

FINAL REPORT

**Davos,
Switzerland,
16-19
September
2002**

EUROPEAN FORESTRY COMMISSION

Working Party on the Management of Mountain Watersheds

Twenty-third session

EUROPEAN FORESTRY COMMISSION

**WORKING PARTY ON THE
MANAGEMENT OF MOUNTAIN WATERSHEDS**

TWENTY-THIRD SESSION

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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
Rome, 2002

INTRODUCTION

1. The twenty-third session of the European Forestry Commission's Working Party on the Management of Mountain Watersheds was held in Davos, Switzerland from 16 to 18 September 2002. On 19 September a study tour was organized by the Swiss Government showing examples of avalanche and torrent control in Switzerland (see Annex D).

2. The session was attended by 30 delegates and observers from the following countries: Austria, Canada, Czech Republic, Finland, France, Germany, Iceland, Italy, Japan, Norway, Poland, Spain, Switzerland, United Kingdom and United States of America (see Annex C).

3. Ms M. von Ballmoos, representative of the town of Davos, opened the session by welcoming everyone to the town, which she described as being a centre of research, sport and recreation. Mr J. Krecek (Technical University of Prague), Chairman of the 23rd session, introduced Mr Werner Schärer, Director of the Swiss Agency for Environment, Forests and Landscape, and invited him to open the meeting in the name of the Swiss Government. Mr Krecek outlined the importance of this twenty-third session since it represented the fiftieth anniversary of the Working Party.

4. Mr Schärer welcomed all participants and stressed the importance of the twenty-third session of the Working Party, as it occurred on its fiftieth anniversary and during the UN International Year of the Mountains 2002. He also expressed his pleasure that Switzerland was chosen as host for the 23rd session, since it was important for a small Alpine country like Switzerland to exchange information and experience with representatives from other countries that face similar problems. He stressed the importance of learning from each other and making a positive joint contribution to the future management of mountain regions.

5. Mr D. McGuire, Secretary of the Working Party and Senior Forest Conservation Officer, FAO, apologized for the absence of Mr M.H. El-Lakany, Assistant Director-General and Head of the Forestry in FAO. He offered his congratulations to the Working Party and outlined the fact that due to the Working Party's efforts, decision-makers would have a better idea of how to effectively manage watersheds. Mr McGuire mentioned that the International Year of Mountains 2002 would be followed by the International Year of Fresh Water in 2003 and how this would help people understand the link that existed between mountains, freshwater, climate change and biodiversity. The International Partnership for Sustainable Development in Mountain Regions was described as a new global framework for collaboration on mountain issues and the important role the Working Party would be expected to play in that partnership was emphasized.

6. Prof. A. Göttle (Bavarian Water Management Agency) stated how he was delighted to see that within this twenty-third session a fifty-year-old tradition of international cooperation in the field of Mountain Watershed Management was continued. He gratefully acknowledged cooperation of FAO with IUFRO, the International Union of Forest Research Organizations, and stated that the massive engagement in this field deserved special thanks and appreciation. He described IUFRO's vision as strengthening science-based sustainable management of the world's forest resources for economic, environmental and social benefits.

ADOPTION OF AGENDA

7. The meeting considered the proposed agenda, and agreed to proceed according to attached programme of work (Annex A1).

Session A

“Catchment Area“- Watershed Management

Modern Watershed Management: a contribution to the future sustainable development of mountain areas

8. Mr McGuire, as chairman of Session A, introduced the speakers. Mr Engler, member of the Graubunden Cantonal Government, presented a political perspective on this topic. He described the canton’s important role in terms of water: its water bodies representing a characteristic feature of its landscape, they are also fundamental to its life and the economy. Protecting residents and tourists against natural hazards is also high on the priority list.

9. Mr H. Scheier (University of British Columbia) illustrated a scientific perspective: he presented his paper which addressed four issues related to integrated watershed management with an emphasis on cumulative effects, the problem of scaling processes from headwaters to watershed, the opportunities of scaling out and comparing watersheds at the regional and global scale, and adaptation processes needed in view of increased climatic variability. He stressed the increasing importance of watershed management to address serious problems of water supply and food supply as the world’s population continues to grow. Examples were then provided to demonstrate how GIS based nutrient budgeting techniques could be used to link agricultural intensification to water quality. He called for a new approach to watershed management, which calls into question many of the traditional ways of thinking that have dominated in the past.

