



Integrated Development of Epirus: Fourth National Technical University of Athens (NTUA) and NTUA Metsovion Interdisciplinary Research Center (MIRC) Interdisciplinary–Interuniversity Conference, 23–26 September 2004, Metsovo, Greece

Authors: Rokos, Demetrius, and Michailidou, Elya

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Policy Options to Support Transhumance and Biodiversity in European Mountains

A Report on the TRANSHUMOUNT Stakeholder Workshop, Landquart/Zurich, Switzerland, 26–28 May 2004

Transhumance: definition and importance

Policy recommendations were developed in May 2004 in Switzerland within the framework of the European Union Accompanying Measure “TRANSHUMOUNT: A review of the role of transhumance in mountain ecosystem processes and dynamics” (EU 5th framework EVK2-CT-2002-80017). Transhumance—the seasonal oscillatory movement of livestock—is a very diverse practice. In some countries, it is mostly historical, whereas in others it is still very much alive. Common features are its flexibility, its complexity, and the utilization of complementarities in space (between habitats/landscapes) and time (between seasons). Transhumance links high mountain habitats with agricultural land in the valleys and in some cases adjacent lowlands. These elements together must be seen as a comprehensive system.

Throughout Europe, more than 4 million ha of agricultural land depend on transhumance. Many valuable cultural landscapes, rural communities, habitats, and species are directly linked to transhumance and are vital for tourism in mountain regions. The functioning of transhumance is threatened by modern pressures such as industrialization of agriculture and globalization, and by the difficulty of reconciling the demands of transhumance with a modern lifestyle. New ways must be found to maintain valuable transhumance landscapes while taking modern technological and societal developments into account.

Transhumance landscapes as regions of high nature-value farming

Transhumance landscapes are cultural landscapes that have evolved over centuries through the adapta-

tion of human activities to harsh and fragile mountain environments. They comprise a wealth of traditions, local highly specialized knowledge, languages, mentalities and handicraft/art. Historically, transhumant systems consist of seasonal grazing sites, corridors, and local marketplaces. Habitats are therefore only one part of the story. The landscape is the framework in which habitats, vegetation and species are integrated. Similar habitats may need different management regimes depending on short-term and/or long-term objectives. The appropriate grazing pressure may also be different for contrasting habitats, such as calcareous grasslands and heathlands. Although they are part of the same system, the management of drove roads/*cañadas/tratturi* can be considered independently of the other parts of the system.

Conservation measures need to be considered at 4 general levels:

- Landscapes, either as habitat complexes or as separate elements (eg *cañadas*);
- Habitats (eg alpine grasslands, mesic grasslands, scrub);
- Vegetation communities (eg *Alyssa-Sedion albi* and *Molinion caeruleae*);
- Animal and plant species (eg vultures and orchids).

The latter 3 represent different aspects of biodiversity.

Transhumant landscapes can only be preserved as a whole when all parts of the system maintain their function. The exception is modern, mobile sheep flocks in the Netherlands, which could be extended elsewhere. This means that the spatially different parts of the systems need to be conserved in

a coherent way, by market-based and/or subsidized transhumance systems. The market-based system requires the maintenance of traditional agriculture or the development of new markets and the recognition of transhumance products. Any subsidy-based system requires political recognition of the value of nature conservation, cultural and other societal functions (eg fire prevention, scenery for tourism).

Habitats and biodiversity

Some habitats involved in transhumance are listed in Annex 1 of the EU *Habitats and Species Directive* (eg 6150: siliceous, alpine, and boreal grasslands), while others are priority habitats (eg 6230: species-rich *Nardus* grasslands). They require protection and can only be maintained in their current state through grazing. Transhumant methods can be used for their management, and management systems should be developed based on traditional practices, as in the management prescriptions in Environmentally Sensitive Areas in the UK.

