

# Mountain development research listing of projects and project areas

Thomas Dax

Bundesanstalt für Bergbauernfragen, Austria

2002

thomas.dax@babf.bmlfuw.gv.at

Keywords: mountains, mountain ecosystems, mountain development, research, policies, sustainable development, Austria.

## INTRODUCTION

Mountain ecosystems are, however, rapidly changing. The rapid pace of globalisation, urbanisation and mass tourism are threatening mountain communities and the resources they depend on. World-wide, mountain areas face increasing marginalisation, economic decline and environmental degradation. On the human side, there is widespread poverty among mountain inhabitants and loss of indigenous knowledge. As a result, most global mountain areas are experiencing environmental degradation. Hence, the proper management of mountain resources and socio-economic development of the people deserves immediate action (United Nations, 1992, Agenda 21, Chapter 13: "Managing Fragile Ecosystems - Sustainable Mountain Development").

Mountain regions are of great importance within the European Union (about 20 % of the utilised agricultural area is defined as mountain area and 27 % of all farms are situated in the mountain areas). In five member countries - Greece, Austria, Italy, Spain and Portugal - mountain areas comprise even more than 50 % of the territory.

Cultural landscapes in mountain regions develop and change over time as a result of the interplay of socio-economic, cultural and natural factors and can thus only be understood as a process. Since changes are often irreversible, any change and interference demands careful consideration. Many parts of mountain regions have long been more than just an agricultural area. Rather they constitute a fully integrated living and working space, whose geographical characteristics do not lead to separation in a structural economic sense. They express themselves much more in the limited space available for settlement and industry, the handicaps on agriculture and forestry, in an expensive infrastructure and a particularly sensitive landscape. However, the various component areas display great differences in structure and development. Policies to safeguard environmental and cultural achievements, as well as sustainable rural development, can thus only be effective in the long term by the embedding of spatially oriented sector policies in integrated regional

development strategies (sustainable development is defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs).

Agriculture and forestry are still pillars of mountain communities and mountain development. The importance of mountain agriculture and forestry lies increasingly in the fulfillment of multifunctional tasks. Mountain agriculture provides employment, essential goods and services for the quality of life in Europe, through the production of high quality goods, maintenance of the cultural heritage, preservation of habitats and landscapes with high ecological and amenity values. Many of the services to society are not remunerated directly or through income from production.

The unfavourable natural situation of mountain farming is expressed primarily in the steep gradients of the farmed areas, the shorter growing season, the extreme weather conditions and an absence of alternative production possibilities. The often poor transport conditions and an inadequate and expensive infrastructure may also be added to this.

## **1. RAISING INTERNATIONAL AWARENESS FOR THE IMPORTANCE OF MOUNTAIN ECOSYSTEMS**

The United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992 started the long-term process of raising public awareness and ensuring adequate political, institutional and financial commitment for concrete action towards implementing sustainable mountain development (see Agenda 21, Chapter 13: "Managing Fragile Ecosystems - Sustainable Mountain Development"). The inclusion of this chapter meant that, for the first time, mountain regions were accorded equal priority in the global environment-development agenda with other global change topics such as climate change, desertification, or deforestation. In the years following Rio, a number of dynamic processes and activities related to mountain issues have been initiated.

In 1998 the General Assembly of the United Nations proclaimed the year 2002 as the International Year of Mountains (IYM) and the Food and Agriculture Organisation of the United Nations (FAO) was invited to act as the lead agency for the IYM. The IYM concept paper states that "sustainable mountain development includes a wide range of topics, calling for interdisciplinary, integrated approaches." IYM represents an important step in the long-term process initiated by the 1992 Earth Summit in Rio de Janeiro and provides a platform to reinforce these activities. Rather than a period of isolated events, it should serve as a springboard and catalyst for long-term, sustained and concrete action that will extend far beyond 2002. A wide range of information can be found at: [www.mountains2002.org](http://www.mountains2002.org)

The year 2002 has also been declared the International Year of Ecotourism. Since in some mountain areas, like in Austria, Switzerland or France, large portions of tourist activity occur in mountain areas this coincidence provides an important opportunity to benefit from synergies in the observance of both events. For information see: <http://www.ecotourism-mountains.at>.

The World Summit on Sustainable Development in Johannesburg, South Africa 2002 (also known as Rio + 10) in September 2002 will be a key event during IYM (a thematic report on sustainable mountain development was prepared for the first meeting of the Johannesburg 2002 Preparatory Committee and is available in French, English and Spanish on the Johannesburg 2002 web site <http://www.johannesburgsummit.org/>).

## **2. NETWORKS FOR MOUNTAIN COMMUNITIES, ENVIRONMENTS, AND SUSTAINABLE DEVELOPMENT**

Networking on mountains has advanced significantly since the 1992 Rio Earth Summit. A number of respective activities underline the rising concern for the issue and reflect that such international coordination is the base to enhanced research activities.

### *Mountain Forum:*

The global Mountain Forum was founded in 1995 as a decentralised network of networks to provide mutual support, information-sharing and advocacy for mountain peoples, environments and sustainable development. Membership is voluntary, and the basic premise is that members benefit from each other through mutual support, exchange of information and advocacy. This network is composed of thousands of people, professionals and organisations from over 100 countries. To provide a basic level of communications services, a few organisations serve as nodes, or coordination centers, for each region. The Mountain Forum's electronic information services include global, regional and thematic e-mail discussion lists, focused electronic conferencing, a calendar of events, and a rapidly growing on-line library of mountain resources. It is divided into five regional networks. The coordination for Europe is in Switzerland. See the websites [www.mtnforum.org](http://www.mtnforum.org) and [www.mtnforum.org/europe](http://www.mtnforum.org/europe).