Session B

Lessons learned from the past: a basis for the Future Management of Mountain Watersheds

10. During this session Mr Vischer who spoke about the “Tricky question of equilibrium: lessons from the rivers”, describing the state of rivers throughout time, and how it is impossible to create a permanent state of equilibrium in flooding events, since flooding events are not distributed randomly over the centuries. He noted that a state of equilibrium for protection purposes is often sought by human beings living adjacent to a river or torrent, whereas equilibrium may not necessarily be a natural phenomenon.

11. Prof. C. Pfister (Professor of Economic Social Environmental History at the University of Bern) talked about the “Lessons learned from Past Natural Catastrophes”, a historic overview of the relationship of past societies with their environment. The presentation stressed the importance of communication as a key factor in generating greater public awareness and support for watershed management activities.

Session C

Risk Management in Catchment Areas

12. Dr. Hegg (the Swiss Federal Research Institute WSL) talked about the “The Influence of Different Land Uses in a Catchment Area on Natural Hazards”. He emphasized the direct and indirect influence of land-use on natural hazards: how forests influence rockfall and avalanches, with a stabilising effect of trees on snow cover. There is a difference between the direct influence that trees for example have on slowing down rockfall, while an indirect influence comes from soil properties. He emphasized how land use practices have a high potential in influencing natural hazards.

13. Ms M.L. Paracchini from the Joint Research Centre of the European Commission presented the work carried out by the Centre on “Mapping and Characterisation of Mountain Watersheds using GIS and remote sensing”, a joint research EC project. The project stemmed from the need to develop a pan-European database of drainage networks and catchment boundaries and the development of a coding system for rivers and catchments.

Session D

Benefits of Watershed Management for lowland areas

14. Mr McGuire outlined the experiences made by FAO with regards to watershed management: “Preparing the next Generation of Watershed Management Strategies and Approaches”. He presented this work as an important contribution of FAO to the International Year of Mountains, which involves reviewing and assessing the past ten years of watershed management field activities within and outside FAO, and drawing lessons from this experience. The study is expected to produce guidelines for developing the next generation of watershed management field programmes.

15. Prof. A. Göttle (Germany) shared his “Experiences made in Bavaria” where erosion control, flood retention, regulation of land use, torrent and avalanche control works are general tools of great importance for the security of population, settlements and infrastructure in alpine areas. Mr G. Fiebiger (Austria) illustrated the Austrian approach which is based on integrated watershed management on a large scale. Future requirements will come from the management of mountain watersheds and consequent benefits for lowland areas.

16. Following these interventions, a number of participants made comments referring to various aspects of watershed management and mountain development in their countries.

Session E

Climate Change and its Impact on the Management of Mountain Watersheds

17. The session began with a presentation by Mr B. Van Haveren of the U.S. Bureau of Land Management, who presented a paper on “Social and Institutional Dimensions of Mountain Watersheds”. He stressed the need for a human dimension in watershed management, using the example of Beaver Brook Watershed, Colorado where the attention has been shifted from biophysical issues to human dimensions in terms of land management. Education was stressed as a means to help people understand the water issue, by helping them to become part of the solution. In the USA the institutional responsibility is moving from Federal to State to local levels, so the problems related to water quality are closer to the people.

Session F

Country Reports and Observer Reports

18. Mr Krecek opened this session for presentation of National Reports by delegations from the following countries: Austria, Czech Republic, Finland, France, Iceland, Norway, Poland, Spain, United Kingdom and Switzerland. Several major issues were raised during these presentations including natural disaster management, changing land ownership structures, institutional aspects of risk prevention and management of flooding catastrophes.

19. Austria spoke about the objectives and strategies of the management of natural disasters, including risk analysis and planning, regional and national studies as well as management and active protection measures in catchments and risk areas. The Czech Republic noted problems such as tree species composition and the high number of deer in their forest as well as the changes in ownership structure in the last decade due to the land being handed down from the descendants, decreasing the average size of holdings.

20. Finland stated how all forestry organisations have renewed their management guidelines to promote sustainable forestry with main goals being to maintain good water quality, preserve biological diversity of water eco-systems and give due consideration to water courses.

21. After the first set of presentations, a brief discussion was held on what would be the main task for the future. Austria indicated that forest protection and prevention of natural disasters was a

priority, whereas in the Czech Republic the aim was to improve awareness on policy issues and a need for better communication and collaboration among those who are responsible for forestry.

