

Mountain Forum Bulletin

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Deserts and Desertification in High Altitude Areas

- › Impact of Desertification on Traditional Societies in the Elba Mountain Region of Egypt
- › Central Asia: Farmhouse Insulation Against Desertification
- › Soil Degradation in the Swiss Alps
- › The Role of Quinoa and Other Crops in the Andean Desert Regions
- › Different Perceptions of Desertification in the Context of the Argentinean Patagonia
- › South Okanagan: The Threatened Desert

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Cover photographs (clockwise from right)
Harvesting the high desert, Tibet. Photo: Dr. Jutta Kern
Quinoa field at sunset, Bolivia. Photo: Sven-Erik Jacobsen
Osoyoos Lake and desert habitat, British Columbia, Canada. Photo: Robert A. Cannings
Eastern desert, Egypt. Photo: Usama Ghazaly

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Dear Mountain Forum friends,

Welcome to the third issue of the new avatar of our Bulletin, which has received a lot of positive feedback since we first launched it in July last year. A lot of credit for this goes to our valued members, who are based all around the globe, for without their help and input it would not have been possible to put this Bulletin together. Our warm thanks also goes to the publication coordination team and the design team.

This current issue focuses on Deserts and Desertification in High Altitude Areas as drylands are becoming an increasing problem for populations all over the world.

Furthermore, this year the World Environment Day theme also focused on the issue, and the slogan was "Don't Desert Drylands!" It emphasised the importance of protecting drylands, which cover more than 40 percent of the planet's surface.

When we think about deserts, Africa springs to our mind. However, not many of us are aware of the fact that countries all over the world are affected by desertification. Even though the severest desertification is seen in Africa, where 66 percent of the land is affected, an astonishing 46 percent of Asian soil is threatened by desertification and 31 percent of Latin America consists of dry land. Globally, some 2,600 million people are affected by desertification and 13.5 million people are in danger of being displaced due to this. Studies also say that 24 billion tonnes of soil in the upper layers is destroyed in the world each year.

The term "desertification" was actually coined in the 1930s, when parts of the Great Plains in the United States turned into the "Dust Bowl" as a result of drought and poor practices in farming. During the dust bowl period, millions of people were forced to abandon their farms and livelihoods. Greatly improved methods of agriculture and land and water management in the Great Plains have prevented that disaster from recurring.

If we are to stop and reverse the degradation of arid and semi-arid lands, we must understand how and why the rates of climate change, population growth, overgrazing and food production adversely affect these environments.

In the recent few decades we have learnt that soil deterioration is occurring further afield from dry lands. Indeed, land degradation occurs anywhere, where soils are over-exploited. In this respect, mountains still suffer from indifference by lowland societies. The reason for this coldness upon land degradation in mountain regions is worth deep thought. In the era of connectivity, globalisation and satellite earth observation, is this a historical legacy? Or could this

be a kind of land management choice, designed to unconditionally exploit our planet's surface resources?

With this issue of the Bulletin we hope to provide you with enough stories and case studies to understand the problem of deserts and desertification in mountain regions as our aim is to make a contribution to saving mountain landscapes, and not deserting them!

With best wishes,



Billi Bierling



Jacopo Pasotti

Your feedback is precious to us. Please write in with your comments to bulletin@mtnforum.org. You can also write to us by regular post at the address given on the back cover of the Bulletin.

Impact of Desertification on Traditional Societies in the Elba Mountain Region of Egypt

Usama Ghazaly



Eastern desert, Egypt. Photo: Usama Ghazaly

Mohammed Hassay is an old mountain man from the Bisharian tribe. He used to gather fuel wood and take his cattle out to graze along the Elba mountain slopes daily. He would return to his traditional shelter in Wadi Aedieb, where he lived with his small family, by sundown. But the drought in this area forced him and his family to migrate to the Abou Ramad village on the coastal plains of the Red Sea some seven years ago. Sometimes he visits Wadi Aedieb in the Elba mountain region out of nostalgia. But the fact remains: his family is one of the many, who have outmigrated from the Elba mountain region due to drought and desertification.

Elba Mountain Protected Area (Gabel Elba PA) is the largest and most important protected area in Egypt. It encompasses an area of some 35,600 km. It is home to an enormous variety of habitats and landscape

features, ranging from coral reefs to mountain habitats. It supports a rich diversity of flora and fauna: at least 27 species of mammals, 38 species of reptiles and amphibians, and some 60 species of breeding birds. Furthermore, Gabel Elba is situated on an internationally important migratory route for birds, especially birds of prey.

One of the most prominent features of this protected area is Gabel Elba (Elba Mountain). Due to its proximity to the sea as well as its interception of moisture-laden north-east winds, Gabel Elba enjoys a higher precipitation than the other Red Sea Mountains. The summit of Elba Mountain is an "oasis of mist" where much of the precipitation occurs in the form of mists and clouds, creating a unique and rare ecosystem unlike any other in the country. Indeed, Gabel Elba is a biodiversity hotspot whose biological diversity is unparalleled in all of Egypt. The relative abundance of moisture supports a diverse flora of some 458 plant species, which constitute almost 25 percent of the plant species recorded for the entire country. Many Afro-tropical elements have their northern limits at Gabel Elba, and the dense cover of acacias and other scrubs represent the only natural woodland of Egypt.

There are three main tribes residing in the Gabel Elba PA (GEPA): the Bisharia, the Ababda and the Rashayda. The Bisharia are the largest tribe in the GEPA. This tribe's territory includes Egypt, Sudan and Eritrea. The Bisharia are a sedentary to semi-nomadic people of Hamatic descent speaking an unwritten language, Beja. The Ababda are an indigenous tribe of the south eastern desert, predominately found in the northern sections of the GEPA. The Rashayda are a non-indigenous tribe inhabiting the coastal plain. They originally come from Saudi Arabia. Each of the three tribes has a Head Sheikh who represents the tribe as a whole. The main socio-economic activities of the local tribes are livestock herding and charcoal production.

The area is currently threatened by desertification and land degradation. This follows a heavy drought period from 1996 to 2002. The drought during those years has had major impacts on biodiversity and has resulted in the intensification of use of the limited available natural resources, which contributed to biodiversity loss. The drought triggered a massive outmigration of the population from the desert to the coastal settlements to escape the hardships of the desert for better standards of living. Unemployment is high, particularly among young men.

For years, indigenous peoples have been performing their traditional activities respecting the environment and benefiting from it. They have been able to graze the land and collect charcoal and water according to their needs and have their own resource conservation systems. Traditional laws regulate the use and ownership of the grazing land; the land is allocated inside the tribe to clans or families. Rules also apply to charcoal collection and hunting. There is a water management system for saving water and maximising its use.

A severe drought has caused the movement of people inside the GEPA owing to the little rainwater resources available in the region. Stress has been put on the land. There is plenty of land in the GEPA but very little water. Therefore, people move according to water availability and they graze and overgraze the same plots. The same can be said about charcoal production. Among the indigenous people it has always been forbidden to cut living trees. Recently, this has been happening due to an increasing demand for charcoal in the urban areas as well as the need of income for the locals. As a consequence, the intensive charcoal exploitation caused heavy cutting

of acacia trees inside the area. This is affecting the soil stability and thereby increasing the rate of land degradation in many sensitive areas inside the park. Loss of trees and other vegetation from over-harvesting may affect the ecosystem and increase the land degradation and desertification rate inside GEPA, having an impact on the lives and livelihoods of the local communities.

As a result, people in the mountains are not able to preserve the environment they live in. At the same time, the environment is not able to respond to the demand of the people. Local communities are therefore in danger. They are suffering from malnutrition and dehydration, and their diet does not provide them with enough calories. Women suffer from iron deficiency. Infant mortality is high.

Migration towards the coastal areas has led to changes in the social order of traditional societies. Traditional conservation systems are breaking down leading to an imbalance in the human/resource equilibrium and contributing to the vicious cycle of resource depletion. Valuable customs, traditions, skills and indigenous knowledge are being lost and could potentially disappear within the coming decade.

To the people living in GEPA, the notion of a Protected Area (PA) has been part of their cultural background for a long time. Under the pressure of drought and changes in the traditional system, however, other pressures have affected the natural resources and the land of Elba mountains. Overgrazing is likely to intensify as the local population becomes sedentary and traditional nomadic movement is disrupted.

On top of this, there is a new invader into GEPA, the *Prosopis* species. *Prosopis* poses a threat to the Elba PA's biodiversity, as it negatively impacts on ecosystem functioning and catchment hydrology. It has also had a secondary effect in that the dense thicket has displaced livestock, resulting in more intense grazing pressure in other parts of the protected area. The species has spread into all habitats, from salt marshes to the Red Sea coast in the east, to desert plains in the west, and it makes up about 40 percent of the plant community in the Halaib area. *Prosopis* is now rapidly increasing and replacing the native species, especially the acacia tree.

All these problems should be carefully investigated. There is a direct correlation between the deterioration of the environment and the precariousness of people's lives. It is therefore important to look at the Protected Area as a means to intervene on behalf of the well-being of the locals. The Protected Area can contribute to the well-being of the communities, for example by focusing on the preservation of the environment, and letting the local population share the benefits. In order to do this, communities need to fully participate in managing the Protected Area. The design should reflect customary and indigenous occupancy, use of resources, and control systems. Locals should be equitably involved in the decision making process, as this gives them an opportunity to contribute to their own development according to their own priorities as well as the priorities of the environment.

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Central Asia: Farmhouse Insulation Against Desertification

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Development and testing of new insulation techniques in Kyrgyzstan. Photo: CDE

The semi-arid mountain regions of Central Asia are home to around 10 million people. The vegetation cover in these areas is often sparse and fragile, and its overexploitation, which is mainly due to firewood collection and excessive pasturing, is one of the major causes of desertification. Apart from the large urban centres, agriculture and livestock are the economic mainstay of the population. Considerable increases in the price of fossil energy and electricity force households to use locally available woody resources. However, firewood collection is a time-consuming activity that often takes several hours a day and, furthermore, compromises the regeneration and future availability of local woody resources.