### *Euromontana:*

Euromontana is a European association for cooperation between mountain regions, which has been established following an FAO workshop on mountain farming in 1953, and acted for decades as working group of the European Confederation of Agriculture (CEA). Since 1996 it has a legal identity in order to facilitate the efficient continuation of its action (14 European countries are founder members: Albania, Bulgaria, Scotland, the Spanish Basque country, France, Greece, Italy, Macedonia, Poland, Romania, Slovakia, Slovenia,

Switzerland, and the Czech Republic). It brings together regional and national organisations of mountain people: social-professional organisations, in particular agriculture, rural development centres, associations, territorial authorities, research institutes, etc. It includes organisations from Western Europe as well as from Central and Eastern European Countries in an effort to develop international cooperation in anticipation of the enlargement of the European Union. Recent initiatives include a series of thematic seminars on the issue of quality and rural development in mountain regions and the 3rd European Mountain Convention in May 2002 as main event of the organisation in IYM 2002 (Inverness, Scotland), [www.euromontana.org](http://www.euromontana.org).

#### *Alpine Convention (Convention on the Protection of the Alps):*

The Alpine Convention was signed in Salzburg in 1991. The signatories are Germany, France, Italy, Liechtenstein, Monaco, Austria, Slovenia, Switzerland and the European Union. The Convention serves as a platform for a transnational policy covering joint ecological and economic problems. The goal of the Convention is a comprehensive policy on the protection and sustainable development of the Alps. The Alpine Convention has been supplemented by several implementation protocols: on land use planning, mountain forests, the protection of nature and landscape, tourism and leisure activities, soil protection, energy, and transport. Further information on the Convention as such (including the text) can be found on the homepage of the "System for the Observation of and Information on the Alps (SOIA)", [www.abis.int](http://www.abis.int), established by the signatories and on the relevant pages of the International Commission for the Protection of the Alps (CIPRA). At the biennial session at Bolzano, Italy in November 2002 the selection for the placement of the permanent secretariat of the Alpine Convention will be taken. [www.cipra.org](http://www.cipra.org).

#### *Alpine Forum:*

Every two years (since 1994) there is a scientific congress in connection with the Alpine Convention. The last Alpine Forum (2000) took place in Bergamo, Italy. At the Forum it was also clearly stated that scientific research in European mountain regions is not only useful but essential to guaranteeing a successful outcome of the celebration of the International Year of Mountains 2002. Opening up this type of conference for the first time to representatives of other important regional mountain organisations around the world via the special symposium "Moving toward worldwide cooperation in mountain research" has also been judged a productive and important innovation. See: [www.montagna.org](http://www.montagna.org).

#### *Charter for the protection of the Pyrenees*

The Conseil International Associatif pour la Protection des Pyrénées (CIAPP) has elaborated in 1995 a charter for the Pyrenees.

(See [www.mtnform.org/resources/library/ciapp95.htm](http://www.mtnform.org/resources/library/ciapp95.htm)). Meanwhile a number of regional institutions have taken part, in cooperation with the CIAPP, in the European intergovernmental process on sustainable mountain development.

#### *Carpathian Ecoregion Initiative:*

The Carpathian Ecoregion Initiative is bringing together people to secure conservation and sustainable development in the Carpathians. Through this initiative, conservation of one of the most important natural areas of Europe is being combined with actions to support the local economy and culture. Launched by the Danube Carpathian Programme of World Wide Fund for Nature (WWF), the Carpathian Ecoregion Initiative is a partnership of key-decision-makers and organisations from within the region, working alongside international experts. [www.carpathians.org](http://www.carpathians.org).

### **3. MOUNTAIN POLICY FRAMEWORK IN EUROPE**

In many European countries mountain policies have been developed, starting already with some activities of forest policy in mountain areas of France in the 19th century (Barruet 1995, p. 231). In particular, over the last three decades respective mountain policies have been established and extended all over Europe and have become an important measure of European Community policy. The LFA scheme (c.f. Dax and Hellegers 1999) developed since 1975 thus represents the core of mountain policy measures in agriculture aiming at compensating less-favoured production conditions (and living situations) in mountain areas and at safeguarding the development of cultural landscapes, and rural amenity in general, which are particularly valued in mountain regions.

However, the recent policy trends have shown the need for a more integrative approach which tries to apply a stronger territorial viewpoint towards mountain policies. These (new) policies have largely been inspired and enhanced by "bottom-up" activities and regional policies at a small geographical level in several European countries, like Central Europe (e.g. Austria, Bundeskanzleramt 1980, Switzerland) since the end of the 1970s. Such pilot schemes have also been developed by "alternative" groups in remote mountain areas of France (c.f. magazine *alternative paysannes*) and Spain. The ensuing discussion of those first initiatives laid the basis to the respective policy reform and changes in attitude towards mountain policy (and also rural development) approach at the European level.

Since the reform of the Structural Funds in 1988 and the EU-document the "Future of Rural Society" (CEC 1988) mountain policy is generally understood to comprise both agricultural and also all other territorial specific policies aiming at mountain development. Also at that time the widely discussed report on mountain policy was published (Amato 1988). The thrust of recent discussion of

mountain policy is taking the need for such an integrated approach as granted (Dax et al. 1999) and evaluation of mountain policies reflects this concern (c.f. evaluation of French mountain policy, Commissariat Général du Plan 1999; Austrian mountain policy, OECD 1998 and Hovorka 1998 and Swiss regional policy, CH-Regio Plus).

As referred to in the introduction of this paper the notion of sustainability gained worldwide increasing importance since the UN Conference in Rio in 1992 and mountain policies acquired momentum in many parts of the world. The discussion on chapter 13 (sustainable development for mountain areas) and also on other chapters (like chapter 10 "Integrated Planning and Management of Land Resources" and chapter 14 "Sustainable Agriculture and Rural Development"), all having been taken account in the Agenda 21 process, have been carried out on many levels and reached particular attention at the European level (Backmeroff et al. 1997). Also the discussion of diverse resolutions and charters in favour of mountain area support, launched by the Council of Europe and the Committee of Regions (1997) of the European Union has reflected the rising commitment for the issue. With the wave of mountain memoranda by national governments (Italy, Austria, France and Portugal) in 1996/1997 priority for mountain policy measures was aimed at the then starting discussions for CAP and Structural Funds reform, as well as 5th Framework Programme for RTD (1999-2002). In many respects this discourse was not just about the question of appropriate support schemes but also the necessity for providing adequate institutions at an intermediate level to facilitate mountain development.

