environmental Policy of the Government and the State of the Environment in Norway (<http://odin.dep.no/md/norsk/publ/stmeld/022001-040006/index-dok000-b-n-a.html>)
- Action Plan for biodiversity presented in: Report to the Storting no. 42 (2000-01): Biological Diversity. Sector Responsibility and Coordination (white paper; accepted by the Government on April 27, 2001)(<http://odin.dep.no/md/engelsk/publ/stmeld/022001-040019/index-dok000-b-n-a.html>)
The Action plan presents the governments most important priorities in a new management system for biodiversity and joint action for the period 2001-2005. This includes monitoring programmes and identification of areas of great importance for biodiversity. However mountain ecosystems are not among the high priorities in the management system in this period
- Report to the Storting no. 39 (2000-01): Outdoor Recreation (white paper; accepted by the Government on April 27, 2001.)

11b. Unfortunately, most information is only available in Norwegian:

- Various monitoring programmes, including in mountain ecosystems, have been worked out
- The Min. of Environment has been working on identifying indicator species/key species for various habitats
- A small number of recovery projects on threatened species have been undertaken, particularly related to bird species
- A few management plans related to conserved areas are also aiming at the recovery of threatened plant and animal species. A particular recovery project to save the Arctic Fox from extinction in the Norwegian mainland was initiated in 2001

Relevant documents include:

- Monitoring of Biological Diversity in Eight Ecosystems. Proposal from Eight Working Groups. – Utredning for DN 1997-7, DN, Trondheim (268 pp). ISSN: 0804-1504 ISBN: 82-7072-277-4
- National Master Plan for Monitoring of Biological Diversity. – DN Report 1998-1, Trondheim (197 pp). ISSN: 0801-6119 ISBN: 82-7072-289-8
- Min. of Environment 1998: Norway's National Report on Implementation of the Convention on Biological Diversity, Oslo (70 pp). ISBN: 82-457-0195-5
- Fremstad, E. & Moen, A. (eds.) 2001. Threatened Vegetation Types in Norway. – NTNU Vitenskapsmuseet Rapp. Bot. Ser. 2001-4: 1-231.
- Valuable Cultural Landscapes in Norway. National Registration of Valuable Cultural Landscapes. Part 4: Final Report. - Trondheim, 1994 (117 pp; in Norwegian).
- Mapping of Natural Habitats. Valuation of Biological Diversity in Norway. - Manual from DN no. 13-1999 (in Norwegian).
- Area Conservation and Management. – Manual from DN no. 17-2001 (in Norwegian).

In the national registration of valuable cultural landscapes and summer dairy farms 276 areas have been identified as particularly valuable, and about 10% of these are in mountain areas, mainly summer dairy farms.