Largely subsidised by the central state during the Soviet era, families benefited from a

reliable and inexpensive energy supply. For many households it was normal to leave a gas burner on the cooking stove on at all times: gas was free, whereas matches had to be bought. Under these conditions, practically no investments were made into measures to reduce energy consumption, such as insulating buildings and increasing the efficiency of heating systems. As a result, a house in Central Asia requires as much energy as a one-family home in Switzerland, while offering much less comfort: for example, in winter, the inside temperature hardly ever rises above 10°C. This cold and humid environment results in bad sanitary conditions and is a cause for poor health. An increasing part of the population is suffering from tuberculosis, and abdominal diseases are becoming more frequent among women. These health problems affect the availability of labour force and, in the long term, have a negative influence on the overall productivity of small-scale farming households.

The collapse of the Soviet Union confronted the population of Central Asia with a drastic change in their energy supply situation. In Tajikistan and Kyrgyzstan, two countries that have no fossil energy sources of their own, fuel supplies are increasingly unreliable, and prices are constantly rising. Some households would have to spend 30 to 50 percent of their cash income on conventional sources of energy such as electricity, coal and gas - an expense most of the families cannot afford. They are therefore forced to fall back on alternative sources of energy such as locally available wood and dried dung.

Inevitable resource depletion

Woody resources in the semi-arid region of Central Asia are scarce. Most of the forests have been cleared - in Tajikistan, the forest cover has diminished by 40 percent since the 1970s. At high altitudes, meagre trees and shrubs are the only available vegetation. Teresken, for example - a shrub that takes 20 to 30 years to reach its maximum height of 30 cm - is used as a source of fodder, and is also increasingly cut as a source of fuelwood. However, one hundred hectares of this plant are just enough to cover the energy needs of one family in a single winter. This disproportion of availability and demand inevitably leads to overexploitation. Excessive cutting makes it impossible for the slow-growing shrubs to regenerate. Several thousand hectares of land in Central Asia have been stripped of their vegetation cover and are now threatened by erosion and desertification. Moreover, by using woody vegetation as a source of energy, people are competing for these shrubs directly with their livestock, i.e. with their own source of livelihood.

Dung is another possible source of energy that is freely available. However, heating one home throughout the cold season requires several tonnes of dried dung, which represents nearly the entire annual manure production of an average household. When dung is burnt as a source of heat, precious fertiliser for pastures goes up in smoke. The results are reduced soil fertility and a loss of agricultural productivity.

Innovative solutions

To decrease the population's dependency on resources that are already very scarce, the Central Asian Mountain Partnership (CAMP) has been conducting research and tests with locally available insulation material, and adapting processing and application techniques. Analysis of current energy consumption shows that a typical farmhouse uses the equivalent of 40 litres of oil per square metre per year. Tests demonstrated that simple insulation can reduce this amount by 60 percent down to 16 litres of oil per square metre per year (European standard is eight litres).

Thermal insulation of housing is being improved with dried reeds used for covering outside walls and ceilings. Roughcasting made of cement or clay protects this insulation against bad weather and rodents. This helps conserve the heat inside buildings. In addition to insulation work, heating systems are being modified to obtain better storage of the heat produced. Depending on the condition and the size of a building, the cost of insulation varies from USD 300 to 400. To reduce costs, homeowners can participate in construction work.

Efficient utilisation of energy decreases the use of fuelwood and dried dung, thus reducing the pressure on vegetation cover and leaving dung on pastures as fertiliser. Families can save up to 60 percent of their heating costs, while increasing the comfort and sanitary conditions of their housing. Moreover, these insulation techniques are simple and can be easily learned by local craftsmen, who are given basic training in the field. Another positive effect is the emergence of a new kind of entrepreneurship, new jobs, and a revitalisation of the local economy achieved through a broad home insulation campaign.

In addition to thermal insulation, CAMP is also promoting the planting of wood as a sustainable source of energy. Adaptable and strong growing trees are planted with support from village populations. Along with the positive ecological impact of promoting a renewable source of energy, these initiatives have an important social benefit for the entire village. Furthermore, poor households who can rely on wood gain more independence from the global energy market, its fluctuating prices and controversial transactions, and, at the same time, also become less vulnerable to power play within the village.

The starting point for this project was several studies by CAMP that examined household strategies related to sustainable use and management of natural resources, particularly the vegetation cover. These studies revealed that poor households are forced to spend a large portion of their cash income on energy and that they increasingly fall back on biogenic energy sources. It furthermore found that excessive overexploitation of the vegetation cover bears the risks of increased soil erosion and desertification of vast areas, and that better thermal insulation of housing and improved heating systems can considerably reduce both energy consumption and natural resource depletion.

The population of the mountainous areas of Central Asia faces yet another difficulty with regard to energy supply. Everything seems to indicate that the planned privatisation of the energy sector will result in the exclusion of remote villages from power supply, as the vast electricity networks are too expensive to be maintained. Alternatives must be provided in time to prevent extensive outmigration.

The case of Central Asia shows how closely energy policies are linked to issues like livelihood and desertification. Unfortunately, specialists and politicians involved in the development of energy policies often overlook these direct and indirect links. The results are wrong decisions that incur long-term high costs to the national economy.

A meaningful energy policy cannot be defined solely based on the criteria of market dynamics, production, and distribution. On the contrary, it must also involve aspects of energy efficiency on the consumer side and take account of possible impacts on the population's livelihood situation and on natural resource use.

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- ▶ CAMP website: <http://www.camp.elcat.kg/eng>
- ▶ CDE website: <http://www.cde.unibe.ch>
- ▶ SDC website: <http://www.sdc.admin.ch>

The Centre for Development and Environment (CDE) (University of Berne) focuses on management of natural resources, integrated regional development, and interventions for mitigating syndromes of global change in the North, South, and East. CDE works through research partnerships, education and training, development of concepts and tools, policy advice and sensitisation.

Legend of Mt. Tamalpais

She was a beautiful young Miwok maiden in love with a native American prince. When he abandoned her, she walked to the top of the mountain nearby and died of heartbreak. As she sobbed, the mountain heard her intense sorrow and took pity. When finally she died, the mountain was so moved it changed its form, taking on the supine shape of her body and becoming the Sleeping Lady - Mt. Tamalpais.

(Mt. Tamalpais is just north of San Francisco's Golden Gate)

Source: <http://www.mtnhomeinn.com/legends.html>

Soil Degradation in the Swiss Alps

Dominik Bänninger, Monika Brodbeck, Nadine Hohwieler, Katrin Meusbürger and Christine Alewell



Erosion endangers human infrastructure. Photo: Christine Alewell

Mountains all over the world are unique in their economy, culture and ecology. The extreme topography, climate and remoteness of the areas are the origin of the often overwhelming beauty whilst simultaneously causing high instability, fragility and sensitivity of ecosystems. One inherent limit of ecological stability is the condition of soils in the ecosystems. Soil degradation in mountain systems affects slope stability, water budgets (drinking water reservoirs as well as flood prevention), vegetation productivity, ecosystem biodiversity and nutrient production. Soil degradation is driven by environmental conditions as well as by the behaviour of land-users who, especially in the highly domesticated Alps, have shaped mountainous landscapes radically. In the near future, changes in soil degradation might be dramatically affected by global climate change.

The average winter temperature in the alpine region is expected to increase by 3-5°C by 2100. This increase would be equivalent to temperatures at a lower altitude of about 600-1,000 m and could thus result in a shorter time of snow cover of approximately 70-120 days, as it occurred in the Italian western Alps in the year 2005. Under this scenario soil erosion will increase because of strong leaching effects with no or sparse vegetation cover in late fall and early spring. The change in soil and vegetation development due to climate change as well as the change in land-use will affect soil degradation in many alpine regions.

Unfortunately, mountains are unscrupulously exploited to gain at least minimum economic value. If mankind intends to preserve the culture and ecological heritage of the world's mountains, mountain systems urgently need our protection. Therefore, we are developing methods to describe and predict their ecological status. Until recently, research on soil degradation neglected alpine regions with the exceptions of extreme pressures like land slides, which are hazards to technical or human resources. The uniqueness of mountain systems requires unique tools regarding research, management and prediction; we need, for example, techniques for inaccessible or difficult to access regions that have minimal infrastructure.

We started our project in the Swiss Alps because compared to many other mountainous areas they are relatively highly developed. Thus, a high state of infrastructure is paired with heavy and intensive land use history. While the former allows us to develop scientific methods under relatively convenient conditions, the latter guarantees transferability of these methods to other threatened mountain regions.

From the overall process of landscape change we focus our research on soil degradation caused by soil erosion. We identified important research questions such as - Which are the key processes and parameters controlling soil erosion in mountainous areas? Can we quantify the amount of surface erosion in a mountainous area for the past and present, and can we predict it in the future? Which effect has land-use on soil erosion?

Our research group follows approaches on various spatial and temporal scales from field measurements of stable isotopes, sediment rates and soil characteristics to computer based approaches like modelling, remote sensing and regionalisation with GIS. We are currently investigating a catchment area in the Furkareuss valley (80 square km, 1,400-2,500 masl), located in the central Swiss Alps, where we are studying erosion risk on catchment scale. Soil slips and sheet erosion are detected and then mapped through interpretation and image analysis of aerial photographs. The resulting erosion map is verified by ground measurements. First results indicate that a very active zone of soil slips is correlated to specific geological and hydrological zones. As geology determines soil properties, land use changes are very often bound to underlying geology. To find clearer relationships between erosion and

environmental factors we will acquire further parameters such as vegetation cover, soil properties, topography and management practices in additional areas.

