

**UNCSD secretary general's report on chapter 13: Managing fragile  
ecosystems sustainable mountain development**

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**I. KEY OBJECTIVES**

1. This report focuses on a limited number of key objectives of chapter 13 of Agenda 21, including those which are considered the most relevant in the post-UNCED context and which have been identified as "priority concerns" in chapter 13 follow-up. These objectives are related to Programme Area A: Generating and strengthening knowledge about the ecology and sustainable development of mountain ecosystems; and Programme Area B: Promoting integrated watershed development and alternative livelihood opportunities. The two areas are often dealt with together in the framework of an integrated ecosystems approach to sustainable mountain development. However, key objectives dealt with in this report go beyond those identified in these two programme areas of chapter 13 and include new themes which have come to light more recently.

2. More specifically, chapter 13 focuses mainly on the following objectives:

- (a) Raising awareness of the importance of and improving understanding of sustainable mountain development issues at global, regional and national levels;
- (b) Protecting natural resources and developing technical and institutional arrangements for natural disaster reduction;
- (c) Strengthening a global information network and database for organizations, governments and individuals concerned with mountain issues;
- (d) Strengthening country capacity to improve planning, implementation and monitoring of sustainable mountain development programmes and activities;

- (e) Combating poverty through the promotion of sustainable income-generating activities and improvement of infrastructure and social services, in particular to protect the livelihood of local communities and indigenous people; and
- (f) Formulating and negotiating regional or sub-regional mountain conventions and possibly developing a global mountain charter.

## II. SUCCESSES

3. As thinking about sustainable mountain development has evolved over the five years since Rio, the issues raised in chapter 13 (which is often referred to as the "Mountain Agenda") have expanded beyond the original themes of the chapter to include, for example, new emphasis on conservation, culture, sacred values and landscape diversity. The element of spirituality surrounding mountains and the often special relationship between mountain peoples and the land they live on and care for has gained greater recognition over recent years and has become an essential driving force in the movement to conserve mountain environments and cultures. Recently, especially in Africa, the contribution of mountain ranges to water resource flows, and more specifically in the chain linking water to food security, has been highlighted. There is also increasing recognition of the importance of mountain areas in terms of biodiversity conservation, economic potential and protection of downstream interests. This has led to a greater willingness to address development and conservation needs through investment programmes in areas that have traditionally been neglected in national level development planning.

4. Progress has been made in creating greater awareness of the "Mountain Agenda" and improving coordination of efforts to protect fragile mountain ecosystems and promote sustainable mountain development. This has been achieved largely as a result of the international and regional intergovernmental and non-governmental organization (NGO) consultations which have provided focus on key mountain issues and led to recommendations relevant at both global and regional levels. Regional intergovernmental consultations have been held for Asia (1994), Latin America (1995), Europe (two sessions, 1996) and Africa (1996); a regional NGO consultation was also held for Europe (1996). Other important meetings include the International NGO Consultation on the Mountain Agenda held in Lima, Peru in February 1995, and other regional, sub-regional and national initiatives such as the Second International Symposium on "Sustainable Mountain Development: Managing Fragile Ecosystems in the Andes" (Bolivia, 1995); the International Symposium "Karakoram-Hindukush-Himalaya: Dynamics of Change" (Pakistan, 1995); the International Symposium on Agricultural Development in Mountain and Hill Areas (China, 1996); Rwenzori mountains conference (Uganda, 1996); and the International Conference on "Ecohydrology of High Mountain Areas" (Nepal, 1996). In addition, awareness of the importance of transboundary cooperation in mountain protected areas has

been increased as a result of the Transboundary Mountain Protected Area Workshop held in Australia in 1995.

5. New institutional arrangements at global and regional level have also contributed to progress in achieving and improving communications networking and in providing an information clearing-house function. This has been achieved in part through the creation in 1995 of the Mountain Forum, a network of organizations and institutions with a shared interest in sustainable mountain development. With major financial support provided by the Swiss Government, the Mountain Forum operates primarily as a decentralized structure with regional focal points established to coordinate networking activities. The Consortium for the Sustainable Development of the Andean Ecoregion (CONDESAN) convened by the International Potato Center (CIP), a member of the Consultative Group on International Agricultural Research (CGIAR), has been selected as the focal point for Latin America and the Caribbean. The International Centre for Integrated Mountain Development (ICIMOD) is coordinating networking in Asia and the Pacific, both at the regional level, through the Asia Pacific Mountain Network, and at the sub-regional level since establishment of the North and Central Asia Mountain Network. Together with The Mountain Institute, these organizations make up the Mountain Forum's Interim Facilitating Committee, which has been set up at the global level with the specific purpose of assisting in building the network. Regional networks are also being established in Europe and Africa, mainly through NGO efforts. The Mountain Forum is one of several innovative partnerships and alliances being studied under the Global Excellence in Management (GEM) Initiative by Case Western Reserve University in the United States. Documenting the way in which the Mountain Forum is expanding capacity beyond its own organizational boundaries is expected to be an important outcome of the study. Another important example of new regional cooperation is the Asociación de Montañas Andinas, whose main objective is to contribute to implementation of Chapter 13 in the Andes.