In many countries Structural Funds programmes and Community Initiatives, like particularly LEADER and INTERREG are most relevant in mountain areas (e.g. Dax 1997, overlap of Mountain Policy and LEADER in Italy, Mantino and Zumpano 2001, and also in other countries). Some of the recent discourse is focusing on the requirement to improve the process of regional development programmes and, in particular, concentrate on issues like monitoring and new kinds and experiences of evaluation (techniques and models). Evaluation has not just got a meaning of formal assessment of achieving the programmes goals (and indicators) but also a means to actively provide an input to the process of programme implementation and, more generally speaking, of mountain development in it. It therefore can become a kind of dialogue tool and learning mechanism (Ray 1999) supporting innovative activities at the local level and the regions.

This last point addresses the questions of the appropriate levels and interrelation of measures and programmes, and the issue of governance for rural, mountain areas. Due to the varying topographical situation in mountain areas in many respects a rather small-scaled territorial analysis is required. Resulting from the phenomenon isolation and remoteness may occur locally and have to be assessed by appropriate policy design.

Finally, it is also important to note that environmental performance and environmental effects of economic activities and policies are of increasing importance for this topic (Dax and Wiesinger 1998, EUROMONTANA 1998). The attention attached to mountain issues in this respect is specifically related to the high ecological sensibility of mountain areas and its impact on global change (Price 1999).

The following survey on relevant projects and project areas intends to capture, in particular, some significant examples on the recent increase of mountain development research in Europe. The list is far from being complete as information from respective research data sources is rather scattered and not yet available at a cross-national comparative level. Moreover institutional development in this field has been particularly expressed over recent years and the continuity of its research impact and international role might only be assessed after a longer period.

#### **4. MOUNTAIN DEVELOPMENT RESEARCH IN EUROPE**

It is the intention of this paper to prepare a list of relevant projects and project areas of mountain development research in Europe. The increase of activities and the political discussion of the mountain regions as a priority focus of a number of European countries have led to the inclusion of mountains in the programme designation within the 5th Framework Programme of the EU. The key action "Sustainable agriculture, fisheries and forestry, and integrated development of rural areas, including mountain areas" within the Quality of Life Programme reflects this concern best. However, the sole nomination in the title of the key action did hardly result in an increase of relevant projects. Nevertheless, a significant growth of the number of projects relating to rural development measures could be assessed over the recent past (Bryden 2001). Many of those are of direct impact to mountain areas. The following analyses was based on a search of research data bases, information on national programmes and information from partners and colleagues on various aspects of mountain projects.

The search of the CORDIS - RTD- projects data base on the term "mountain" was successful for 182 projects. Many of those projects have already been carried out in the 1980s and a great number can be attributed to natural sciences or implementation projects for specific technical applications within mountain regions. To provide more in-depth information a smaller number of projects has been selected out of that result and is presented in annex 1 in a list of 42 projects. This list gives a survey on the different programme areas where mountain projects have been realised, and addresses the most relevant mountain development projects. One can see that all over the programme areas mountain projects have been carried out, but only few have a socio-economic dimension. The list is also incomplete as accompanying measures and demonstration projects, and studies directly commissioned by other

Commission directorates than Directorate Research are not included in the data base. The additional information by partners on relevant projects has been therefore required to add important projects and project themes not covered by CORDIS. A second list of additional projects (annex 2) will include information on projects carried out at the national (or regional) level of different European countries or commissioned by other international organisations. In order to get a flavor of that kind of international discussion some recent major events and a selection of projects is addressed in the following.

In recent years some important international conferences regarding mountain regions have been organised in Europe. Some important comparative research projects in social science have also been supported by the EU Commission. Mountain development recently also seems to have become an important issue for the European Parliament and the Committee of the Regions.

#### **CONFERENCES ON MOUNTAIN ISSUES IN EUROPE:**

- European Inter-governmental Consultation 1996 on Sustainable Mountain Development "Towards sustainable mountain development in Europe" in Trento, October 1996 (consultation on follow-up to UNCED Agenda 21, Chapter 12 on mountain areas).
- European Conference on Environmental and Societal Change in Mountain Regions, December 1997 in Oxford
- World Mountain Forum and International Mountain Research Workshop "Mountain regions - a research subject?" in June 2000 in Paris, Chambéry and Grenoble.
- Mountains of the World: Community Development between Subsidy, Subsidiarity and Sustainability. International Symposium in Preparation for the IYM 2002 in October 2001, organised by the Swiss Agency for Development and Cooperation (SDC) and the Centre for Development and Environment (CED) in Interlaken
- 3rd European Mountain Convention: Our mountains - A Future Strength of European Rural Development, organised as one of the conferences in the International Year of Mountains 2002, Inverness, Scotland, 16-18 May 2002
- International Conference on Sustainable Agriculture and Rural Development in Mountain Regions (SARD-Mountains 2002), a contribution to the International Year of the Mountains 2002 and in preparation for the World Summit for Sustainable Development in Johannesburg (WSSD), 16 - 20 June 2002, Adelboden, Switzerland ([www.sard-m2002.ch](http://www.sard-m2002.ch))
- In particular during the International Year of the Mountains 2002 a number of high-ranking and focused international events and additionally a series of national events will take place and address aspects of sustainable mountain development. To address just a few one should mention the conferences in Inverness and Adelboden (see above),



the Bishkek World Conference in October, and world-wide conferences and events at the high summit during the action week in May 2002 etc.

Examples of influential research activities either commissioned by the European Commission or by other international organisations include:

- Sustainable Agricultural Land Use in Alpine Mountain Regions (SAGRI-ALP). The overriding aim was to develop guidelines for proper land use in agriculture along the lines of sustainability. Five Alpine countries were involved in this project: Austria, France, Germany, Italy and Switzerland.
- A comparative analysis of the European Union's and Switzerland's instruments in terms of their influence on a sustainable agriculture in the Alpine arc (SUSTALP). The objectives of the project were to evaluate the effects of the EU Agricultural Policy, taking into consideration its directives and regulations, and to elaborate proposals for the future application of these instruments. Five European institutes were involved in this project.
- Integration of Environmental Concerns into Mountain Agriculture. The aim of the study was to identify the positive and negative environmental impact of Community policy instruments and present possible options. The study was coordinated by Euromontana. It involved participants from 25 study areas throughout the European Union. Six regional groups were established within this research network. The Bundesanstalt für Bergbauernfragen was responsible for the coordination of the "Central and Eastern Alps" group comprising five different study areas in Austria, Germany, Italy, Slovenia and Switzerland.
- Regional development and cultural landscape change: the example of the Alps. Evaluating and adjusting EU and national policies to manage a balanced change (REGALP, 2001-2004). This project focuses on landscape change of the Alps and adopts a future oriented approach.
- Tools for evaluating investment in Mediterranean mountain areas - an integrated framework for sustainable development (MEDMONT). The project will run from 2001 to 2004 and will produce a methodological framework to support ex ante and ex post investment evaluation and monitoring decisions in the Mediterranean context. The MEDEF network has already worked on mountain areas in the Mediterranean in the first half of the 1990s and investigated initiatives against marginalisation of farmers.
- Diversification and reorganization of husbandry activities in less-favoured areas (DIVOR-DEF, original title in French, 1997-2000). The project addresses issues of diversification of activities and accelerating restructuring of rural societies, in particular it stresses the role of an intermediate body concerned with management of space and breeding practices. The coordinator of the project has been the Agricultural University of Athens.

- Research projects in Portuguese mountain areas addressed the issues of diversification of farms and socio-economic development of regions in a comprehensive methodological approach. One project focused on the "valorization of goat production in the Caldeirão Mountain" (PECTA), and other followed a participatory action research approach ("Sustainable agriculture development - methodologies and definition of intervention criteria for mountain zones - PENEDA).
- The EU project "Entrepreneurship in Mountain Areas of Southern Europe" (EMASE, 1999-2001) aimed at providing policy guidelines for the advancement of entrepreneurship in mountain areas. It is one of the examples focusing on the analysis of individual and community entrepreneurship in the secondary and tertiary sectors, and stressing the role of human capital and local leadership for mountain development.
- The Cultural Landscape in the Mountain Area of Austria - Policies for the Environment and Rural Development. A national report for the OECD - Group of the Council on Rural Development for the document: Rural Amenity in Austria - A Case- Study of Cultural Landscape (1998).
- The OECD Group of the Council on Rural Development also launched a case study on the Greek mountain area of Tzoumerka (2000). It is shown that territorial assets can provide foundation for economic regeneration also in a mountain area context. To be effective, a local development agency will have to secure the benefits of partnership, oblige higher levels of government to assist and address the experience of regional actors with regard to the past and their vision for future development.
- PANOS Institute Oral Testimony Programme: some 250 interviews conducted by local people in local languages, recorded, transcribed, translated and summarised. Collections have been gathered from communities in the Himalaya (India and Nepal), the Andes (Peru), the Sierra Norte (Mexico), Mount Elgon (Kenya), the highlands of Ethiopia and Lesotho, China, the Sudety mountains (Poland), and the Karakoram mountains of Pakistan. [www.mountainvoices.org](http://www.mountainvoices.org).
- Biodiversity, Landscapes and Ecosystem Services of Agriculture and Forestry in the Austrian Alpine Region - An Approach to Economic (E)Valuation, national report for the OECD - Working Party on Economic and Environmental Policy Integration / Working Group on Economic Aspects of Biodiversity 2001.
- A comprehensive evaluation study on the mountain policies executed over the last three decades in France which involved all the sectors and institutions affected by mountain policies. This is an example of thorough assessment of the impact of mountain policies and the need for intersectoral approaches.

## MOUNTAIN RESEARCH INSTITUTIONS IN EUROPE

With the rise of mountain development issues on the political agenda the need for adequate institutional support and research infrastructures became

obvious. Mountain initiatives and programmes spread all over the mountain ranges of the world and have been particularly fostered by the establishment of the Mountain Forum, acting as a worldwide network of researchers and institutes on mountain issues. In many regions the lack of a sound research basis and institutes was experienced as detrimental to mountain development. Impacts from ongoing and potentially accelerating climate change and changes in mountain ecological and societal systems have been revealed by different research disciplines. The great variety of different aspects and dimensions involved called for a more integrated and focused research approach. Only a few countries or regions had developed major research activities explicitly addressing mountain development. However, in recent years the vivid international debate and the close relation to regional development activities led to the foundation of research centres in several countries, mainly with an integrated research concept. A survey on relevant mountain initiatives and research centres is provided in annex 3. The exploration of the state-of-the-art in research on the sustainable use and management of mountain areas, summarized in The Abisko Agenda (The Royal Swedish Academy of Sciences 2002) provides a common understanding of major research priorities, approaches and needs in mountain development. It reveals also the requirement of inter- and trans-disciplinary work programmes and a continuity of research commitment which is maintained well beyond programmes' stereotypic 3-5 year life cycles. Closer cooperation and international collaboration will be required to cope with the increasing environmental, economic and societal problems of mountain areas which affect both mountain regions and lowlands.

## **MOUNTAIN DEVELOPMENT RESEARCH IN THE EUROPEAN RESEARCH AREA**

The European Conference on Environmental and Societal Change in Mountain Regions, in Oxford in 1997, stressed needs and opportunities for integrated interdisciplinary research and identified four sets of key issues for global change research in mountain regions:

- Inventory and collection of baseline data on global change
- Research on processes of change in interacting environmental and societal systems
- Research on global change and mountain communities
- Implementation of interdisciplinary research

In the past, research for rural areas has been dominated by agricultural research and less attention has been paid to the other economic and social dimensions of rural change and development, particularly in the mountain regions. However, with the shift of the regional development paradigm towards bottom-up approaches and greater local participation and the rising awareness of the multiple tasks of particularly mountain farming some countries engaged in integrated research concepts on mountain development very early.

Switzerland, Austria and partly France are examples for this development. In Austria, a federal research institute has been established in 1979 to focus on research issues of mountain and less-favoured areas, committed to an integrated research programme for all parts of population of these areas. The Bundesanstalt für Bergbauernfragen thus worked on a wide scope of research issues with an impact on mountain development. In recent years the integrated approach and territorial assessment of mountain policies led to a significant institutional development. In some countries new research organisations have been built which are characterised by an integration economic, agricultural, forestry and environmental development issues. The most renowned of these are the Centro di Ecologia Alpina in Trento (Italy), the Centre for Mountain Studies at Perth College in Scotland, Istituto Nazionale per la Ricerca Scientifica e Tecnologica sulla Montagna (INRM) in Italy, l'Institut de la Montagne in Chambéry, France and the Strategic Planning Center in the Pindos Mountains in Greece.