Another approach of our project is to detect soil degradation before there is visible damage. To do this, we analyse the changes of stable isotope ratios of nutrient elements in erosion source and sink sites and compare results with non-degraded sites. We focus on stable isotopes of carbon, nitrogen and sulphur from upland soils down to lowlands. As upland soils differ significantly from wetland soils and riparian zones, stable isotopes of particular compounds such as sulphur, nitrogen and carbon should be suitable as potential tracers for the erosion of soil material from upland to lowland soils. As a reference for the stable isotope investigations the measurement of ¹³⁷Caesium (¹³⁷Cs) concentrations will be used. Caesium concentrations provide important information about the extent and distribution of soil degradation of the last 20 years because this is the time after the deposition of ¹³⁷Cs from the Chernobyl accident in 1986. The particularity of isotope ¹³⁷Cs is that it is strongly adsorbed by clay minerals and organic matter that tend to have limited movement in soils. Thus, spatial redistribution is mainly caused by soil erosion and this can be used to track erosion patterns.



Disturbance of vegetation cover by animals (cows). Photo: Monika Meusburger

Our understanding of soil erosion processes is gradually growing. In future we hope it will be possible to observe and monitor soil erosion. For decision makers like land-users and authorities it will be even more attractive to describe not just the current state of soil erosion but also to predict its development. The latter, we think, will be addressed by small and large scale modelling. Small-scale modelling will be used to quantify sediment rates and their dependency from environmental characteristics, and it will be validated by measurement of sediment rates with sediment traps. Large-scale modelling, instead, is accomplished by comparing time-series of erosion maps for the last 45 years with the accordant land-use maps. With

an even longer perspective, we will estimate its influence on soil erosion in the future defining different model scenarios (e.g. change of land-use practices, climate change). Special attention is directed to the effect of land-use on soil erosion since land-use in the Alps greatly differs from typical practices in lowlands and has experienced significant changes during the last decades. In this sense, the model could supply a decision support system for the land management, for example, to evaluate consequences of novel land-use techniques in the future.

The research cluster is funded by the Federal Office for the Environment of Switzerland, by the Swiss National Science Foundation, by the Swiss State Secretariat for Education and Research within the frame of COST 634 and by the University of Basel, Switzerland.

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The Story of Losar (New Year)

Tibetans all over the world celebrated Tibetan New Year on Sunday, February 6th. The word Losar is a Tibetan word for New Year. LO means year and SAR means new.

The celebration of Losar can be traced back to the pre-Buddhist period in Tibet. During the period when Tibetans practiced the Bon religion, every winter a spiritual ceremony was held, in which people offered large quantities of incense to appease the local spirits, deities and protectors.

This religious festival later evolved into an annual Buddhist festival which is believed to have originated during the reign of Pude Gungyal, the ninth King of Tibet. The festival is said to have begun when an old woman named Belma introduced the measurement of time based on the phases of the moon. This festival took place during the flowering of the apricot trees of the Lhokha Yarla Shampo region in autumn, and it may have been the first celebration of what has become the traditional farmers' festival. It was during this period that the arts of cultivation, irrigation, refining iron from ore and building bridges were first introduced in Tibet. The ceremonies which were instituted to celebrate these new capabilities can be recognised as precursors of the Losar festival.

Later when the rudiments of the science of astrology, based on the five elements, were introduced in Tibet, this farmer's festival became what we now call the Losar or New Year's festival.

Source: <http://www.buddhopia.com/tibet/newyear.html>

The Role of Quinoa and Other Crops in the Andean Desert Regions

Sven-Erik Jacobsen, David Rodriguez, Angel Mujia, Alipio Canahua, Felipe Amachi and Susanne Andersen



Tri-colour Bolivian 'flag'. Photo: Sven-Erik Jacobsen

The Andean countries are inhabited by about 150 million people. The rural population faces severe problems with poverty and malnutrition, which is surprising as the region is home to some of the most nutritious crops in the world. New evidence from areas with high rates of urbanisation show that the urban poor are plagued with new health problems, which are mainly due to consumption habits and lack of dietary diversity. In Bolivia, the poorest country in the Andean region, 95 percent of the rural population is considered to be living in poverty.

Life in the Andean mountains is harsh due to extreme climatic conditions, and the region is affected by droughts, flooding, frost, hail and saline soils. The rural poor in these areas are often subject to political marginalisation and ignorance with few options to improve their livelihoods.

The adverse abiotic factors in the Andean region cause everything from minor damage up to total crop loss. Due to extreme temperature fluctuations, low precipitation and seasonal variation, in addition to low soil fertility and salinity, agricultural work is difficult and very susceptible to inadequate handling.

The unforgiving environmental conditions have resulted in the domestication of local plants, which has created a wide range of robust agricultural crops characterised by exceptional environmental adaptation. These crops have been yielding products of high nutritional value for millennia. However, genetic diversity in the Andes is under relentless attack and is being destroyed by desertification, deforestation, erosion and socio-economic threats.

In the pre-Columbian period, a highly specific range of crops that ensured stable productivity and sustainability was cultivated. Today agricultural productivity is generally low in the Andes, which is due to the rapid degradation of crops and natural resources as well as the rapid disappearance of traditional agricultural knowledge.

The traditional Andean crops include seed crops Quinoa (*Chenopodium quinoa*), Cañahua (*Chenopodium pallidicaule*), Amaranth (*Amaranthus spp.*), Tarwi (*Lupinus mutabilis*), and roots and tubers Maca (*Lepidium meyenii*), Yacon (*Smallanthus sonchifolius*), Oca (*Oxalis tuberosa*), Ulluco (*Ullucus tuberosus*) and Izaño (*Tropaeolum tuberosum*). These crops can survive in the adverse biotic and abiotic conditions of the Andean highlands and they represent valuable, under-utilised genetic resources of great potential to solve problems in the Andes. However, they could also be used in other high altitude cropping systems in the tropics. Most Andean crops are of high nutritional value and reasonable yields with low inputs, which makes them very important to small-scale Andean farmers. In addition to their ability to grow at high altitudes under extremely difficult conditions, these crops have a wide range of desirable characteristics: high protein content and quality, high vitamin, micronutrient and starch content and medicinal properties.

Unfortunately the colonisation process marginalised these crops, which are now regarded as low-status by the urban population. Limited research, foreign countries' donation of rice and wheat, and a near-total lack of incorporation of these species into modern production systems and markets, have also made these crops uninteresting for Andean dwellers, resulting in a low-quality diet. For this reason it is of extreme importance to expand the internal markets in order to improve nutritional status of both the rural and the urban populations, and to promote agricultural development in the Andes.

However, some of the crops have had a comeback on the international scene as consumers all over the world have become aware of their individual values. Quinoa is a gluten-free alternative for gluten allergic people (Celiacs), Cañahua



Quinoa field at sunset, Bolivia. Photo: Sven-Erik Jacobsen

is good for young women due to its high iron content, Tarwi is known for its high protein and oil content (hence called the Andean soya), Yacon is a non-glucose sweetener, high yielding and highly nutritious tubers, Ahipa is very digestible and rich in protein with low fat content, and Maca strengthens the immune system and stimulates the libido. International recognition increases the local popularity of the crop thus rescuing them from dying out as well as developing domestic markets. Obviously, an improved status will serve to retain the attractiveness of rural agricultural communities by providing the local population with a stable income.

One of the most important Andean crops is Quinoa (*Chenopodium quinoa Willd*) - a very nutritious seed crop that is extremely resistant to drought, frost, saline soils and other abiotic and biotic factors. In the Bolivian Altiplano, for example, farmers cultivate three or four varieties of this crop, some of which only yield high productivity in good years, and some of which produce a yield even in bad years due to their resistance to frost, pests and other adverse factors. The production of Quinoa could potentially increase in South America as the demand on the national and international markets is on the rise. Organic production and marketing of Quinoa was initiated due to the rising global demand for this crop.

For commercial production Quinoa farmers must meet the markets' needs, which so far have been large, with white seeds that are low in saponins. Adapting to the market often requires intensified production, monoculture of improved varieties, expansion to marginal areas, and organic production. Low saponin levels, however, make Quinoa more susceptible to pest damage. Farmers are therefore encouraged to cultivate certain Quinoa varieties with good market value, while native varieties are lost, potentially increasing the social and ecological vulnerability of rural communities. The more farmers rely on a few varieties of

Quinoa, the higher the likelihood of losing their crops to pests and erratic climatic factors. As production for export markets is likely to increase risks, it raises the question as to whether a choice has to be made between maintaining a diverse production system for food security at home and an organic Quinoa production for the external market, and what should be the target of the development efforts. The role of Quinoa for either production for sale or subsistence is fundamentally different, so development efforts should not be limited to only deal with increases in production and productivity, but also with increasing profitability and competitiveness in the sector.

The general objective of Quinoa production is to improve its manufacturing and marketing systems, in order to increase food security, create income and preserve the environment in the Andean region. The specific objective is to develop technology for organic production, which would improve control with the adverse biotic and abiotic factors for generating sustainability in the agro-ecological systems of the Andean region; and to study and analyse actual and potential markets for organic and conventional Quinoa on the national and international markets.

The external market for highly nutritious products based on Andean crops is on the increase, which could also improve the livelihood of rural farmers, eliminate under-nourishment and generate positive developments on the domestic market. New application areas of Andean seed, root and tuber crops like Quinoa have boosted their demand, which has created new economic opportunities in the poorest rural areas.

But the demands of quality and quantity imposed by the market require careful consideration from the start, and it is no longer optimal to grow a crop for home consumption and sell the excess on the market. Farmers need to consider the market requirements for type, quality and timing.