Some species and races depend on transhumance. Examples include special breeds of domestic animals (eg Tudanca cattle), birds of prey (eg Griffon vultures), plant species (eg autumn crocus). Some of these are named in Annex 2 of the EU *Habitats and Species Directive*. It is possible to develop alternative management programs for birds of prey, but this is very difficult or impossible for many stress-intolerant grassland species and the associated insects and small mammals. Therefore support of transhumance can be of importance in achieving the goal of halting loss of biodiversity by 2010, the subject of many international and European agreements such as the 6th Convention on Biological Diversity Conference

in 2002, the UN World Summit on Sustainable Development in 2002, and the Gothenburg European Council in 2001.

Recommendations

At the TRANSHUMOUNT stakeholder workshop in Landquart, Switzerland, 26–28 May 2004, attended by 35 participants from 9 countries, recommendations were made in order to improve recognition of the public services provided by transhumance systems, improve the interaction between rural communities and herders, support the sale of products from transhumance systems, and provide directions on the design of public financial support schemes. The emphasis is not on additional public expenditure but on getting the priorities of the current support schemes right and on setting regulations that favor and do not impede transhumance.

1. Improve recognition of the public services provided by transhumance systems

- The European Union (EU) should recognize the role of transhumance in maintaining many highly valued agricultural landscapes.
- Transhumance is an integral part of traditional farming in most European mountains, and its significance for sustainable development should be recognized in the formulation of agricultural policies.
- Transhumance systems are involved in many high nature-value farming systems, and EU countries should consider them as part of their assessment of Natura 2000 sites.
- The current Common Agricultural Policy (CAP) reform is likely to accelerate the process of polarization of land use between intensively used land and that which is being progressively abandoned—an outcome which is not intended.
- Although supporting transhumance agrees perfectly with the logic of the CAP reform as

intended, in practice the new regulations are likely to exacerbate the current weaknesses of the system from the point of view of marginal livestock systems.

2. Improve the interaction between rural communities and herders

Local rural communities and herders are interdependent, but often the role of shepherds is critical for the following reasons:

- Herding requires both traditional knowledge and skills relating to animals and sustainable grazing, as well as the aptitude to adopt new technologies. These capabilities need to be better acknowledged by society with the creation of specialized education to provide a recognized professional qualification.
- Herders are often only seasonally employed and they are therefore disadvantaged in terms of social security. Out-of-season jobs need to be provided for shepherds, as well as more flexible social security systems.
- Living conditions are often harsh during transhumance. Paying adequate salaries would facilitate the recruitment of skilled professionals.
- In some cases, improving lodging and accessibility could increase the attractiveness of the work. Accessibility, however, must remain at levels which do not endanger habitats and biodiversity.
- Transhumance helps maintain viable rural communities in marginal areas—a core objective of agricultural policy. It therefore deserves public support.

3. Support the sale of products from transhumance systems

- Labeling transhumance products proves effective in some cases because it provides an identity that consumers value. That distinctiveness can be according to taste, region, or rarity. Labeling initiatives should be further supported and launched where possible.
- Direct marketing and local distribution work well. Targeting spe-

cialized markets is also important. Identifying the extent and demand of the market is vital.

- Public awareness can come through tourism and/or conservation agencies. Both need to be made aware of the ecological, agricultural and social importance of transhumance so that they can increase public awareness.
- The local and decentralized processing and marketing of products should be encouraged.

4. Directions on the design of public financial support schemes

Many habitats and species associated with transhumance are unique and irreplaceable and have both economic and intrinsic value. Transhumance also contributes to the protection of mountain ecosystems and landscapes from natural hazards (eg fire, erosion, avalanches, landslides) by maintaining a stable mosaic of patches that have developed over centuries. This saves money and avoids costs that society would otherwise have to meet. Therefore, transhumance deserves much more public support. There is a need to support the livelihoods of transhumance farmers, or else they will continue to disappear.

- In mountain regions, transhumance is central to multifunctional agriculture. The European Union should recognize this. It could consider the example of Switzerland, where a sophisticated support system for sustainable mountain farming exists.
- Some of the modulation money should be spent to support transhumance systems through agri-environmental and other rural development programs.
- Agri-environmental measures and rural development measures that support transhumance should receive at least 80% funding from the EU.
- Current hygienic standards may prevent the small-scale processing and marketing of transhu-

mance products. Hygienic standards need to be flexible enough to allow for the production and marketing of local transhumance products without endangering food safety.