22. France described recent natural phenomena in that country, mentioning the floods of the 8 and 9 September in the South of France (with 21 associated deaths) and the institutional aspects and prevention of natural risks by rehabilitation of mountain slopes.

23. Iceland for the first time in the Working Party's history participated in the 23rd session of the Working Party. Mr J. Loftsson described the situation in his country, stating that woodland cover in Iceland has decreased from 30% at the time of settlement to 1.2% currently, due to grazing. The aim emphasised in the last ten years is to increase timber production and to use forests to stop erosion. Norway noted that since the last meeting there have not been any natural disasters in that country. The emphasis is on legislation, policies, awareness rising and research.

24. Poland's presentation focussed on problems of erosion, air pollution, climate change and the negative effects they are having on Polish forests. To achieve better natural water retention in order to limit floods and erosion processes in mountain forest watershed in Poland, the improvement in the quality of forest ecosystems is necessary.

25. Spain's representative described the main objectives of the Spanish National Plan which includes slope protection, erosion control, improvement and regulation of watershed hydrology, restoration of the vegetation cover, quality of water, soil, vegetation and biodiversity rehabilitation and defence against floods. She mentioned the main criteria adopted in the selection of areas including methodological phases in the conservation and management of watersheds.

26. The representative of the United Kingdom stated that the U.K. after having reviewed the resolution S4 ("Adapting the Management of Mountain Forests to New Environmental Conditions") and taking into account developments since the Strasbourg Ministerial Conference, is now ready to sign the Resolution at the fourth Ministerial Conference on the Protection of Forests in Europe in Vienna next year. He went on to describe the UK's protective work in the past as well as the main problems that need to be solved. Other challenges include implementing the requirements of the EC Water Framework Directive, and ensuring that forestry contributes to sustainable rural economies in the mountainous areas of the U.K. He also referred to the outcome of discussions on Forestry and Mountain Development, held during the 3rd European Mountain Convention in Inverness Scotland, May 2002.

27. The host country representative presented the Swiss perspective: the key to maintaining mountain areas is to combine all aspects from socio-economic to environmental. Switzerland has a policy of prevention in terms of protection against natural disasters, which means taking all the necessary measures. The aim is to create a culture of integrating risk in people's perspectives of where they live. Finance for the protection and management of natural disasters comes from public and private entities. The issue was raised of how to deal with greater expectations by the public for security and protection from natural hazards, while facing both technical and financial limits to provide such protection.

28. Mr P. Zingari, Director, European Observatory of Mountain Forests (EOMF), reported on progress of the Resolution S4 on 'Mountain Forests' of the Ministerial Conference on the Protection of Forests in Europe (MCPFE). After an introduction on the EOMF as a permanent forum to bring together actors and propose actions on mountain forest-related issues, he outlined the main features and achievements of the S4: the Resolution is a high level commitment signed by 25 countries and the European Commission; EOMF, in collaboration with FAO and IUFRO, has the mandate for its co-ordination; a White Paper was produced as a framework based on five actions oriented towards: participation, establishment of contracts, development of economic approach to management, promotion of the quality of products and services and definition of integrated management plans.

29. Mr Zingari also reported on the FAO-EOMF European Regional Meeting on the Next Generation of Watershed Management Programmes, held in Megève, France, 4 September 2002. A group of 29 professionals from 20 countries and 11 international organizations gathered to assess and identify achievements and existing gaps in watershed management programmes in Europe, identify lessons learned and guidelines for the formulation and implementation of the next generation of watershed management programmes. Discussions were held on innovative approaches/methodologies, research and research-implementation, and technology transfer, economic and social considerations including participation, environmental services, policies and legislation relevant to conservation and sustainable use of water resources. Finally a proposal was made by participants to raise high level awareness on the need of integrated and participative watershed management in a way that includes preventive, long-term and scale adapted approaches in the perspective of the EU enlargement and policies reform.