Improving agricultural sustainability by promoting existing biodiversity can be achieved through disseminating and adapting specialised knowledge in the fields of crop diversity, breeding, integrated crop management, nutritional studies, and improved status of traditional crops and products. However, in order to create the necessary economic incentives and raise consumer awareness of the new crops, they need a good marketing strategy. If successfully accomplished, the results will be improved food security and decreased vulnerability, as well as nutritionally sound and varied diets, which are items of highest priority to the proposed project.

In order to energise poverty alleviation efforts in developing countries' agricultural sector, pro-poor technologies have to be complemented and focus on the demands of private, small-scale producers. Those could be to engage farmers in generating technological innovations, disseminating information, foster strategic alliances, ceasing government give-away programmes, and promoting opportunities to invest in innovation.

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Different Perceptions of Desertification in the Context of the Argentinean Patagonia

Mónica Bendini



Girls herding with dogs in Neuquen, Patagonia, Argentina. Photo: Jan L. Flora

Desertification has turned recently into a topic of debate within the rural development policy discussion in Argentinean North Patagonia.

Agriculture in the Andes mountains and Patagonia plateau is characterised by the coexistence of two types of livestock producers: *estancieros* (large ranchers) with large number of livestock and *crianceros* (small herders) - with small number of livestock. Crianceros are at the centre of the debate on desertification in terms of the degree to which their agricultural practices are sustainable and how to include them in the territorial development policies.

In the last decades, the prevalent institutional image regarding the cause of environmental decay and desertification have been attributed to the practices of the *crianceros*. In order to determine how desertification can best be addressed, it is helpful to analyse the different perceptions of environmental degradation of *estancieros* and *crianceros*¹.

¹ Small-scale producers, whose primary activity is sheep and goat raising; livestock practices, communal grazing, and social work organisation has been done by uses and practices related to traditional social loops. Transhumant "*crianceros*" are the prevalent group; they mobilise their animals from the arid and low fields of "*monte*" and steppe ("*invernada*") to high valleys in the Andes ("*veranadas*").

The producer relates to natural resources through a variety of uses, which are conditioned by environment, cultural group and social relationships in production.

The criancero relates with natural resources within a specific context and framework, including their way of thinking, the different tracks they take when herding, decisions about stocking rate, and resource management. The crianceros do not recognise the meaning of desertification; they do not refer to the environment where they do their agricultural activities as desert, nor the erosion and degradation process as desertification. They recognise that a problem exists, but they attribute it to natural conditions - loss of field productivity capacity or less grass availability.

On the other hand, the estancieros, locally recognised as ranchers, explicitly refer to the desertification process as an issue that does not concern them, as a problem associated with crianceros activities due to high number of animals and stocking rate leading to overgrazing, as well as the predominance of goats in poor peasants' herds. Both crianceros and estancieros recognise the desertification problem within the context of their own global production orientation. Among crianceros, there is no evidence of a uniform perception about what causes desertification. Most crianceros link it to prolonged drought cycles, and the rest of them to overgrazing and/or continuous grazing, a similar diagnosis as that of the estancieros. Some expressions of these perceptions are given below.

"The issue is that fields have not been put to rest."

"There were many drought periods, there is no water, and for this reason... water is scarce. The "veranada" fields lose their productivity due to those dry years. They have been deteriorating year after year, and this is the reason for the field dryness... In the past, forage was never scarce... Yes, fields are recoverable, if it rains on us, the field recovers a lot."

The crianceros, with their pessimistic vision of nature's actions, identify climatic variation as the cause of impoverishment of fields as well as their recovery, as part of recurrent cycles. The estancieros believe that the desertification process is due to overgrazing and firewood extraction. While the crianceros raise sheep and goats, the estancieros have a mixed herd composed by cattle, sheep and goat, where cattle are the prevalent species. The estancieros believe that "The cause of desertification is goat raising and overgrazing... And firewood extraction is another factor".

The estancieros, in spite of their low opinion of goats and their impact on the landscape, have goat flocks similar in size to the crianceros flocks, but, on average, goats are only 10 percent of estancieros herds. They see desertification as the result of ignoring the grazing capacity of the fields



Transhumance, Patagonia, Argentina. Photo: Jan L. Flora

and stocking rate, but they point out that this is the main problem in adjacent indigenous reservations where the poorest crianceros are the prevalent population. Firewood extraction is important in the mountain zone. It is harvested and sold in the urban centres. However, with the expansion of the distribution network in urban areas, demand has declined. Firewood consumption is constrained to rural population, rural service centres, and popular sectors in urban areas.

The estancieros perceive soil conservation practices as ways to improve field productive capacity to achieve more efficiency and profitability. As part of their business strategy, they compare their animal production to animal production in other regions, such as the humid plains located in the central part of Argentina.

The crianceros perceive soil conservation practices as co-existence strategies with social reproduction. Crianceros that have larger herds adopt techniques that allow them to remain at or above the capitalisation threshold; peasant crianceros that do not have surplus are constrained to adopt techniques for control and prevention of desertification in order to keep active as producers.

There are no conservation technologies in Patagonia appropriate for crianceros. The crianceros knowledge about land and pasture deterioration is partial and heterogeneous. They understand the elements involved, but lack techniques to remedy the situation. The crianceros are interested in adopting appropriate technology for conservation and complementary production activities, though they always demand technical assistance and financial support to help them change their production practices.

The estancieros have more precise and complete knowledge of appropriate techniques for the control and prevention of desertification, as a result of greater access to sources of public as well as private technical assistance. But there is also a need to increase transfer of knowledge to

estancieros and their labourers (“peones”, “capataces”, “puesteros”) who actually implement them on the land and with the animals.

In summary, crianceros and estancieros, in general, declare their willingness to adopt new technology, as long as it relates to the production activity that each social type has developed as a strategy. As in all adoption of innovation, they demand that the results are validated by experimentation under their own conditions.

In temporal terms, the crianceros are not willing to adopt activities or techniques that are longer than a single production cycle, which is the timeframe that defines their survival strategy and reproduction logic.

The estancieros, due to their own rationality, have a longer timeframe which allows them to implement technology innovations with non-immediate results. The soils and native pastures of the estancieros are of higher initial quality than the fields to which the crianceros have access. The estancieros fields are primarily located in the piedmont area of the eastern Andes, an area associated with water availability. They seek technologies related to distribution and use of water. In a different way, crianceros, settled on the mountain plateau know that water is very scarce in these areas, so the techniques that they need to adopt requires higher investments.

In the context of globalisation and its effects on rural societies, and increasing consideration of ethno-cultural variables as explanation factors of locally specificities, we do not belittle the relevance of these elements, which significantly mediate in the relationship between humans and nature. Nevertheless, in this case, it is evident that the differential access to resources - land and capital - significantly conditions the perceptions and orientations of individuals and collective actors. The testimonies presented here manifest the differential logics of production and social reproduction among estancieros and crianceros in the high lands and Patagonian plateau. The current debate could further marginalise transhumant crianceros, since they are blamed for pasture deterioration, an attribution that could legitimise their permanent exclusion from the resource.

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South Okanagan: The Threatened Desert

Richard Cannings and Sydney Cannings



Osoyoos Lake and desert habitat, South Okanagan Valley, British Columbia, Canada. Photo: Robert A. Cannings

Canada’s Okanagan Valley is home to many rare and endangered species and more than half of the bird species in Canada. It is also an important migration corridor for wildlife. In the Okanagan’s southern-most reaches are desert grasslands, virtually unique in the world. These desert grasslands lie on the doorsteps of coniferous forest, wetlands, prairie grasslands, and cliff ecosystems. People are also drawn to this part of Canada because of its mild winters, hot and dry summers, beautiful lakes, mountains and prolific wine and fruit industries. However, growth is threatening the fragile desert grasslands that make this part of Canada so unique.

Desert grasslands and mountains

Most people may not associate desert grasslands with the Canadian province of British Columbia, which is known for its vast forests and towering mountains. But grasslands are born of mountains, forming in the rainshadow of high ranges. Behind

the glaciers of the Coast Mountains and Cascade Range, fingers of the Columbia Basin work their way north into southern British Columbia, benchlands of bunchgrass and sagebrush amid the dark green conifers. To the history buff, this is the land of stagecoaches and cattle drives; to the naturalist, it means meadowlarks, mariposa lilies and rattlesnakes.

From certain vantage points, these grasslands appear to stretch forever, but they are in fact quite restricted in British Columbia. Hugging the lowlands on the east side of the Island, Coast, Cascade, and Purcell ranges, they are sinuous golden islands in a sea of green forests; smaller outlying archipelagos dot the adjacent dry plateaus.

Although they are not extensive, grasslands in British Columbia are surprisingly diverse. The diversity of grassland plant communities is paralleled by a diversity of animals, both vertebrate and invertebrate. The open nature of grassy meadows and their abundant and diverse forbs offer homes to many species of butterflies, wasps, bees and other sun-loving insects.

Rare and endangered species

The arid grassland at the south end of the Okanagan and Similkameen Valleys is a special place. About a third of British Columbia's rare or endangered plants and animals make their home there. Birders come from all over the continent to see the special birds of the grasslands and the dry pine forests. And the invertebrates are unusual, too - a recent collection of wasps on the sand benches north of Osoyoos netted thirty-five species, thirteen of which were previously unknown to Canada.

Two hundred years ago the grasslands in the southern interior of British Columbia were home to badgers, burrowing owls, white-tailed jackrabbits, and sharp-tailed grouse. Because there were few large herbivores, the grasslands were untrampled and the grass grew tall. The spaces between the grass bunches were covered in a diverse and healthy crust of lichens, fungi, mosses, liverworts and algae.

It is remarkably difficult to find a grassland resembling the one described above today. Grazing practices have improved over the past fifty years, but even where cattle grazing is now light, the crust is broken and dozens of species of introduced grasses and weeds have taken its place. All types of grassland have disappeared under the bulldozer or plough, becoming alfalfa fields, vineyards, golf courses, housing developments and theme parks.