- Local, traditional breeds are best adapted to transhumance. They are also important reserves of genetic diversity for future breeding programs. Their further reproduction needs to be assured and supported.
- Public institutions should have a policy for maintaining the network of drover roads and tracks required for the migration of herds, including facilities for animals to be transported by trains or lorries.

- In cases where transhumance links areas over long distances, regional governments and local authorities need to cooperate to sustain and enhance transhumance. Cooperation between landowners and livestock farmers in disparate regions needs to be recognized and supported.

Further information

More information is available at www.alterra-research.nl/transhumant, and in the recently published book:

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Felix Herzog

Agroscope FAL, Swiss Federal Research Station for Agroecology and Agriculture, Reckenholzstrasse 191, 8046 Zurich, Switzerland. felix.herzog@fal.admin.ch

Robert G. H. Bunce, Marta Pérez-Soba, Rob H. G. Jongman

Alterra, PO Box 47, 6700 AA Wageningen, The Netherlands. bob.bunce@wur.nl; rob.jongman@wur.nl; marta.perezsoba@wur.nl

Antonio Gómez Sal

Universidad de Alcalá, 28871 Alcalá de Henares, Madrid, Spain. antonio.gomez@uah.es.

Ingvild Austad

Sogn & Fjordane University College (HSF), Box 133, 6851 Sogndal, Norway. ingvild.austad@hisf.no

Integrated Development of Epirus

Fourth National Technical University of Athens (NTUA) and NTUA Metsovion Interdisciplinary Research Center (MIRC) Interdisciplinary–Interuniversity Conference, 23–26 September 2004, Metsovo, Greece

The NTUA Metsovion Interdisciplinary Research Center (MIRC)

The National Technical University of Athens (NTUA) Metsovion Interdisciplinary Research Center (MIRC) for the protection and development of mountain environment and local European cultures was founded in 1993 by decision of the NTUA Senate, and was set up in 1998. MIRC's aim is to support NTUA at the scientific, cultural, and research levels in connecting its activities with Metsovo, hometown of the NTUA founders, and to promote the effective contribution of NTUA to integrated development in the area. To this end, MIRC cooperates closely with educational, research, and cultural organizations in the region of Epirus, with the Municipality of Metsovo, the University of Ioannina, the Cultural Association of Metsovites in Athens, the Epirus Egnatia Foundation, etc.

Past NTUA and NTUA MIRC Interdisciplinary–Interuniversity conferences

The NTUA and NTUA MIRC conferences are held every 3 years in Metsovo. They feature:

- Scientific, research, and technical/technological contributions addressing broader issues of technology, development, environment, and culture, as well as specific issues of Metsovo, Metsovo Province, and the region of Epirus by scientists, graduate engineers, and members of the teaching and research staff of the NTUA, the universities of Ioannina and Thessaly, and other Greek universities.
- The best graduate and postgraduate projects/theses on integrated development by students of the NTUA and the universities of Ioannina and Thessaly.
- Interdisciplinary and integrated research into multidimensional modern global issues relevant to

monitoring and protection of mountain environment and local cultures, and the contribution of education, research and technology to the integrated development of mountain areas.

The NTUA MIRC has already successfully organized:

- The 1st NTUA Interdisciplinary–Interuniversity Conference, “NTUA for Metsovo. Paying Back a Part of the Debt,” Metsovo, 5–7 May 1995. Conference proceedings were published by NTUA Press, Athens 1998, and contain 39 research papers and studies in Greek, with abstracts in English.
- The 2nd NTUA Interdisciplinary–Interuniversity Conference, “Technology, Culture and Decentralization,” Metsovo, 3–6 June 1998. Conference proceedings were published by Alternative Editions, Athens 2001, and contain 50 research papers and studies in Greek, with abstracts in English.

- The 3rd NTUA Interdisciplinary–Interuniversity Conference, “The Integrated Development of Mountain Areas. Theory and Practice,” Metsovo, 7–10 June 2001. Conference proceedings were published by Alternative Editions, Athens 2004, and contain 55 research papers and studies in Greek, with abstracts in English.