### III. PROMISING CHANGES

10. New forms of partnership are coming about as a result of increased collaboration and interaction between the public and private sectors in which governments; non-governmental and intergovernmental organizations have found common ground and engaged in constructive dialogue. There has been a concerted and participatory effort, particularly over the past three years, to amplify the original aims and objectives of Chapter 13 by forging consensus on priorities, and identifying the differing strengths and capacities of public, private and NGO sectors to contribute to implementation. In addition, there has been greater emphasis on including local populations and community groups in identifying and planning mountain development activities. New partnerships are also being realized between mountain research and development interests. International research institutes such as CIP, ICIMOD,

the International Centre for Research in Agroforestry (ICRAF) (in particular through the African Highlands Initiative), and the joint United Nations University (UNU)/International Mountain Society (IMS) project, which have either a specific mountain focus or include strong mountain research programmes, have been active members of the interagency network on mountains. This has served to strengthen the linkages and interaction between mountain research and development interests. Organizations including the World Conservation Union (IUCN), the International Center for Alpine Environments (ICALPE) and the International Livestock Research Institute (ILRI) have increased their involvement in mountain conservation and development, and developed new partnerships through their roles in planning and implementing the regional intergovernmental consultations in Europe and Africa.

11. Although there are still relatively few activities which have been initiated directly as a result of Chapter 13, the willingness of most regions of the world to engage in intergovernmental and non-governmental consultations on the topic of sustainable mountain development has been an important step in implementation since UNCED. This process has allowed for clearer definition of the challenges facing each region and possible responses to them, and a stronger sense of involvement and commitment on the part of governments and other concerned stakeholders as the discussion has focused on issues of greater direct relevance at the regional and national level. This consultation process has been carried out over a relatively short period, only having begun in late 1994, with the majority of meetings having taken place during 1996. Although so far there has been insufficient interest by governments of North America to hold an intergovernmental consultation there, an NGO-organized meeting to which governments would also be invited, is currently under discussion. As a result of these regional meetings, greater activity is expected at national and regional levels in terms of specific mountain development and conservation programmes and reinforced institutional arrangements. Regional networks, in addition to those in Asia and Latin America, are also being established in Europe and Africa, following the consultations held in 1996. In accordance with the recommendations of the third session of the Commission on Sustainable Development (CSD), upon completion of the regional consultations a wider international meeting on sustainable mountain development is expected to be held. Several governments have already expressed their support for holding such a meeting, the objectives of which, however, would need to be clearly defined and perceived as timely and relevant to on-going implementation to the countries and organizations involved.

12. The maintenance and generation of database and information systems to facilitate the integrated management and environmental assessment of mountain ecosystems has seen little progress to date, however this is expected to change in the near future given the new and evolving institutional arrangements and new technologies becoming available for this type of work.

In the area of conventional dissemination of scientific and developmental information on mountains, the quarterly journal Mountain Research and Development, co-published by UNU and IMS, continues as the only scholarly publication of its kind world-wide.

13. Improvements to the ecological knowledge base regarding technologies and agricultural and conservation practices in the mountain regions of the world have been slow but recently increasing. Most conservation and development programmes in mountain areas now contain specific components aimed at improving databases on biological resources. On the other hand, economic, sociological and cultural information are still largely unavailable. Greater emphasis is being placed on the importance of understanding and promoting appropriate indigenous and locally adapted technologies.

14. Transnational cooperation has also been improving. There is an increased willingness to work across national borders marked by mountain chains, in particular, for scientific reasons such as to study the behaviour of migratory species, for environmental conservation purposes, and for ecological/economic reasons among countries sharing major water courses. Transborder collaboration among biosphere reserves is a new emerging topic in UNESCO's "Programme on Man and the Biosphere", in particular in Eastern and Central Europe. There is also a need for greater cooperation among countries sharing water resources, especially in many regions of the world where there is growing demand for water.