How are the grassland animals doing? Badgers, the subjects of widespread persecution earlier in the century, are on the Endangered Species list. Burrowing owls have disappeared, in part because of the decline of badgers. Great efforts are being made to reintroduce these birds, but success is by no means assured. Long-billed curlews are hanging on but have declined considerably - they at least prefer the short grass left after grazing. White-tailed

jackrabbits and sage grouse, both lovers of big expanses of grass and sagebrush, are gone. sharp-tailed grouse, once so abundant, have disappeared from the Okanagan.

Ranching and grazing

Grazing by cattle changes grasslands, especially if too many are put out onto the range or if they are allowed to graze for too long in a particular area. The impact of grazing is most obvious around ponds and along creeks, where cattle congregate to find water and shade.

Bluebunch wheatgrass and fescues are preferred foods of cattle and so generally decline with grazing; other, less palatable or weedy species increase or invade at their expense. In the hot, dry lower grasslands, big sagebrush, brittle cactus, low pussytoes, needle-and-thread grass, and cheatgrass become dominant after too much grazing has taken place. In the middle grasslands, sandberg's bluegrass and needle-and-thread grass increase and, if disturbance is more extreme, cheatgrass and knapweeds take over. In the upper grasslands, pasture sage, junegrass, kentucky bluegrass, silky lupine, timber milk-vetch and yarrow increase, and cheatgrass, cut-leaved daisy and salsify invade.

Animals that inhabit the grasslands also increase or decrease with grazing. Upland sandpipers, sharp-tailed grouse and sprague's pipits prefer the cover of ungrazed grasslands but long-billed curlews and horned larks prefer the more open nature of grazed areas. Grazed grasslands have a less diversity of insects than ungrazed ones, but interestingly enough, at least some species of grasshoppers are most common in heavily grazed areas. Not only do cattle eat vegetation, they trample it. The cryptogamic crust is most sensitive to trampling, and the destruction of this crust can have serious consequences for grassland communities.

How long does it take grassland to recover from heavy grazing? To answer this question, cattle were excluded from



Mountain grasslands of the South Okanagan Valley, British Columbia, Canada. Photo: Robert A. Cannings

a series of fenced plots in British Columbia grasslands beginning in the 1930s. The badly overgrazed sites changed little in the first ten years, but after that the natural community slowly began to re-establish itself. After twenty-five years average herbage production inside ponderosa pine/bluebunch wheatgrass exclosures was 124 percent greater than production on the rangeland outside. In general, it took twenty to forty years for the sites to return to excellent range condition.

Frustrated by this slow recovery time, some range managers have taken the drastic measure of ploughing and reseeding to crested wheatgrass. Although this practice provides a quick crop of grass, it utterly destroys the natural grassland community by replacing it with an alien monoculture. The effects of this practice on grassland biological diversity are detrimental and long-lasting.

Knapweed

After all the ploughing, bulldozing and overgrazing, the dry grasslands of British Columbia have been devastated by another agent: knapweed. A close relative of the artichoke, knapweed produces masses of prickly seed heads, making the plant unpalatable to cattle. Two species of knapweed were accidentally introduced from eastern Europe or western Asia around the turn of the century and have invaded most of the interior grasslands. As well as being unpalatable to cattle, they are also drought resistant and produce allelopathic substances - chemicals that prevent other plants from growing near them. Attempts at biological control have centred on two species of fly whose larvae eat only knapweed seeds and a beetle whose larvae devour the long taproots.

While we often lament the growth of deserts, particularly when they threaten valuable agricultural lands, the desert grasslands of Canada's Okanagan provide vital habitat for many rare and endangered species, and are themselves rare among the world's collection of natural ecosystems. It remains to be seen whether this beautiful landscape will survive the pressures of urban growth and agricultural development.

The body of this article is excerpted from *British Columbia: A Natural History* by Richard Cannings and Sydney Cannings. Greystone Books 1996. ISBN: 1553650522.

Thanks to consulting biologist Richard Cannings of Naramata, British Columbia, Canada for permitting us to share his work - and to Robert Cannings of Victoria, British Columbia for permitting us to share his photographs.

Mera Peak – It's Worth Four Visits

Billi Bierling



Billi (right) with her clients Julie and Aidan from Australia on top of Mera Peak

When I was asked to be the editor of the Mountain Forum Bulletin in January 2005, I was very interested in the matter because as a German national I am, naturally, very much into sustainable development. And, the other aspect that really attracted me was that it was all about mountains!

I started mountaineering in Nepal in 1998, when I embarked on a long trekking and climbing trip that led me through many beautiful valleys in the Everest region. During that trip I tackled my first 6,000 m mountain, which was Mera Peak. At 6,461 m, Mera Peak is the tallest trekking peak in Nepal and even though its technical grade is easy, it is still a long and hard slog to the top.

When I first went to Mera, I found it very hard and cold and I had no intention of ever going back there again. However, eight years down the line, I have scaled the top of that mushroom-shaped mountain four times. Twice I went with friends and twice I worked as a mountain leader. Of course, climbing Mera Peak is nothing compared to getting to the top of Mount Everest; however, for more humble mountaineers like myself it is an amazing experience every time.

Desertification: A Growing Problem - Interview with Prof. Joachim Borner

Billi Bierling



Jharkot, Mustang, Nepal. Photo: Billi Bierling

The world's great deserts were formed by natural processes interacting over long periods, and during most of these times deserts have grown and shrunk independent of human activities. However, over the past few decades the degradation of formerly productive land has become an increasing problem involving multiple causes, which proceed at varying rates in different climates.

While desertification has received tremendous publicity by the political and news media in the past few years, there are still many things that we do not know about the degradation of productive lands and the expansion of deserts.

If we are to stop and reverse the degradation of arid and semiarid lands, we must understand how and why the rates of climate change, population growth and food production adversely affect these environments. The most effective intervention can come only from the wise use of the best earth-science information available.

Billi Bierling spoke to Professor Joachim Borner, the director of the Collegium for Management and Design of Sustainable Development (KMG) in Germany.

Prof. Borner has been involved in combating desertification for the past five years and one of the institute's main projects is in Río Hurtado, an area bordering the Atacama Desert in Chile.

Mountain Forum (MF): Desertification is still an unknown term to many people. Could you explain the main causes of the degradation of land?

Prof. Joachim Borner (JB): Desertification is partly caused by climatic changes and prevails in certain microclimates. In Río Hurtado in Chile, where we run our project, the main problem of desertification is actually man-made. Overgrazing and the overuse of slopes have become big problems, but people need to make money, which means they will continue having too many animals graze on land that is incapable of reproduction.

Another cause of desertification is overwatering, which erodes a lot of soil and even though people know the concept of drop irrigation, it is hardly ever used.

El Niño is another cause of desertification and even though it brings a lot of rain, it is often too strong, which leads to the erosion of land.

Our project in Río Hurtado in Chile deals with these problems and we have been trying to decelerate desertification there for the last few years.

MF: Have you seen any success since you have been working there?

JB: It is very difficult to see success at such an early stage but what we can see is that people are more aware of the problem. We train young people for jobs that are relevant to a desert region, and we show them how to use regenerative energies. Our strategy is that apart from teaching people how to install solar panels we also want them to tell others about it and get them to use alternative energies.

Another important aspect is self-monitoring. In our project, for example, we had women build solar kitchens, which they are using. However, they check each other and if they find out that someone does not use it properly they have to pass it on to someone else. Some people from our partner organisation "El Canelo" monitor the process but most of the checking is done by the villagers themselves.

MF: How long does it actually take to see success?

JB: It can actually take up to 15 years, however, I am not saying that it is impossible to see changes before that. We can, for example, see economic success in the region as we have created a tourism network there. The local tour operators invite groups and even though they want to take them to the most special places in the country, they are aware of sensitive zones, which they circumvent on their guided tours.

MF: How do you link ecology and economy?

JB: Economic success takes away the pressure to expand agricultural areas. Up until six or seven years ago agriculture was still expanding and biodiversity was tampered with. Now this has stopped as people start earning their living with tourism.

Interview

MF: Africa is obviously the most affected country in the world. Which other continents are badly hit by desertification and what do the respective governments do about it?

JB: Of course, desertification does not only exist in Africa. Asia is also badly affected by the problem, with China and Mongolia being worse off. Governments only started doing something about it when they noticed that desertification prompted a lack of food. In rich countries such as Chile and China, recognition of desertification is still a problem, which is due to the fact that these countries are so big that it is feasible to internally move people to more fertile areas.

MF: Does desertification exist in Europe?

JB: It marginally exists in Spain, Italy and Greece, however, it is seen as more of a local problem. In Spain decreasing rainfall, overgrazing and mono-cultural agriculture have led to desertification. In tourist regions water has become a problem as hotels and tourist places, which use a tremendous amount of water, have priority when it comes to water consumption. This has become a difficulty for farmers as they are not getting enough water for irrigating their fields, which again has led to desertification.

MF: What can consumers do to support the fight against desertification?

JB: People should think before they buy fruit and vegetables. It is better to buy things that are in season and not to buy, let's say strawberries at Christmas time in Europe. The problem is that by trying to produce more unseasonable vegetables traditional farming is being pushed away and, apart from that, more water is needed to meet this demand.

In the 60s, when Egypt suffered a famine, the country received wheat from the United States, which was great as it helped a lot of people to survive. However, within two years the Egyptians had got used to eating wheat and as they do not grow the crop themselves the country is now importing wheat for millions of dollars every year. The consequence is that Egypt has to find other sources of income to pay for this demand.

Consumers should also try to avoid long-haul flights as any climate change accelerates the desertification process. Climatic scientists are very worried about this. They say it would be disastrous if the monsoon, which prevails on the Asian continent, ceased to exist or slowed down one day. Similarly, Western Europe would suffer greatly if the Gulf Stream, which warms the European continent, would be affected.