The 4th NTUA and NTUA MIRC Interdisciplinary–Interuniversity Conference

The subject of the 4th Conference was the integrated development of Epirus. Epirus is one of the poorest European Union regions in economic terms, but one of the richest in terms of natural environment, biodiversity, local cultures, traditional knowledge, and intellectual and artistic development.

Integrated development has been defined as development that is simultaneously economic, social, political, cultural, and technical/technological—in space and time—and is pursued with respect for, and in dialectical harmony with, human beings and the particular natural and cultural environments of which they are a part, and not masters, owners, or exploiters. In the philosophy of the

Conference approach, the integrated development of Epirus presupposes valid, accurate, and integrated inventory, recording, mapping, systematic monitoring and, most importantly, an understanding of the elements, characteristics, trends, and interactions that make up Epirus’s natural and socioeconomic reality—particularly issues, possibilities and constraints in a world that is becoming more and more complex and interdependent.

Similar to the previous NTUA and NTUA MIRC conferences, the 4th Conference upheld the tradition of dialectically integrating the theoretical and experimental contributions of mature and young researchers, as well as interdisciplinary research contributions relevant to the conference topic, with proposals for actions necessary for the integrated development of Epirus. 63 interdisciplinary research papers and studies by members of the academic communities of the NTUA, the University of Ioannina, other universities in Greece, researchers in the public, social, and private sectors, addressing the objectively multidimensional development and environment issues affecting Epirus, were presented. They included critical reviews of relevant European and national policies, action programs, and projects in the framework of the needs, views, and

demands of the inhabitants of Epirus, and the real possibilities and limitations of the physical and socioeconomic reality of Epirus.

Conference participants (scientists, educators, government ministers, local government representatives, and members of the local population) agreed that the establishment of a School of Environment and Development of Mountain Areas at MIRC’s main branch in Metsovo, under the aegis of the NTUA, could contribute to the integrated development of Epirus and Greek mountain areas in general. This will be an immediate objective of MIRC’s Scientific Committee.

Once conference proceedings are published, there will be an announcement on MIRC’s web site (<http://www.ntua.gr/MIRC/>). The next NTUA and NTUA MIRC Interdisciplinary–Interuniversity Conference will be held in Metsovo in 2007.

Demetrius Rokos

Scientific and Administrative Responsible of the NTUA Metsovo Interdisciplinary Research Center.
National Technical University of Athens, Building of Technical Service, Patission 42, Athens 10682, Greece.
drdrok@central.ntua.gr, mirc@central.ntua.gr

Elya Michailidou

NTUA Metsovo Interdisciplinary Research Center, National Technical University of Athens, Building of Technical Service, Patission 42, Athens 10682, Greece.
elmich@central.ntua.gr, mirc@central.ntua.gr

Mountain Studies Institute (MSI) “State of the San Juans” Conference, Silverton, Colorado, 24–26 September 2004

“Linking Communities, Researchers and Practitioners”

The Mountain Studies Institute (MSI), based in Silverton, Colorado, USA, held its first “State of the San Juans” Conference on 24–26 September 2004, with the theme “San Juan Mountains Science and Research: Linking Communities, Researchers and Practitioners.”

Approximately 130 participants learned about ongoing research in the San Juan Mountains and about current natural, economic, and social trends in the region.

A highlight of the first day was an examination by representatives of 6 regional watershed groups—meeting together for the first time—of strategies for watershed restoration and protection that have been tried and

found to be most successful. Each of the 6 watersheds—the Animas River, the San Miguel River, the Lake Fork of the Gunnison River, Willow Creek (a tributary of the upper Rio Grande), the Dolores River, and the Uncompahgre River—have headwaters in the San Juan Mountains and have seen extensive degradation during a century of hard rock mining that came to an end within the last 20



years. Issues in each watershed are distinctive in detail, but all of these volunteer groups have common needs for both historic and current water quality data, and have encountered challenging problems in their restoration and remediation efforts. These groups are relatively young (the oldest having been formed in 1994), but with the help of government land managing agencies, they have all made progress toward goals of restoring their watersheds to an accessible level of land and water quality.