15. Work has progressed on the better understanding and dissemination of information regarding environmental risks and natural disasters in mountain ecosystems. At the twentieth session of the FAO/European Forestry Commission Working Party on the Management of Mountain Watersheds, held in Lillehammer, Norway in July 1996, the topic of mitigation of natural disasters in mountain areas received significant attention, both in the European and global context. This topic was also dealt with in depth at the June 1996 meeting of INTERPRAEVENT, a group of European experts meeting in Garmisch, Germany to discuss cooperation in research, technology transfer, planning and development relating to natural resources management in mountain areas, where protection of alpine areas against natural disasters (e.g. floods, avalanches and mudflows) was discussed at length. ICIMOD has also been very active in this field and has recently launched a training programme for mountain risk engineering in the Himalayas. Also, the IUFRO Working Group on Natural Disasters plans to hold a meeting in the framework of the 11th World Forestry Congress (Antalya, Turkey, 13-22 October 1997). The meeting will consider, inter alia, hazard prevention measures in mountain regions. This cross-cutting issue is expected to receive increasing attention in the near future as a result of greater awareness created through international initiatives, such as the 1994 World Conference on Natural Disaster Reduction,

and new and on-going efforts by international bodies such as those mentioned above.

16. Perhaps most importantly, and underlying most other factors which have contributed to the relatively successful implementation of Chapter 13, is the notion of commitment. Many of those who advocate the sustainable development and conservation of mountain regions and peoples speak with conviction and deep emotional commitment to many of the causes espoused by the mountain chapter. The various stakeholders working on mountain related issues are they from local communities, NGOs, governments, or international organizations, often share a common view of the importance and uniqueness of mountain areas and cultures and carry out their work with a strong sense of dedication. Their conviction, and the partnerships that were forged prior to Rio, were instrumental in gaining chapter status for mountains under Agenda 21 and in maintaining close collaboration throughout the post-Rio period.

#### IV. UNFULFILLED EXPECTATIONS

17. Several objectives of Chapter 13 remain unfulfilled, or have seen little or no progress towards implementation. These include:

##### (a) Survey work

18. Adequate progress has still to be made in undertaking integrated survey work of the different natural resources and their use in mountain ecosystems and carrying out related activities needed to strengthen knowledge about the ecology of mountain ecosystems. Although greater progress is being made at the regional level, a longer time frame than the five years since Rio will be required to achieve a more thorough understanding of the knowledge base globally.

##### (b) National level institutional arrangements

19. Although the issue has been raised in various fora since UNCED, there continues to be a lack of new institutional arrangements at national level to enable a more comprehensive and integrated approach to mountain conservation and development. In spite of increased international attention since UNCED (through Chapter 13 follow-up) on the need for reform, examples of departments, programmes or legislation that deal with mountain issues in a more integrated way are still rare. This has been an inhibiting factor in carrying out comprehensive national mountain development planning;

##### (c) Special attention to mountainous island countries and landlocked countries

20. Little attention has been paid so far to the need for specific consideration for mountainous island countries and landlocked mountainous countries. Island countries face a unique situation, especially with regard to water resources.

Greater efforts are needed to better understand the technical issues facing this category of countries.

## V. EMERGING PRIORITIES

21. Upon completion of the current consultation process for Chapter 13 follow-up in late 1996, many of the issues concerning sustainable mountain development, which have so far been discussed in rather general terms at the global level, will have also benefited from discussion in a regional context, allowing for further elaboration, refinement and regionally specific proposals for action. This process has allowed an increased focus on specific objectives of Chapter 13 and better understanding of how they can best be achieved. Some key objectives which have emerged during UNCED and the five-year review period, and for which it now seems likely that obstacles to achievement can be overcome, include the following:

### (a) Special status of mountain areas

22. One of the important achievements of the Chapter 13 review process has been greater recognition of mountain areas as special and distinct from lowland areas, and therefore worthy of special attention. This recognition is seen as a key factor in the recent change of attitude of governments, intergovernmental organizations and NGOs to pay greater attention to mountain conservation and development and in the mobilization of the resources that will be needed for increased investment in mountain areas. Greater action at national level is required, including, for example, formulation of national mountain development plans as part of national development plans.

### (b) Legal and institutional mechanisms

23. There is also greater recognition of the need for new or reinforced legal mechanisms (charters, conventions, national legislation, etc.) to protect fragile mountain ecosystems and promote sustainable and equitable development in mountain regions. Additionally, governments, IGOs and NGOs agree that more suitable institutional mechanisms are required to assure an integrated approach in view of the complexity of mountain ecosystems and the socio-economic issues at stake.

### (c) Investment in mountain development and conservation

24. More mountain-specific investment programmes and greater mobilization of financial resources for mountain development and conservation programmes will be required in order for real progress to take place on the "Mountain Agenda". In some cases this may mean formulating and financing programmes which are focused exclusively on mountain areas; other situations may lend

themselves to expanding conservation and development programmes that have been designed for lowland areas to include mountain areas as well. There are promising signs of greater willingness on the part of governments to increase investment levels in mountain areas, which have historically been neglected. In addition, bi-lateral and multi-lateral donors have expressed greater willingness to assist mountainous developing countries in elaborating and implementing mountain development plans and programmes, in accordance with increased attention being given to mountain regions and a redefinition of priorities. Greater investment potential in upland areas is motivated not only by the need to protect downstream infrastructure and populations, but also by the realization of the importance of economic development of mountain populations, for their own benefit and the potential contribution to national economies, as well as by an increasing awareness of the importance of biodiversity conservation.