MF: Has the desertification process accelerated in the past few years?

JB: Definitely! It is not coincidental that we have had the hottest summers in the past eight years. Desertification



Eastern desert, Egypt. Photo: Usama Ghazaly

has accelerated in the last 50 years, which becomes obvious when we look at the expansion of deserts. Every year new deserts develop all over the world and the accumulated size is as big as Holland. This is mainly due to climatic change and overgrazing.

MF: How big of a problem is desertification?

JB: Well, the biggest problem due to climatic change is water, which has and still is triggering wars all over the world. The second biggest problem is the change of farming techniques. With climatic change, farmers are no longer able to apply their traditional farming techniques, which is a problem if they are not taught how to cope with the change. The third biggest problem is desertification, which is responsible for food scarcity in many countries. Every year about 40 to 50 million environmental refugees are looking for new homes as they lack the essentials for agriculture, namely good soil, in their region.

MF: Are people actually aware of the problems of desertification?

JB: It depends where they live. In Europe, for example, people are less aware of the problem as it does not really exist there.

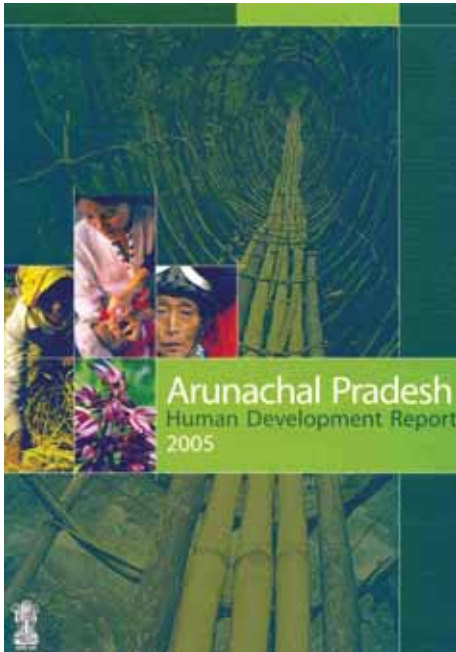
MF: Which global campaigns are most effective?

JB: I think strategies like "bottom-up" or "participation" are very important. In our campaign to combat desertification the most important part are the people. We cannot combat the problem and leave the locals in poverty. Empowerment, emancipation and combating poverty are important and are the only way to change agricultural techniques. Projects by the government are useless without the help of the people; however, this has now been realised, which is a big step into the right direction.

Dr. Joachim Borner has been working with KMG since its beginning in 1998. KMG is a research and educational institute implementing design processes for sustainable development.

Arunachal Pradesh: Human Development Report 2005

Vimal Khawas



The first Arunachal Pradesh Human Development Report (HDR) 2005 was launched on 21 April 2006, in Itanagar, Arunachal Pradesh, by the Chief Minister Mr. Gegong Apang. This publication is a part of a series of state level HDRs funded by the UNDP in India. Other Indian Himalayan states that have already produced their HDRs include Himachal Pradesh and Sikkim. Two other north eastern hill states of India - Assam and Nagaland have also produced their HDRs. The idea of HDR has its base in the seminal work of the Pakistani economist, the late Mahbub-Ul Haq, who in the early 1990s developed the concept of Composite Human Development Index that can measure and compare human well-being. It was a leap from the earlier measure of development which was calculated using per capita GDP.

The report that spreads across 310 pages talks at length about various facets of development in the state. Each section of the report has suggestions that the government is expected to follow to put the state on the path of sustainable development. While the report says the state has made commendable levels of progress in education and health sectors, a lot still needs to be done. Gender issues as

well as the urban-rural gap in literacy and low level of health attainments are highlighted as serious factors that the state needs to address.

The economy of the state is primarily agriculture-oriented and informal in nature. Over the years about 70 percent of the state economy is sustained by Central Government funds. However, Government expenditure does not appear to have transformed into productive social capital, according to the report. Arunachal's per capita income has increased dramatically but the primary sector is failing, while the secondary sector is almost non-existent. The tertiary sector in the State has grown but in a place like Arunachal this only amounts to government expenditure.

The report has also dwelt on several thematic issues - including Women, Deprivation and Equality, Infrastructure Development and Biodiversity Conservation - that influence overall human development. Fundamental and strong bonds between the people and the environment have been severely tested in the last few decades due to development ventures. The report notes that there is a possibility that this relationship slide down further in the immediate future. It highlights the need to work out a sustainable strategy, which allows Arunachal to achieve high levels of human development, good education and proper access to medical care, adequate income generation, less gender and urban-rural disparity, and proper infrastructure facilities. This has to be achieved without negatively impacting the environment and the rich biodiversity of the state.

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Lahaul Spiti, Himachal Pradesh, India. Photo: Anupam Anand

Mountain Quote

"Nobody trips over mountains. It is the small pebble that causes you to stumble. Pass all the pebbles in your path and you will find you have crossed the mountain."

- Author Unknown

African Mountain Forum



Acacia tree, eastern desert, Egypt. Photo: Usama Ghazaly

African Mountain Forum elects a Board Member

The African Mountain Forum (AMF) held elections to elect a board member to represent Africa region on the Mountain Forum Board. This event happened soon after AMF was revived, having spent many years with limited activities. The activities of AMF had come to a standstill mainly due to funding problems. However, the Global Mountain Programme of CGIAR provided some funding to revive some of the core activities of the node and this has resulted into some positive gains.

The elections were carried out electronically using election guidelines set by the Mountain Forum Secretariat. The Mountain Forum Board is the highest policy making body of the Forum and is constituted by the following categories of members:

- ▶ One representative from each of the six organisations hosting regional nodes.
- ▶ One elected representative resident in Africa, Asia-Pacific and Latin America.
- ▶ Representatives of major donor agencies as non-voting members.

The African Mountain Forum election was a tight race where two candidates contested and 34% of the members cast their votes. The Mountain Forum election guidelines require at least 10% of the members to vote, for an election to be considered legitimate. Members from the following countries participated in the elections: Cameroon, Egypt, Ethiopia, Ghana, Kenya, Lesotho, Malawi, Morocco, South Africa, Tanzania, Uganda and Zambia (see map below)

The whole process, from nominations to voting to announcement of the winner, was

carried out electronically using the e-election tools developed by the Mountain Forum Secretariat. After final tallying and counting of votes, one of the candidates - Mr. Moses Duku from Ghana, emerged as the final winner with 51.5% of the votes. He will be serving for a period of 3 years after which fresh elections will be carried out.

Moses Duku is a Research Scientist at the Council for Scientific and Industrial Research in Ghana and at the same time the Focal Person for the Mountain Partnership in Ghana. He possesses an MSc in Wood Science and Technology and a BSc in Forestry. He has also trained in Patent Information at the EPO International Academy in Austria, Intellectual Property at the World Intellectual Property Organization, Switzerland and Clean Technologies at UNIDO in the Czech Republic. He has been a long-time active member of AMF and has participated in most of the e-consultations that were organised by the Mountain Forum Secretariat.



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Asia-Pacific Mountain Network



Tibet. Photo: A. Mihich, FAO

Digital Photo Contest – World Environment Day 2006

The Asia-Pacific Mountain Network (APMN) collaborated with the International Centre for Integrated Mountain Development (ICIMOD) and the Mountain Forum Secretariat to organise a Digital Photo Contest on the theme of “Deserts and Desertification in High Altitude Areas” to mark the World Environment Day 2006, as well as to celebrate Mountain Forum’s 10th Anniversary.

Some 132 entries from 37 participants were received. Most depicted the harsh realities of mountain deserts and rangelands, as well as life in high altitude arid and semi-arid lands of Afghanistan, Nepal, India, Pakistan, China, Japan, Kenya, Egypt, Chile, Venezuela, Colombia, Bolivia, Argentina, and USA.

Clifford Nietvelt, who is a professional photographer in his own right (view his photography gallery at: <http://www.cliffnietvelt.com>), and Dr. Zbig Mikolajuk, Programme Manager of the Information and Knowledge Management Programme of ICIMOD painstakingly graded each and every entry based on composition, content, originality, as well as effectiveness in conveying the theme of the photo contest.

The results of the contest were announced only on June 17, to mark the ‘World Day to Combat Desertification’. Dr. Jutta U. Kern’s entry “Harvesting the High Desert” taken in Horque, Tibet/China in 2001 won the “Mountain Forum Global Prize”. Dr. Kern, native to Austria, is a resident of Washington DC, USA and is a sociologist by profession. Similarly, Karl Schuler’s entry “Boon and Bane of Water” taken in the Bagrot valley, Karakorum range, Northern Areas, Pakistan, in 2004, won the “ICIMOD Himalayan Prize”. Mr. Schuler is Natural Resources Management Advisor to the World Conservation Union (IUCN) in Pakistan, and has his own photographic homepage at: <http://www.photo.net/photos/karlschuler>. Special mentions for the contest were conferred on Thomas Reineke’s entry “Donkey carrying fuel and fodder harvested in the mountain” taken in Bamiyan, Afghanistan in 2005; on Anupam Anand’s entry “Whither Pasture?” taken in Kargil, Jammu & Kashmir, India in 2006; and on Shuchita Sharma’s entry “Near Fotula” taken in Ladakh, India.