The power of collaboration was very much in evidence during a session in which several natural resource protection partnerships discussed their work. The Red Mountain Task Force, working with the Trust for Public Lands, has obtained federal land and water conservation funds with which they have purchased old mine sites and over 7000 acres (2835 ha) of private land for protection in the Red Mountain Mining District. The San Juan Fen Partnership, collaborating between 3 local governments, the US Forest Service, Telluride Ski Company, and MSI, continues the critical work of monitoring and studying ancient fens, and protecting some of these from degradation due to alpine ski area expansion. Operating very informally, the Ponderosa Pine Partnership was organized to address a critical need to better manage an overgrown ponderosa pine forest at the west end of the San Juan Mountains. Organized in 1993, it has demonstrated that collaboration between scientists, local governments, local loggers, and local environmental groups is an essential ingredient of an integrated approach to community forestry. The Partnership emphasizes that collaboration means working out details of a project together, and *jointly* sharing responsibility.

Sixteen papers were presented in a poster session late on the first day of the conference. Although this session had no stated theme, over half the posters dealt with water quality in the headwaters of several watersheds

within the San Juan Mountains. Such emphasis is to be expected, because restoration of these mining-affected watercourses is an ongoing activity, and monitoring, methods of restoration and remediation, and evaluation of results continue to be important.

Two important keynote talks began the second day of the conference. Ken Salazar, Attorney General of the State of Colorado, spoke eloquently about the many serious water issues facing the Colorado Rocky Mountains region as a consequence of continuing development and increasing demand for consumptive uses of water. Because the San Juan Mountains harbor headwaters of a significant number of tributaries of the major rivers emanating from Colorado, these issues are paramount for future sustainability of San Juan Mountain communities. Dr William Baker, University of Wyoming, delivered the scientific keynote address on "Science in the San Juans." He has several active research projects ongoing in the San Juans, generally examining vegetative changes in response to natural events such as floods and fires, as well as human-induced changes from, for example, grazing. His observations provided a prescient introduction to the 26 oral presentations that followed. These were divided into 2 sessions, one on "Water quality, watersheds and the mining legacy of the San Juan Mountains," and the other on "The San Juan Mountains system: History, ecology and land management."

The water quality session continued some of the themes evident in the posters, namely continuing assessment of the quality of San Juan Mountains headwaters. An obvious question important to reclamation efforts is: What was the water quality before mining began in the late 1800s? Studies of ferricrete deposits (clast-abundant, iron-oxyhydroxide-cemented surficial deposits), bog iron deposits, and fens are important for understanding natural processes related to acid rock drainage. US Geological Survey scientists showed from radio-

carbon dating of ferricrete-encased wood that natural acid drainage existed at least 9000 years ago, as well as during and after mining. This knowledge is important to those carrying out stream restorations and mine site remediations, because it helps to define pre-mining stream conditions.

In the session on the San Juan Mountain system, presentations ranged from an attempt to define the mountain system itself, to documentation of natural change by rephotography, discussion of formation of iron bogs and fens, and examination of issues related to management of Congressionally designated Wildernesses in the San Juans. The economic vitality and quality of life in small mountain communities formerly dependent on mining were subjects analyzed in 2 final presentations.

In summary, this conference highlighted the extensive amount of research being conducted on the condition of the area's streams, and on the efforts being expended to restore them to pre-mining quality. It was productive to have government and academic researchers interacting with members of stakeholder groups and interested local volunteers. One of MSI's important objectives is to continue to make such opportunities possible. The Institute will organize another "State of the San Juans" Conference in 2006.