30. Finally, Mr Zingari, reported on the Congress on Water in Mountains: Integrated Management of High Watersheds, held in Megève, 5-6 September 2002. 450 delegates from 30 countries considered scientific, technical, economic and policy on water in mountains. Recommendations included: watersheds as operational units, long-term approaches, participation and concertation, transparence, consensus and co-responsibility, integrated systems of observation, monitoring, research, specific financing schemes, based on the participation and solidarity of users and polluters, structured and commercial management of collective uses, equitable costs to users

31. Mr Fiebiger, IUFRO research group 8.04 in natural disasters and task force on forest in sustainable mountain development, recalled the activities since 1998 and then gave an overview on the next steps: landslide control, (May 2003) World Forestry Congress FAO, Quebec (September 2003) among others. Concerning the Task Force he stressed that there will be a second phase starting with a Workshop in 2003 (Galtuer, Austria, June), an ad hoc meeting in Quebec on Mountain Forests, Watersheds and Risks in collaboration with EOMF, and a review at the 24th Session of the EFC/FAO Working Party in 2004.

Final Resolution

32. Mr Greminger presented a draft resolution to participants for discussion, which highlights the importance of integrated watershed management for the sustainable development of the mountain areas of Europe. The draft resolution was discussed, revised and finalized during this plenary session, with the intent of including it as one of the outcomes of the 23rd session. It lists several measures which are deemed important for maintaining intact mountain areas to meet social, ecological and economic needs in the future. The resolution is attached to this report as Annex B.

Open Discussion

33. The Chairman, Mr Krecek, introduced the topic by asking the following question: “What benefits do you expect from the Working Party?” Delegates answered by saying that there is a need to share knowledge between countries. Mr Schreier emphasized this point in his presentation, pointing out the importance of knowledge sharing in particular from developed countries to the developing world.

ELECTION OF OFFICERS OF THE WORKING PARTY

34. The twenty-third session of the Working Party elected Mr Peter Greminger (Switzerland) as Chairman, Mr Antoine Hurand (France) as first Vice-Chairman and Mr Piergalski (Poland) as second Vice-Chairman.

DATE AND PLACE OF THE 24TH SESSION

35. Austria and Finland both offered support in terms of hosting the twenty-fourth session. Following the idea to keep Eastern European countries involved in the working party, a final recommendation was then made to host the twenty-fourth session in Krakow, Poland. Mr Piergalski will therefore initiate the appropriate formalities necessary to host the next working party session in Poland in 2004.

OTHER MATTERS

36. Mr Peter Greminger gave a brief introduction on the sites to be visited during the study tour around the area of Davos, Oberalp, Gotthard and Lucerne (see Annex D).

CLOSING OF THE 23RD SESSION OF THE WORKING PARTY

37. Mr Greminger, took the floor to make closing remarks, where he thanked FAO for their support, Mr Krecek for his chairmanship, and the representatives of Poland for taking responsibility to hold the next Working Party session in Krakow. There was a special thanks to Hans Schreier for his positive input, and to the participants, as well as a thank you to the interpreters for a job well done.

AGENDA

1. Opening of the Session
2. Adoption of the Agenda
3. Report on inter-sessional activities following the 22nd Session of the Working Party
4. The contribution of watershed management to the sustainable development of mountain areas
5. Lessons learned from the past 50 years of watershed management: impact of the Working Party
6. Theme A: *Risk Management in Catchment Areas*
7. Theme B: *The Importance of Watershed Management for Lowland Areas*
8. Progress in Watershed Management and Sustainable Mountain Development
 - a. Presentation of National Reports
 - b. Discussion
9. Future needs for sustainable management of mountain watersheds – Working Party Resolution
10. Programme of the Working Party – defining inter-sessional activities
11. Election of officers of the Working Party
12. Date and place of the 24th Session
13. Any other matters
14. Adoption of the report
15. Closing of the session

PROGRAMME OF WORK**Session A “Catchment Area” Watershed Management**

Modern Watershed Management a contribution for the future sustainable development of mountain areas

Session B

Lessons we learned from the past: a base for a Future Management of Mountain Watersheds

Session C

Risk management in Catchment Areas

Session D

Benefits of Watershed Management for lowland areas

Session E

Climate Change and its impact on the Management of Mountain Watersheds

Session F

Country Reports and Observer Reports

Final Resolution**Open discussion****Election of Officers of the Working Party****Date and Place of the 24th Session****Other Matters****Closing of the 23rd Session of the Working Party****Excursion Risk management in the local area of Davos****Study Tour- Special Programme, examples of Avalanche and torrent control in Switzerland. Davos-Oberalp-Gothard-Lucerne-Zurich**

FINAL RESOLUTION

Mountainous areas provide the basis of life for millions of people in Europe. For example, in the 15 countries of the EU 54 million people live in mountains and mountainous areas account for 38.8 % of the total EU land area. Some 14 million persons live in 5.800 municipalities in the Alpine Arc that is 1.200 km long and 200 km wide and stretches from Vienna to Nice; and there are also important mountain areas in other parts of Europe.