Details of the photo contest are available at:

<http://www.mtnforum.org/apmn/wed2006-dpc/index.php>

E-consultation “Mountain to Mountain Cooperation: Sustainable use of biodiversity, including genetic resources, in the Himal-Andes”

As the Asia-Pacific node of Mountain Forum, Asia-Pacific Mountain Network invited member of the Hindu Kush Himalaya (HKH) initiative of the Mountain Partnership to participate in the e-consultation on “Mountain to Mountain Cooperation: Sustainable use of biodiversity, including genetic resources, in the Himal-Andes”, held over June 12-30, 2006. Details of this e-consultation are available at: <http://www.mtnforum.org/rs/ec/ha.cfm>

APMN website revamped

APMN has revamped and updated its website to make it more accessible, dynamic and user-friendly. The new website enriches itself with the components such as dynamic news section, poll section, searching facility, archive section for news of different categories like Natural Resource Management/Biodiversity, Conflicts/Hazards, Culture/Equity and others. We are presently working on harmonising the design of the site to that of Mountain Forum (MF) to give it a more consistent look. Website: <http://www.mtnforum.org/apmn>

New APMN logo

The Asia-Pacific Mountain Network (APMN) now has a new logo. The Mountain Forum logo has been adapted for use as the APMN logo. The new logo will visually identify APMN as the Asia-Pacific node of Mountain Forum. This should go a long way in creating a visual identity for APMN that is in keeping with its partnership with Mountain Forum as well as with the other regional nodes of Mountain Forum.

New staff at the Asia-Pacific Mountain Network office

Mr. Udayan Mishra joined APMN on May 1, 2006. He will be the Acting Node Manager during the absence of Ms. Sugam Nepal from August 1, 2006. He holds a Bachelor’s degree in Information Technology. He is interested in sustainable mountain development and knowledge management.



Band-i-Amir Lake, Bamyan Province, Afghanistan. Photo: Tae Sung Hwang

At APMN Udayan coordinated with the Mountain Forum Secretariat to develop the Online Photo Gallery to showcase the Digital Photo Contest entries. Please visit: <http://www.mtnforum.org/apmn/wed2006-dpc/index.php>. Udayan is moderating two discussion lists - mf-asiapacific and mf-centralasia - as well as managing the website of APMN. He supported the e-consultation on "Mountain to Mountain Cooperation: Sustainable Use of biodiversity, including genetic resources, in the Himal-Andes" held over June 12-30 2006.

He is also in the Information Knowledge Management team at ICIMOD.

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InfoAndina - Latin American Mountain Forum

InfoAndina celebrates the National Potato Day in CIP - Peru

On 30 May 2006 the International Potato Center (CIP) in Lima - Peru celebrated the National Potato Day under the motto "Peruvian potato: rich and nourishing, we consume what is ours". This celebration day intended to promote and disseminate the exceptional attributes of this noble tuber. With an annual production close to 311 million tonnes the potato is currently the fourth most important food crop in the world. Nowadays developing countries contribute half the global potato production; however, 40 years ago this was only 11 percent. Peru has bequeathed to the world one of the most indispensable food items in the diet of the more various cultures.

For this reason, the United Nations has declared 2008 the "International Year of the Potato", in Resolution 4/2005 of the Conference of the Food and Agriculture Organization of the United Nations, adopted on 25 November 2005. This major event will present many opportunities to raise the profile of the potato among civil society as an important world food staple as well as a contributor to the Millennium Development Goals (MDGs).

In this context, InfoAndina participated actively by preparing and presenting the following CDs:

- ▶ **Conservation Agriculture: Improving the quality of life of Andean inhabitants.** To counteract the problems of soil degradation and poverty, the adoption of a new preventive technology known as Conservation Agriculture is promoted. Direct seeding, minimum tillage, green manures and the renewal of pastures are part of the technology.
- ▶ **Challenge Program for Water and Food (CPWF).** InfoAndina presented the Andean basins of the project and the activities that CONDESAN carries out within the framework of the CPWF.

During those days the InfoAndina team also promoted its activities regarding generating information and learning between global, regional, and local projects, which means



Ruth Hidalgo with InfoAndina material. Photo: InfoAndina

working together with different actors; furthermore it supported the process of reflection among the experiences of the Andean region, contribution to political incidence work, and the innovative search of communication and dissemination of information.

In the press: National Potato Day

<http://www.cipotato.org/pressroom/docs/noticiero24hrs.wmv>

InfoAndina: Promoting knowledge management in the Andes: A new approach

In 1995, InfoAndina was created as the communication and information dissemination unit of the Consortium for the Sustainable Development of the Andean Eco-region (CONDESAN). In 1996, it started to operate as the Latin American Node of Mountain Forum informing the Andean rural users through different information services. InfoAndina has also been serving as a fundamental support for the work of the Mountain Partnership, especially for the Andean Initiative.

Even though InfoAndina specialises in information and communication, it has always been more of a platform of support rather than a space for information management. With the arrival of Miguel Saravia, the new project leader, the team concentrated on preparing its strategy for 2006 - 2010, working on outcome indicators and clear mechanisms of monitoring. This new strategy aligns InfoAndina with the information management role in areas that affect the sustainable development of the Andes.

The analysis has shown that InfoAndina has become a platform that facilitates exchange of information in the Andean region through activities of synthesis and integration. Based on results, knowledge, networks and capabilities constructed by its members, it also adds value to the ecological development of the ecoregion.

InfoAndina aspires to become the principal reference point of information on sustainable development in the Andean



CONDESAN-InfoAndina and Andean Watershed Project team. Photo: InfoAndina

Ecoregion; especially in the fields of water resource management and agrarian system innovations. To meet this goal, five principles - creativity, pro-activity, working partnerships, value-addition, and cost-effectiveness - as well as five strategic work lines have been established:

- ▶ **InfoAndina website:** Information on sustainable development in the Andean Ecoregion
- ▶ **Generating knowledge:** Generating knowledge in Latin America through electronic bulletin board systems, such as InfoNotas, preparing electronic thematic documents (InfoBiblios or InfoEspeciales), electronic forums, and publications on lessons learnt and information networks.
- ▶ **Policies dialogue:** Opportunity for dialogue regarding public policies related to sustainable development in the Andean Ecoregion.
- ▶ **Latin American node of Mountain Forum.**
- ▶ **InfoAndina:** Promoting the use of ICTs for sustainable development in the Andes.

The project team is structured as follows:

- ▶ Project Leader - Miguel Saravia
- ▶ Information Officer - Musuq Briceño: Responsible for the management of information and communication services.
- ▶ Webmaster - Ruth Hidalgo: Responsible for design, implementation and maintenance of the Portal InfoAndina, the CONDESAN web and support for the activities related to information and communication services.

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North American Mountain Forum

Project updates

Bow Valley Mountain Forum

The new Bow Valley Mountain Forum community web portal was officially launched on May 26 this year. The new website hosts a community calendar, a bulletin board of community initiatives, a library of local environmental learning materials, a discussion forum and links to local volunteer opportunities, news sources, and trail reports. If the portal proves successful, it could be replicated in similar mountain communities.

Like the North American node of Mountain Forum, the Bow Valley Mountain Forum is hosted by Mountain Culture at The Banff Centre. Mountain Culture gratefully acknowledges the generous support of Parks Canada, through the Banff National Park Ecological Integrity Education Project, and The Calgary Foundation.

Now that the first services on the Bow Valley Mountain Forum are up and running, the North American Mountain Forum has begun working on a second set of services that will be launched in September 2006.

Mountain Research Initiative: American Cordillera Transect

The Mountain Research Initiative (MRI) provides international leadership and coordination for global change research in mountain areas. It informs researchers of what other scientists in the global change community are doing, consults with these researchers to prioritise research questions, and influences budget decisions to ensure that adequate resources are directed at the most pressing research questions.

One of the most promising of MRI's projects is the American Cordillera Transect. When complete, the American Cordillera Transect will include a network of global change research sites linking mountain chains running almost contiguously from Alaska's arctic shores to the Tierra del Fuego at the southern tip of South America. This network of research sites will coordinate their work to fill research gaps and address important global change research questions for the cordillera as a whole.

The American Cordillera Transect is still looking for research sites in Mexico, the United States and Canada. For more information contact the Mountain Research Initiative online at <http://mri.scnatweb.ch> or ask the North American Mountain Forum at namf@mtnforum.org

Center for Appalachian Studies: Encyclopedia of Appalachia

The Encyclopedia of Appalachia was researched and developed by the Center for Appalachian Studies and Services at East Tennessee State University, USA. It is now an authoritative source for information about this American mountain region. In 1,860 pages, the encyclopedia explores topics such as mountain music and food, communities, folklore, handicrafts and coal mining. All thirteen states in the Appalachian region are represented in the volume - Appalachia ranges from Mississippi to New York. The extraordinary tome has also won accolades for challenging and transcending the stereotypes that plague Appalachia. Non-traditional topics such as the aerospace industry, ethnic diversity in the coalfields, education reform and regional identity are all explored in detail.

On the web

Bow Valley Mountain Forum

<http://www.bowvalleymountainforum.org>

The Bow Valley Mountain Forum is the only community web portal that is part of the global Mountain Forum network. This pilot project gathers and broadcasts local events, activities, initiatives, news and information to help local organisations coordinate their activities and gather support, while engaging local residents in important issues. If successful, the portal could be replicated in other mountain communities. The Bow Valley Mountain Forum gratefully acknowledges the support of Parks Canada and The Calgary Foundation.

Columbia Mountain Institute of Applied Ecology

<http://www.cmiae.org>

The Columbia Mountain Institute of Applied Ecology in Revelstoke, British Columbia, Canada hosts a number of mountain events and workshops related to applied ecology each year. The Institute has posts summaries from its workshops online along with presentation materials, agendas and other information when available. The compendium of information and researchers is impressive. Visit the Columbia Mountain Institute online to learn more.

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Mountain Forum Secretariat

Closing of earthquake appeal

In October 2005, for the first time in Mountain Forum's history, we launched an appeal for donations for the victims of the catastrophic earthquake that devastated the mountains of Pakistan and India on 8 October 2005. With the support of Mountain Forum's partner institutions, the International Centre for Integrated Mountain Development (ICIMOD) and The Mountain Institute (TMI), the appeal was sent to all of Mountain Forum discussion lists to solicit support from our membership to purchase tents, and later on heaters (as the need arose) for the earthquake's survivors.