In the future it will be important to relate international mountain research to the concept of the European Research Area and its new kind of research instruments necessitating an increased effort to achieve greater and more comprehensive cooperation among researchers. Such new approaches will have to take into account the following important conclusions from analysis of the previous research priorities:

- to achieve a balance between natural sciences and socio-economic research tasks
- to combine scattered research initiatives, and focus more specifically on mountains and the territorial impacts
- to engage in comparable studies, raising in-depth analysis of policy impacts and development issues
- to address the main issues, like diversification, landscape development, environmental integration, inter-relation of different levels (in particular local and regional development), and policy assessment and strategies, with inter- and trans-disciplinary research methods
- to improve dissemination of research, particularly through the integration of local actors and the inclusion of an action-research strategy

With regard to the development of the European Research Area an expression of interest under the project title "strategies for sustainable land management in mountain areas" has been proposed aiming at increased cooperation of European mountain research centres (Bundesanstalt für Bergbauernfragen 2002).

If the policy concern for mountain development issues can be communicated the new European research commitment might provide a chance for a greater support for integrated inter-disciplinary research regarding mountain

development and also for better consideration of the multifunctionality of mountain farming in research projects and in policies for a sustainable mountain-area development.

## REFERENCES

Amato, A. (1988), Eine Politik für das Bergland, Europäische Gemeinschaften, Wirtschafts- und Sozialausschuss, Brüssel, 144pp.

Backmeroff, C., Chemini, C. and La Spada, P. (eds.) (1997), Proceedings of the final Trento session of the European Intergovernmental Consultation on Sustainable Mountain Development. Trento, 7-11 October 1996. Provincia Autonoma di Trento e Centro di Ecologia Alpina, 256 pp. (Italian/English/French/German).

Barruet, J. (1995), Politiques de la Montagne, L'enjeu européen et transfrontalier, in: Barruet, J. (ed.), Montagne, Laboratoire de la diversité, Cemagref, Grenoble, pp. 227-238.

Bryden, J. (2001), Prospects for Research and Development, paper to the workshop on "European Rural Development, Problems, Chances, research Needs", jointly organised by the International Institute for Applied Systems Analysis, Laxenburg Austria and the Polish Academy of Sciences in association with the Polish Institute of Agricultural and Food Economics, Warsaw, 7-9 May.

Bundesanstalt für Bergbauernfragen (2002), Strategies for sustainable land management in mountain areas, expression of interest within the call for preparation to FP6, Vienna.

Bundeskanzleramt. Entwicklungsschwache ländliche Räume in Berggebieten; Series of the Federal Chancellery (Sektion IV/Dept. 6) No. 1/80: Wien, 1980.

Commission of European Communities (CEC), (1988), The Future of Rural Society, COM(88)601 final/2, Brussels.

Dax, T. (1997a), Mountain Policies in Austria - experiences and outlook on an integrated policy approach, intervento al seminario internazionale "Quale futuro per l'agricoltura montana in Europa: politiche di sviluppo, di sostegno o di tutela", 7 ottobre, Milano.

Dax, T. and Hellegers, P. (2000), Policies for Less-Favoured Areas, in: Brouwer, F. and Lowe, P. (eds.), CAP Regimes and the European Countryside, Prospects for Integration between Agricultural, Regional and Environmental Policies, CAB International: Wallingford, pp. 179-197.

Dax, T., Hovorka, G. and Loibl, E. (1999), Regional dynamics in mountain areas and the need for integrated policies, paper presented at the 39th ERSa Conference, 23-27 August, Dublin.

Dax, T. and Wiesinger, G. (eds). (1998), Mountain Farming and the Environment: Towards Integration, research report no. 44, Bundesanstalt für Bergbauernfragen: Wien.

EUROMONTANA (1998), L'integration des préoccupations environnementales dans l'agriculture de montagne, Etude réalisée pour la Commission Européenne DG XI, Paris/Bruxelles, 105pp.

Hovorka, G. (1998), Die Kulturlandschaft im Berggebiet in Österreich, OECD-Fallstudie, Forschungsbericht Nr. 43, Bundesanstalt für Bergbauernfragen, Wien, 189 pp.

Mantino, F. and Zumpano, C.(2001), La riforma dei Fondi Strutturali a favore dell'agricoltura di montagna in Italia: problemi e prospettive, in: Euromontana (ed.), Mountain Agriculture towards Sustainable Development, seminar final report, Capracotta, Italy, 21-24 Giugno, pp.71-89.

Mountain Agenda (1997): Mountains of the World. Challenges for the 21st Century. A contribution to Chapter 13, Agenda 21, Bern.

OECD (1998), Rural Amenity in Austria, A Case Study of Cultural Landscape, Paris, 115 pp.

Price, M. (1999), Global Change in the Mountains, The Parthenon Publishing Group: New York and London.

Ray, C. (1999), Reconsidering the evaluation of endogenous (rural) development - two qualitative approaches, paper to the EU COST A12 network on Rural Innovation, Newcastle upon Tyne.

The Royal Swedish Academy of Sciences (2002), The Abisko Agenda, Research for Mountain Area Development, a contribution to the United Nations Years of Mountains 2002, Ambio special report no. 11, 105pp.

## ANNEX 1

### List of EU projects on mountain issues (CORDIS-RTD-Projects)

1. The effects of extensification on the ecology, animal welfare and socio-economics of agricultural systems in hill and mountain regions (1993 - 1994)  
Programme Area: 3rd FWP, AIR (AIR10038)

Coordinated by: Scottish Agricultural College (SAC), United Kingdom  
(Waterhouse, A.)

2. Agri-environmental measures and water quality in mountain catchments  
(1995 - 1997) Programme Area: 3rd FWP, AIR (AIR32182),  
Coordinated by: International Centre for Alpine Environments, Le bourget-du-  
Lac, France, (Bourjot, L.)