- 12b. - Some elements in the Bern Convention and in the Ramsar Convention (e.g. “wise use of wetlands”), both of which Norway is a signatory, are relevant also for mountain ecosystems
- The Norwegian – Finnish – Russian Commission on watersheds at the national borders
 - Cooperation with Sweden on transboundary watersheds
 - Some collaboration with Sweden and with Finland on transboundary protected areas. In a few cases (like e.g. Femundsmarka) attempts have been made to develop joint management regimes between Norway and Sweden
 - Under the Nordic Council a four years project on implementation of the European Convention on Landscapes is being undertaken, and some of this work has relevance for mountain ecosystems
 - Under the Nordic Council of Ministers a publication called “Nature in the North” will be published during early 2003. This publication will include a summary of 100 years of conservation work in the Nordic area, and will have a separate chapter on mountains. Norway, Sweden, Denmark, Finland, Iceland and Greenland will be covered
 - Some relevant Arctic and Nordic cooperation and coordination like protection of carnivorous animals (brown bear, wolf, lynx, wolverine) is being undertaken
 - The Arctic Environmental Protection Strategy (AEPS) was established in 1991 with participation from Norway, Sweden, Denmark, Finland, Iceland, Canada, USA and Russia. Five permanent programmes have been established under the AEPS of which three may be relevant for mountain ecosystems:
 - * Arctic Monitoring and Assessment Programme (AMAP)
 - * Conservation of Arctic Flora and Fauna (CAFF)
 - * Sustainable Development and Utilisation (SDU)
- AEPS was fully integrated in the Arctic Council in 1997. The Arctic Council (with membership from the same eight countries as mentioned above) was established on September 19, 1996
- The Barents Cooperation between Norway, Sweden, Denmark, Finland, Iceland, Russia and the EU Commission was established on January 11, 1993. This collaboration has i.a. given support to projects to facilitate for domestic reindeer husbandry
- 13b. - The new Convention on domestic reindeer grazing between Norway and Sweden from 1972 is being renegotiated in 2002
- The Convention of June 3, 1981, on construction and maintenance of reindeer fences along the border between Norway and Finland
 - Norway is a signatory to the UN/ECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes
 - Norway makes use of the Guiding Principles for Sustainable Spatial Development of the European Continent adopted at the European Conference of Ministers responsible for Regional Planning (CEMAT)
- 14b. - For inland water ecosystems, conservation strategies and plans have been worked out
- A revision of the Plan for Conserved Watercourses was started in 2002, and about 60 watercourses, currently not on the list of conserved watercourses, and some of these with a major part of their catchments in mountain ecosystems, have recently been prepared for a broad hearing process
 - Some thematic conservation plans (e.g. on wetlands and on bird habitats) have relevance for mountain ecosystems
 - There are elaborate plans for expansion of existing National Parks and establishment of new National Parks in mountain ecosystems
 - There is an on-going nation-wide project on registration of biodiversity in municipalities
 - The Min. of Agriculture has given some support to landscape maintenance and development, including cultural landscape schemes to secure natural ecosystems adjacent to farmland
 - Through the project “Living Forests” the environmental and forestry authorities together with the private sector and other stakeholders have developed national criteria and indicators for sustainable forest management and standards for forestry operations, including restrictions for forestry activities near the timberline (“protective forest” schemes near the timberline)

- 15b. - For areas like hunting and sports fishing, there is an elaborate cooperation between government authorities and the private sector/NGOs. The dominating NGO in Norway on mountain tourism is the Norwegian Tourist Association (DNT). DNT has, i.a., worked out vulnerability analyses for selected areas in mountain ecosystems, particularly the relations between plans for further development of cottage construction, tracks and trails and the effects on wildlife, e.g. in Rondane, Tafjordfjella, Dovrefjell and Hardangervidda
- Relevant publication: Plan for Mountain Trails and Tracks in Norway, Part I. – DN-notat no. 10 (1994; 69 pp + annexes). ISSN 0802-1546 ISBN: 82-7072-134-4. Part II: Maps to DN-notat no. 10 (1994). – DN-notat 1996-3. ISSN 0802-1546 ISBN 82-7072-249-9
 - Efforts to ensure that the tourism in mountains is sustainable is also reflected in relevant Norwegian Acts like the “Act relating to Motorised Traffic in Marginal Land and Watercourses” (1977) under the Min. of Environment, and, to a lesser extent, the “Act relating to Reindeer Husbandry” (1978) under the Min. of Agriculture. Decisions to restrict the establishment of various technical developments in mountain areas might be based on the Planning and Building Act
- 16d. - Since 1995 a work has been going on to consider the need for establishing a Nordic Sami Convention, covering Norway, Sweden and Finland. This Convention might include questions related to land tenure, rights to natural resources, environmental issues and traditional Sami economic activities
- Norway is a signatory to the ILO Convention no. 169 of 1989 concerning indigenous and tribal peoples in independent countries
 - There are at present no restrictions on access to genetic material beyond the rules for harvesting from natural resources in general in Norway
 - In a wider perspective, Norway has generally opened up for the responsibility of the management of conserved areas to be delegated from the national or county level down to the municipal level
- 17b. - See also some relevant documentation under 11b
- Norway has one Cultural Heritage Site on the UNESCO List situated in mountain areas; the municipality of Røros
 - The Min. of Environment is working on a White Paper on cultural environment and cultural heritage to be published in 2003
- 18b. - This figure has not yet been established
- 19b. - 1.5 mill. NOK has been given to the Norwegian Tourist Association to celebrate the International Year of Mountains, resulting in a variety of activities
- A large Mountain Conference was held at Beitostølen in Norway in September 2002
 - An opening ceremony involving the Minister for Environment was held to celebrate the establishment of a new National Park, mainly situated in mountain areas (Forollhogna) as well as a major expansion of an existing National Park in mountain areas (Dovrefjell) during August 2002