Mountainous areas provide employment, transit zones, water reservoirs, landscape, wilderness, natural parks and reserves, recreational and sport areas, open spaces or simply nature.

But mountainous areas are also vulnerable to natural catastrophes and hazards as well as to global change.

Our generation has the responsibility to ensure that our mountain heritage is passed along to future generations in such a way that it will provide the basis for their livelihoods, while maintaining its specific characteristics.

The 23rd session of the Working Party on the Management of Mountain Watersheds considers that the concept and practice of integrated watershed management are necessary for sustainable development in the mountain areas of Europe. The following measures are important for maintaining intact mountain areas to meet social, ecological and economic needs in the future:

- Land use in mountainous areas should be adapted to local natural conditions in order to minimise danger to human life. Areas highly threatened by erosion and natural hazards such as avalanches, debris-flow, rockfalls, landslides and floods are not appropriate for human settlements and infrastructure.
- To ensure sustainable development in mountainous areas it is essential to pay simultaneous consideration to agriculture, forestry, land-use planning, transport, trade, tourism, conservation of nature, landscape and cultural heritage, water management, and protection from and prevention of natural hazards. Cross-sectoral approaches are required, and therefore, land use planning should be integrated rather than sector-based.
- Mountain ecosystems are fragile and particularly vulnerable. They suffer from the adverse impacts of soil erosion, forest fires, air pollution and other phenomenon, as well as the impact of globalisation, including climate change. Governments have a responsibility to fulfil their international obligations, in particular in the difficult area of air pollution control and climate change and to implement the United Nations Framework Convention on Climate Change and the Kyoto Protocol.
- All preventive efforts to ensure the protection against natural hazards in catchment areas should be co-ordinated in such a way that the residual risk for human beings, infrastructure and property is minimised for all types of natural hazard.
- Mountain forests provide a wide range of goods and services and are necessary for human settlements in many areas. Employment linked to all these activities is important, not only for the regional economy, but also to prevent out-migration from mountain areas. Therefore, sound management and protection of mountain forests is of vital importance to the sustainable development of many mountain areas and the services that mountain forests provide to the public should be fairly compensated through appropriate financial mechanisms at regional and international levels.

- A greater effort should be made to extend the knowledge generated in the mountains of Europe to other watersheds in the rest of the world. The need to exchange at the international level experience and progress in knowledge on mountainous areas is greater than ever.
- Education, capacity-building, training and research can make important contributions to sustainable development in mountain areas. Specific issues on mountainous areas must be studied critically in greater depth when making plans for the future. Better use of information technology tools should be made, particularly in the teaching area.
- Continuous, long-term monitoring of ecological and hydrological phenomena is necessary for basic understanding of watershed processes.
- Close co-operation and shared responsibility in watershed management between local, regional and national authorities, at appropriately decentralised levels, is necessary.

Davos, Switzerland
18 September 2002

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PROGRAMME OF STUDY TOUR**Wednesday, 18 September 13.30-19.00****Risk Management Excursion**

In the afternoon an excursion in the vicinity of Davos was made showing an example of debris flow measures, avalanche risk management, as well as the management of protective forests.

The excursion was concluded with a visit at the Swiss Federal Institute for Snow and Avalanche Research, where a number of projects were presented.

Thursday, 19th September**Examples of Avalanche and Torrent Control in Switzerland**

A short stop at Versam was made, showing rockslide of Flims at the Grand Canyon of Switzerland, a large gorge which the river Rhein has carved out amongst the limestone, several hundred metres deep.

Visit of Trun, showing examples of avalanche, flow and the flood barrier of Rabius, where the goal is the protection of human lives.

The study area of Tschamutt was visited: this study area contains afforestations of different areas.

Lunch at Natschen, Oberalp pass.

A short historical view at devil's bridge: travelling over the Alps during the middle ages.

A new avalanche protection concept at Bruusthal, Uri, Max Klay of the Centre of Natural Hazards, Swiss Federal Railway explained the new concept of avalanche protection which has been adopted by the Swiss Federal Railway.

Last stop before Zurich showed a beautiful view of the lake of Lucerne, the heart of Switzerland.