3. European mountain lake ecosystems: regionalisation, diagnostics & socio-  
economic evaluation (2000 - 2003)  
Programme Area: 5th FWP, EESD (EVK1-1999-00032)  
Coordinated by: University College London, United Kingdom, (Vickers, Ilse)

4. Debrisfall assessment in mountain catchment for local end-users (DAMOCLES)  
(2000 - 2003)  
Programme Area: 5th FWP EESD (EVG1-1999-00007)  
Coordinated by: University of Newcastle upon Tyne, United Kingdom, (Tuck,  
Alan)

5. Landscape-use optimisation with regards of the groundwater resources  
protection in the mountain hardrock areas (LOWRGREP) (2000 - 2003)  
Programme Area: 5th FWP, EESD (EVK1-1999-00040)  
Project URL: <http://www.site-eerie.ema.fr/~lowrgrep/>  
Coordinated by: Association pour la recherche et le Développement des  
Méthodes et Processus Industriels - ARMINES, Ales, France, (Le Bozec, Philippe)

6. International Symposium on High Mountain Lakes and Streams; Indicators of  
a Changing World (2000 - 2000)  
Programme Area: 5th FWP, EESD (EVK1-2000-60011), Coordinated by: Leopold-  
Franzens-Universität Innsbruck, Innsbruck, Austria, (Psenner, Roland)

7. The European dimension of the global observation research initiative in  
alpine environments - a contribution to gtos (GLORIA-EUROPE) (2001 - 2003)  
Programme Area: 5th FWP, EESD (EVK2-2000-00056)  
Coordinated by: Universität Wien, Austria, (Grabherr, Georg)

8. Impact of Large Landslides in the Mountain Environment: Identification and  
Mitigation of Risk (IMIRILAND) (2001 - 2003)  
Programme Area: 5th FWP, EESD (EVG1-2000-00035)  
Coordinated by: Politecnico di Torino, Italy, (Zich, Rodolfo)

9. Effects of land-use changes on sources, sinks and fluxes of carbon in  
European mountain areas (2001 - 2004)  
Programme Area: 5th FWP, EESD (EVK2-2001-00125), Coordinated by: Leopold-  
Franzens-Universität Innsbruck, Austria, (Bortenschlager, Sigmar)

10. The incorporation of a micro-hydro electric power plant in an integrated energy system for a mountain farm (1986 - 1989)

Programme Area: ENG (Energy Programmes) ENALT 2C

Coordinated by: Università degli Studi di Milano, Italy, (Pellizzi, G.)

11. PV-Electrification in high mountain region (incl cycling museum) (1988 - 1990) Programme Area: ENG (Energy Programmes) ENDEMO C

Coordinated by: Parc National des Ecrins, GAP, France, (Burle, J.)

12. Programme for the development of medicinal plant dryers in medium high mountain regions (1986 - 1989)

Programme Area: ENG (Energy Programmes) ENDEMO C, Coordinated by: Architect. Microclimat energies douces (ARCHIMED), Ganges, France, (Jaure Salomon)

13. Demonstration of a wind farm operation on a complex and uneven terrain in mountain site (1989 - 1992)

Programme Area: ENG (Energy Programmes) ENDEMO C

Coordinated by: Alenia SpA, Roma, Italy, (Avolio Sesto)

14. Flooding risks in mountain areas (1994 - 1996)

Programme Area: 3rd FWP, ENV 1C (EV5V0462), Coordinated by: Stichting Waterloopkundig Laboratorium, Emmeloord, Netherlands, (Klaassen, Gerrit)

15. Slope instability; erosion and solid material transport in steep mountain Catchments: laboratory and field experimentations (EROSLOPE) (1992 - 1995)

Programme Area: 3rd FWP, ENV 1C (EV5V0179)

Coordinated by: Freie Universität Berlin, Germany, (Ergenzinger, Peter)

16. Acidification of mountain lakes: palaeolimnology and ecology, remote mountain lakes as indicators of air pollution and climate change (ALPE 2) (1993 - 1995)

Programme Area: 3rd FWP, ENV 1C (EV5V0205)

Coordinated by: University College London, United Kingdom, (Battarbee, Richard)

17. Measuring and modelling in the dynamic response of remote mountain lake ecosystems to environmental change. A programme of mountain lake research (MOLAR) (1996 - 1999)

Programme Area: 4th FWP, ENV 2C (ENV4950007)

Coordinated by: University College London, United Kingdom

18. Arctic and Alpine stream ecosystem research (AASER) (1996 - 1999)

Programme Area: 4th FWP, ENV 2C (ENV4950164)

Coordinated by: University of Oslo, Norway, (Brittain, John E.)



19. Ecological effects of land use changes on european terrestrial mountain ecosystems. Research on ecosystemic processes in the alpine area, the Spanish Pyrenees and the Scottish Highlands (ECO-MONT) (1996 - 1999)

Programme Area: 4th FWP, ENV 2C (ENV4950179)

Coordinated by: Leopold-Franzens-Universität Innsbruck, Austria, (Cernusca, Alexander)

20. Environmental and societal change in mountain regions (Mountain changes)

Programme Area: 4th FWP, ENV 2C (ENV4970430)

Coordinated by: University Oxford, United Kingdom, (Martin, Price)

21. Ricerca integrata sulla degradazione dei versanti in territori montani (1991 - 1993) Programme Area: 2nd FWP, EPOCH (EPOC0027),

Coordinated by: Ente Regionale di Sviluppo Agricolo della Lombardia, Milano, Italy, (Franco Previtali)

22. Sustainable agricultural land use in alpine mountain regions (SAGRI-ALP) (1998 - 2000)

Programme Area: 4th FWP, FAIR (FAIR973798)

Coordinated by: Service d'utilité agricole a compétences interdépartementales montagne alpes du nord (SUACI), Chambéry, France, (Fleury, Philippe)

23. Multifunctional forest management-evaluation of policy and silvicultural means for mountainous regions (MUFAMA) (1999 - 2001)

Programme Area: 4th FWP, FAIR (FAIR984276)

Coordinated by: University Munich, Freising, Germany, (Weber, Michael)

24. Mount Olympos: Myth, History and Poetry based on archaeological discoveries and the natural environment (OLYMPOS) (1993 - 1994)