The Mountain Studies Institute (MSI)

MSI is an independent, non-advocacy, not-for-profit 501(c)3 mountain research and education institution and high-altitude field station established in 2002 in Silverton, Colorado (9318 ft/2840 m). It serves as a center of knowledge in mountain research and education in the San Juan Mountains and, by extension, in mountain ranges around the world. The Institute supports students, educators, researchers, land and environmental managers, elected officials, and the public within and beyond the region. It facilitates

academic study, field research, data collection and dissemination, experiential learning, and provides facilities and logistical support. As an important part of this mission, MSI is developing an online database that will contain a comprehensive set of water and climate data, demographic data, GIS data, and a complete bibliography of published research focused on any aspect of

the San Juan Mountains area. Baseline data sets are being incorporated. An index of researchers and their projects in the San Juan Mountains is under development. The database can be examined at the Mountain Studies Institute web site. The Institute has formal collaborative relationships with Fort Lewis College, the US Forest Service/Bureau of Land Manage-

ment, and the Silverton, Colorado, community. MSI is using research and education as a sustainable economic development model for mountain communities.

Charles W. Burnham

President, MSI.
Mountain Studies Institute, PO Box 426,
Silverton, CO 81433, USA.
E-mail: info@mountainstudies.org
Web site: www.mountainstudies.org

Mountains at the World Conservation Congress, Bangkok, November 2004

The World Conservation Congress (WCC) is the general assembly of IUCN–The World Conservation Union and takes place every 4 years. It comprises the business meeting of IUCN members, meetings of IUCN's 6 Commissions, and technical meetings within the "World Conservation Forum." Mountains were clearly on the agenda throughout the 3rd WCC, which took place in Bangkok, Thailand, from 15–25 November 2004. The WCC provided the first global opportunity to present the work of IUCN's Mountain Initiative Task Force (MITF), established in 2003 by the chairs of two of IUCN's Commissions, the Commission on Ecosystem Management (CEM) and the World Commission on Protected Areas (WCPA). During the first two days of the WCC, MITF activities were reported to both Commissions, as were those of WCPA's Mountain Biome programme, which has been operational since 1993.

The main day for mountain events was 18 November. This started with the launch of two books developed within WCPA's Mountain Biome programme. Both of these had emerged from a workshop just before the World Parks Congress, held in South Africa in September 2003: *Guidelines for Planning and Managing Mountain Protected Areas*, compiled and edited by Larry Hamilton and Linda McMillan, and published by IUCN; and *Managing*

Mountain Protected Areas: Challenges and Responses for the 21st Century, edited by David Harmon and Graeme Worboys and published by Andromeda Editrice. The launch was widely reported in the international media.

The day's main mountain event was a workshop on conservation and sustainable development in mountain areas, which filled the room to more than capacity. At the workshop, a brochure on the same theme was launched, showing the great diversity of activities being undertaken by IUCN and its partners across the world (see <http://www.iucn.org/themes/cem/mountains/docs/conserv-sust-04.pdf>). Many of these activities were presented during the workshop, which began with an introduction to the Mountain Partnership, of which IUCN is an increasingly active member. The workshop concluded with discussion of potential future mountain activities of IUCN and its partners, linked to a resolution sponsored by the International Centre for Integrated Mountain Development (ICIMOD) which was to be considered at the Members' Business Meeting of IUCN later during the Congress. A further workshop on cooperation in the mountains of the Mediterranean, which took place on 20 November, attracted participants from throughout the region for a lively multilingual discussion.

During the Members' Business Meeting, the resolution on Conservation and Sustainable Development of Mountain Regions was approved, as were others on a Mediterranean Mountain Convention and on transboundary cooperation in mountain areas (to be the theme of WCPA Mountain Biome meetings in 2005 and 2006). Various recommendations also considered specific mountain areas to one extent or another. The final versions of all resolutions and recommendations will be published on the IUCN web site (www.iucn.org) in late February 2005. In summary, the 3rd WCC showed that the Commissions, Secretariat (headquarters and regional offices) and members of IUCN have great experience and many strengths in mountain regions around the world. The Congress also provided the groundwork for IUCN to play a greater role in contributing to conservation and sustainable development in mountain regions, both regionally and globally, particularly through the implementation of the Mountain Partnership and the Mountain Work Programme of the Convention on Biological Diversity.

Martin Price

Chair, IUCN Mountain Initiative Task Force.
Director, Centre for Mountain Studies, Perth
College, UHI Millennium Institute, Crieff
Road, Perth PH1 2NX, UK.
martin.price@perth.uhi.ac.uk