(d) Resources flows

25. Related to (c) above, there remains the need for clearer understanding of resource flows to and from mountain areas which will lead to increased income to mountain communities and a fairer distribution of earnings from natural resources exploitation and services provided in mountain areas. Increased attention is already being paid to this important issue, as evidenced by the electronic conference hosted by the Mountain Forum in 1996, entitled "Paying for Mountains: Innovative Mechanisms and Promising Examples for Financing Conservation and Sustainable Development". The increased attention being paid to this issue, especially as certain mountain resources (e.g. water) become more scarce and acquire greater economic value, is expected to result in more studies undertaken to improve understanding of the overall flow of resources and services.

(e) Status of women and children

26. The need for greater empowerment, equity and equality of mountain women has been expressed as an important concern throughout the period of UNCED and Chapter 13 follow-up. These issues are expected to receive greater attention in terms of policy, legislation and institutional reform with growing awareness and recognition of the role and needs of women related to mountain development. A recent publication by UNICEF (Children, Women and Poverty in Mountain Ecosystems, New York, 1996), produced in collaboration with UNU and IMS, is already drawing attention to the basic causes of poverty in mountain areas and the need for policy revisions.

(f) Cultural integrity and biological diversity

27. There is growing recognition of mountain areas as valuable sites for preserving cultural integrity and conserving biological diversity. This has come

about through increased awareness of specific mountain cultures and their important role in maintaining mountain ecosystems, and the greater recognition of endemism of plant and animal species in mountain areas. More concerted action is needed to address these increasingly important areas of concern.

(g) Monitoring progress

28. As the "Mountain Agenda" moves forward and mountain development and conservation efforts grow, it will be necessary to be able to gauge progress and the extent to which it is sustainable. An enhanced ability to carry out assessment and monitoring of mountain development and conservation activities will be required. The development of a set of criteria and indicators for sustainable mountain development has been underway since late 1995. This work is currently being refined with the aim of providing a practical tool for use at the national or sub-national level.

(h) Exchange of experience and information collection and dissemination

29. More direct exchange of experience and information, both among mountain people themselves and among other resource management practitioners working in mountain areas is needed. Exchange visits between groups of farmers from neighboring upland communities have proved to be among the most effective means of stimulating new ideas and transferring knowledge in many mountain conservation and development projects throughout the world in recent years. The networks which have been created over the past few years, especially through activities of the Mountain Forum and from regional intergovernmental and NGO consultations, should be fully exploited to stimulate and enhance this type of direct exchange at all levels. There is also a need for greater accessibility of existing information to end-users, both at policy and operational levels. In fact, knowledge and information dissemination was identified at the 1996 European Intergovernmental Consultation on chapter 13 as a priority area to be addressed. Some key issues raised include: the need to standardize data and data collection; greater accessibility of scientific data to decision-makers; the need for improved inter-ministerial communication on mountain issues; and a need for more interdisciplinary and applied research on mountains.

(i) Food security

30. As highlighted at the World Food Summit held by FAO in Rome in November 1996, the issue of food security has become a top priority for the global community. Accordingly, efforts to eradicate hunger and malnutrition are expected to receive greater attention under the mountain chapter, along with the overall objective of poverty alleviation in mountain regions. New initiatives in this area should focus specifically on strategies to enhance food security in a

sustainable manner, inter alia, through the sustainable flow of water resources and their efficient use for agricultural and other production systems.

(j) Mountain forests

31. As new interest and attention is being devoted to the forest policy debate, especially since the establishment by the CSD of the Intergovernmental Panel on Forests, new opportunities are available to further discuss the important role played by forests in mountain areas with respect to issues such as hazard prevention, biodiversity conservation and livelihood opportunities. New institutions and fora, including the European Observatory on Mountain Forests and the IUFRO Task Force on Forests and Mountain Development, have recently been established to focus specifically on these types of issues. FAO is also giving greater recognition to the importance of forests in mountain regions and is currently in the process of preparing a publication on the management of mountain forests.

Notes

1/ This report reviews progress made in the implementation of the objectives set out in Chapter 13 of Agenda 21 (Managing fragile ecosystems: sustainable mountain development), taking into account the decisions taken by the CSD on this subject at its Third Session in 1995. The report was prepared by FAO as task manager for chapter 13 of Agenda 21, in accordance with arrangements agreed to by the Inter-Agency Committee on Sustainable Development (IACSD). It is the result of consultation and information exchange between United Nations.

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