Programme Area: IS, IMPACT 2 (2069IMP)

Coordinated by: Athens Technology Center SA, Greece, (Dessipris, Nikolaos)

25. Measuring and Modelling the Dynamic Response of Remote Mountain Lake Ecosystems to Environmental Change (MOLAR) (1996 - 1999)

Programme Area: 4th FWP, INCO (IC20960021)

Coordinated by: University College London, United Kingdom, (Patrick, Simon)

26. Policies for sustaining environments and livelihoods in mountain areas (1997 - 2000) Programme Area: 4th FWP, INCO (IC18970148)

Coordinated by: University of Leeds, United Kingdom, (Preston, David)

27. Sustainable economic utilisation of wild South American camelids: Strategies for improving rural productivity in pastoral communities in Latin America (MACS) (2001 - 2005)

Programme Area: 5th FWP, INCO 2 (ICA4-2001-10044), Coordinated by:

Macaulay Land Use Research Institute, Aberdeen, United Kingdom, (Gordon, Ian)

28. Alpine guide Italia-Deutschland-Austria (AIDA) (1997 - 1997)

Programme Area: IS (Information Society), INFO2000 (INFMM3009)

Coordinated by: Huber Kartographie, München, Germany, (Huber, Franz)

29. Development of mountain hazard mapping methodologies for the Andean environment using PC-based geoinformation systems (1991 - 1992)

Programme Area: IC (International Cooperation), ISC C (CI1\*900779),

Coordinated by: International Institute for Aerospace Survey and Earth Sciences, Enschede, Netherlands

30. Promotion of tourism activities with regard to nature conservation in the mountain area of Paiko (1994 - 1996)

Programme Area: ENV (Environment), LIFE 1 (94/GR/A152/GR/01396/KEN)

Coordinated by: Municipality of Giannitsa & Municipality of Goumenissa, Greece

31. Mountain forests: Techniques for long-term multi-functional management (1994 - 1997)

Programme Area: ENV (Environment), LIFE 1 (94/F/A151/EU/00713),

Coordinated by: Cemagref Section Forêt de montagne, St Martin d'Hères, France, (Chauvin Droz des Villars, Christophe)

32. Mountain gorge habitat of the Sirente-Velino Regional Park

Programme Area: ENV (Environment), LIFE 1 (94/IT/A222/IT/01140/ABR)

Coordinated by: Ente Parco Naturale Regionale, Sirente Velino, Italy

33. Protection and fruition of the sites of the Mont Avic Park included in the Nature 2000 Program (1997 - 2000)

Programme Area: ENV (Environment), LIFE 2 (LIFE96NAT/IT/003052),

Coordinated by: Ente Parco Naturale del Mont Avic, Champdepraz Aosta, Italy, (Bocca, Massimo)

34. Tools for evaluating investment in the Mediterranean mountain areas - An integrated framework for sustainable development (MEDMONT) (2001 - 2003)

Programme Area: 5th FWP, LIFE QUALITIY (QLK5-2000-01031), Coordinated by: Mediterranean Agronomic Institute of Chania, Greece, (Nikolaidis, Alkinoos)

35. Regional Development and Cultural Landscape Change: The Example of the Alps. Evaluating and Adjusting EU and National Policies to Manage a Balanced Change (REGALP)

Programme Area: 5th FWP, LIFE QUALITIY (QLK5-2001-02329), Coordinated by: Regional Consulting Ziviltechniker Gesellschaft GmbH, Wien, Austria, (Puchinger, Kurt)

36. A multinational, multidisciplinary research programme on the role and the place of the mountains in the desertification of the Mediterranean mountain regions (MEDIMONT) (1994 - 1996)

Programme Area: IC (International Cooperation), PECO/COPERNICUS (CIPD930057)

Coordinated by: International Centre for Alpine Environments, Corte, France, (Dubost, Michel)

37. Slope instability, erosion and solid material transport in steep mountain catchments: laboratory and field experimentations (1994 - 1995)

Programme Area: IC (International Cooperation), PECO/COPERNICUS (CIPD930031)

Coordinated by: Freie Universität Berlin, Germany, (Ergenzinger, Peter)

38. Acidification of mountain lakes: paleolimnology and ecology, remote mountain lakes as indicators of air pollution and climate change (ALPE 2)

Programme Area: IC (International Cooperation), PECO/COPERNICUS (CIPD930021)

Coordinated by: University College London, United Kingdom, (Battarbee, R.W.)

39. Action on Mountain Resorts (1995 - 1997)

Programme Area: ENG (Energy Programmes), SAVE 1 (XVII/4.1031/95-074)

Coordinated by: Rhônealpiénergie-Environnement, Lyon, France, (Echevin, Martine)

40. Solar Energy for mountain farming in Rhone-Alpes

Programme Area: ENG (Energy Programmes), THERMIE 1 (SE./00124/91)

Coordinated by: Rhônealpiénergie, Lyon, France, (Lefebvre, I.)

41. PV Electrification for Economic Development and Tourism in a rural area (1991 - 1995)

Programme Area: ENG (Energy Programmes), THERMIE 1 (SE./00242/91)

Coordinated by: Federation Department Collectiv. Electrifi., Digne, France, (Tardy, M.)

42. Energy Assets in an under-developed mountain region (1990 - 1990)

Programme Area: ENG (Energy Programmes), THERMIE 1 (TEN/00022/94)

Coordinated by: LDK Consultants SA, Athens, Greece

## **ANNEX 2**

### **Additional research projects**

1. Determination of support mechanisms and structures towards sustainable development: The case of regions with administrative gaps and

- discontinuities (DG XII no. SOE1-CT98-1124), coordinated by University of Athens
2. The Integration of environmental concerns into mountain agriculture (DG XI, no. B4-3040/96/000264/MAR/D1), coordinated by Euromontana
  3. Analysis of mountain areas in the European Union and in the applicant countries (restricted tender by DG Regio, April 2002)
  4. Entrepreneurship in the mountainous areas of Southern Europe (EMASE) (FAIR6 CT98-4169), coordinated by University of Patras
  5. Rural amenity in Austria, The cultural landscape in the mountain area of Austria, OECD case study, Group of the Council on Rural Development, prepared by Bundesanstalt für Bergbauernfragen (1998)
  6. Diversifying the regional economy by linking rural amenities: The Napfbergland border trail, Switzerland, OECD case study, Group of the Council on Rural Development, prepared by B.S.S. Economic Consultants (1998)
  7. Tzoumerka, Greece, OECD Territorial Reviews, OECD Territorial Development Service (2002)
  8. Non-market Benefits Associated with Mountain Regions. Report for Highlands and Islands Enterprise and Scottish Natural Heritage, prepared by CJC Consulting and University of Glasgow (2002)
  9. Valorization of goat production in the Caldeirão mountain" (PECTA),
  10. Sustainable agriculture development - methodologies and definition of intervention criteria for mountain zones (PENEDA),
  11. Sustainable landscape production systems, a demand oriented agricultural approach (SU-LAPS)", within Swiss national Research programme "Landscapes and Habitats of the Alps" (NRP 48), Swiss Federal Research Station for Agricultural Economics and Engineering (FAT)
  12. Biodiversity development in mountain areas, OECD case study, Bundesanstalt für Bergbauern-fragen
  13. Mountain research in Europe: An overview of MAB research from the Pyrenees to Siberia". Man and the Biosphere Series No. 14, UNESCO/Parthenon, Paris/Carnforth. By Martin Price (1995).
  14. Review of the implementation of chapter 13 of Agenda 21 for the Food and Agriculture Organization of the United Nations, the Task Manager for Chapter 13, the centre for mountain studies at Perth College, Scotland.
  15. The status of the Carpathians, carried out by WWF International Danube Carpathian Programme, 2002 ([www.carpathians.org/launch](http://www.carpathians.org/launch))
  16. A multi-national multidisciplinary cooperative project on alpine forest and mixed grasslands/woodlands ecosystems, European program DG XII Step-Integralp (1991-1992)
  17. FAO sub-network on mountain pastures and grassland (permanent network for more than 20 years)
  18. Land use and population changes in Eastern Balkan mountain and Caucasus during the period of transition, joint research project with the Institute of Geography, Bulgaria, and Russian Academy of Sciences.

19. Recreational potential of the Western Balkan mountain, joint research project with the Institute of Geography, Bulgaria, and Serbian Academy of Sciences.
20. Conto economica della montagna, Università degli Studi di Torino, Istituto Nazionale per la Ricerca Scientifica e Tecnologica sulla Montagna (INRM) e UNCEM

## ANNEX 3

### Mountain research initiatives and institutes

1. The Abisko Agenda, Research for Mountain Area Development, Rethinking Agenda 21, Chapter 13: Managing Fragile Ecosystems; Sustainable Mountain Development, The Royal Swedish Academy of Sciences, February 2002.
2. International Geosphere-Biosphere Programme IGBP/IHDP/GTOS Mountain Research Initiative (2001).
3. UNESCO, Man and the Biosphere Programme: Man's Impact on Mountain Ecosystem. United Nations University (UNU) Environment and Sustainable Development Programme ([www.unu.edu/env/resource/resource.html](http://www.unu.edu/env/resource/resource.html))
4. Global Mountain Biodiversity Assessment ([www.unibas.ch/gmba](http://www.unibas.ch/gmba))
5. Consultative Group on International Agricultural Research (CGIAR), Global Mountain Initiative ([www.cipotato.org/market/brochure99/world.htm](http://www.cipotato.org/market/brochure99/world.htm))
6. International Centre for Integrated Mountain Development, ICIMOD ([www.icimod.org.sg/](http://www.icimod.org.sg/))
7. Mountain Forum ([www.mtnforum.org](http://www.mtnforum.org))
8. Forum Européen de la Montagne, established 1996, ([www.mtnforum.org/europe](http://www.mtnforum.org/europe)),
9. The Mountain Institute ([www.mountain.org](http://www.mountain.org))
10. Global Observation Research Initiative in Alpine Environments, GLORIA ([www.gloria.ac.at](http://www.gloria.ac.at))
11. The International Mountain Society, Bern, Switzerland (institutional members include Swiss Agency for Development and Cooperation, SDC, United Nations University, UNU, ICIMOD, FAO, Consortium for the Sustainable Development of the Andean Ecoregion, CONDEAN, Centre for Development and Environment, CDE), publisher of the journal Mountain Research and Development, MRD ([www.mrd-journal.org](http://www.mrd-journal.org))
12. Cultural Landscape Research, Austrian research initiative since 1995 ([www.klf.at](http://www.klf.at))
13. Landscape and Habitats of the Alps, National Research Programme, Swiss National Science Foundation, implementation plan 2001 ([www.snf.ch](http://www.snf.ch))
14. European mountain specific institutes
15. Bundesanstalt für Bergbauernfragen (BABF), Federal institute for mountainous and less-favoured areas, founded 1979, Vienna, Austria ([www.babf.bmlf.gv.at](http://www.babf.bmlf.gv.at))

16. Schweizerische Arbeitsgemeinschaft für die Berggebiete (SAB), Swiss Centre for Mountain Regions, founded 1943 ([www.sab.ch](http://www.sab.ch))
17. Centro di Ecologia Alpina ([www.cealp.it](http://www.cealp.it)), established in 1993, Trento, Italy
18. The Centre for Mountain Studies (CMS), founded 2000, at Perth College, University of the Highlands and Islands (UHI) Millenium Institute, UK ([www.cms.uhi.ac.uk](http://www.cms.uhi.ac.uk)).
19. Pindos, Strategic Planning Center, Trikala, Greece
20. Istituto Nazionale per la Ricerca Scientifica e Tecnologica sulla Montagna (INRM), established in 2000, Roma, Italy ([www.inrm.it](http://www.inrm.it))
21. Institut de la Montagne, founded 1999, Chambéry, France ([www.institut-montagne.org](http://www.institut-montagne.org))

---

### Notes to readers

This article is the part of the project called Innovative Structures for the Sustainable Development of Mountainous Areas (ISDEMA). A paper prepared for the Thessaloniki seminar. 17-18 March 2002

The author may be reached at:

Bundesanstalt für Bergbauernfragen  
Möllwaldplatz 5  
A-1040 Wien  
Austria