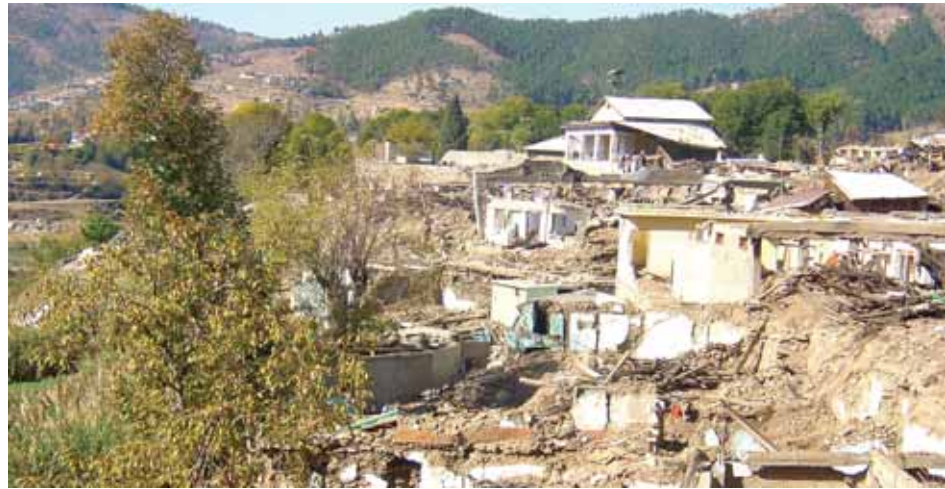
We are very pleased to report that Mountain Forum members' generous contributions amounted to a total amount of USD 39,792.96, enabling the purchase and delivery of 130 winterised tents (each capable of accommodating up to 20 people) and of 1,450 heaters by the end of March 2006, when this appeal came to a close. One of us was privileged to see these tents and heaters in the field and meet some of the families for whom they provided desperately needed relief. I would like to convey their heartfelt, and often tearful thanks to all Mountain Forum members and friends who have so generously contributed to alleviate their suffering. Through these acts, Mountain Forum has shown that it is truly a family that can care for its mountain kin in times of need.

Below you will find a comprehensive list of all those individuals and organisations who have generously donated for this cause.

Our thanks are due also to the wonderful staff at Mountain Forum, TMI, and ICIMOD who made these accomplishments possible. In case you would like to contact us for any other information regarding this appeal, please write to us at earthquakeappeal@mtnforum.org

J. Gabriel Campbell, Chair, Mountain Forum and Director General, ICIMOD, Nepal
Bob Davis, President & CEO, The Mountain Institute, USA

Ana Maria Ponce, Executive Secretary, Mountain Forum Secretariat, Nepal



The aftermath of the earthquake, Pakistan. Photo: J. Gabriel Campbell, ICIMOD

Donors

1. A. and A. Thuermer
2. Alastair Trower
3. Alexander Gammeter
4. Allison Halimeh
5. Amy Baird Middleton
6. Amy Cilimburg
7. Andy Selters
8. Anne Rooney
9. Ayako Ezaki
10. Barbara Brower
11. Betty Greaves
12. Birgit Habermann
13. Brian Honeck
14. Brian MacCall
15. Brian Peniston
16. Brigitta Hogrefe
17. Bruce Mallory
18. Bruno Messerli
19. Canada-Commonwealth Human Ecology Council
20. Caryn Fox
21. Catherine Fissell
22. Charles & Nancy Goodall
23. Chris Bowden
24. Christian Bonte Friedham
25. Christine Hogrefe
26. Christopher and Diji Behr
27. Cleo Kearns
28. Conor Boyd
29. Cynthia Duncan
30. D. Dohn
31. Dagmar Brautleucht
32. Dale Honeck
33. Daniel Fagre
34. David Ackerman
35. David Browning
36. David Grey
37. David Zurick
38. Diane Parker
39. Diane Stanitski

Mountain Forum News

40. Diedrich Hoffman
41. Dolores Connelly
42. Dr. Dieter Schoene
43. Drustvo Mountain Wilderness
44. Ed Bernbaum
45. Eduardo Dias
46. Edward and Dorothy Solecki
47. Elizabeth Knogler
48. Elizabeth Shaffer
49. Elsie Walker
50. Erik Orkin
51. Erika Forcione
52. ETC NI (staff)
53. Florence Haas
54. Francis Turkelboom
55. Frederick Hooven
56. Gabriella Cocco-Greaves
57. Gail V. Young
58. Georgina Peard
59. Giles Hopkins
60. Goose Creek Monthly Meeting of Friends
61. Harini Nagendra
62. Heather MacDonald
63. Helen Berry
64. Helen Every
65. Hilary Budd
66. Hilary Roberts
67. Hogrefe Verlag
68. Ila Craig
69. Irmtraud Hubatschek
70. Jack and Angene Wilson
71. Jahn
72. James and Lynne Shackleton
73. James Casey
74. James Walker
75. Jane Farmer
76. Jane M. Thomas
77. Jane Ross
78. Jason Espie
79. Jean M. Wilson
80. Jeanne W Smith
81. Jeanne Whyte
82. Jeannette Gurung
83. Jennifer, Sarah and Thomas Dolese
84. Jenny Ruducha
85. Jere Stephano
86. Jim Macey
87. Jim Thorsell
88. John Metz and Mary Pember
89. John Whelpton
90. Johns Amosewitsch
91. Joseph Poracsky
92. Josh and Diana Cutler
93. Joshua Berson
94. Judith Marcellini
95. Judith Struminger
96. Jutta Zenner
97. Karen and Michael Folk
98. Karen Hilker
99. Karim Abdel-Motaal and Raya Bohsali
100. Karim Miran-Khan
101. Karin Nichterlein
102. Karsten Wesche
103. Kent Perelman
104. Kevin Tatsugawa
105. Larry Bowman
106. Layton Montgomery
107. Leslie Hamilton
108. Lewis Hopkins
109. Lisa Hickey
110. Lisa Knur
111. Loretta and Elizabeth Cohen
112. Lorraine Harrington
113. Louise Cort
114. Luc Hardy
115. Madhusudan Shrestha
116. Margaret Creel
117. Margaret Young
118. Maria Scurrah
119. Mariana Mendez
120. Marilyn Cochran
121. Martin Price
122. Martine and Ronan Wicks
123. Mary K. Solecki
124. Mary Rosendale
125. Matthis and Dorothea Zimmermann
126. Maureen Cloonan
127. Maureen Fox
128. Michele Mayfield
129. Michele McNabb
130. Michelle Kesti
131. Miles Thompson
132. Milian Johan
133. Nadine McCormick
134. Nazir Rah
135. Necati Dedeoglu
136. Rbay Family
137. Pamela Fogg
138. Patrick Durst
139. Peter O'Farrell
140. Peter Trutmann
141. Philippe Flueck
142. Rebecca Hawkins
143. Richard Kattelman
144. Richard Willis
145. Robert and Candace Buzzard
146. Robert Sinclair
147. Robert and Mary Davis
148. Rodney and Caroline Pelton
149. Roger and Natalya Barry
150. Rory Dutton
151. Rosemary Hopkins
152. Ruiz Carvajal Adrian
153. Scott Jackson
154. Sehl Doghri
155. Shane Harris
156. Sheika Aragundi
157. Sheila Bennell

158. Siobhan Warrington
159. Simone Hald
160. Stephen Cunha
161. Stephen Kanipe
162. Stephen Stanley
163. Steve Powers
164. Students of the Waldorf Schule
165. Students of the Theodor Heuss Gymnasium
166. Susan Sammon
167. Susan Gacek
168. Susan Koehler
169. Suzanne Bott
170. Theodore Wachs
171. Thomas Eastman
172. Thomas Hofer

173. Thomas Riebl
174. Thomas Schaaf
175. Tina Thuermer
176. Todd Bohle and Jennifer Brown
177. Ulrich Kamp
178. Ulrich Lahme
179. V. T. Hilker
180. Valerie Stapleton
181. Veronique Boulard
182. Vicky Shears
183. Victoria Lunt
184. Wendy Lama
185. William Forbes
186. Wolfgang Bayer
187. Yilmaz Cakir

The following is an example of a reaction to Mountain Forum's appeal to support our mountain kin in Pakistan who were hard-hit by the October 2005 South-Asia earthquake in a small German university town (Göttingen). This is the story of a German Mountain Forum member, Dr. Wolfgang Bayer and his friends who raised funds from among their community.

It all started with people walking their dogs in the morning and talking about this and that. After receiving the appeal, Wolfgang mentioned it to his "dog-walking friends", and one of the friends said she would talk to her children and ask what could be done in the school. Teachers and the headmistress were enthusiastic and a local campaign started. A poster was made using photos from northern Pakistan before the earthquake (provided by Macaulay Institute and Insight, a consulting firm for participatory video) and the actual situation after the earthquake (provided by Dr. Farooq Ahmad from ICIMOD). The idea was that each class should aim at collecting money for one tent and therefore the students superimposed a grid of 125 squares on to the photo of one such tent so that progress could be monitored. More than EUR 1,000 was collected this way. Another friend started collecting money for "Tents for Pakistan" in the school where her children went to, and another EUR 1,000 were raised this way. Children and parents argued about which Christmas gift could be converted into tents for Pakistan (whole or part of). An older (dog-walking) friend, promised money for one tent, just before he was admitted to hospital, and ensured that in case he should not return, his heirs would honour the promise. Fortunately, he came back cured soon afterwards, and fulfilled the promise. Another friend who works at a book-store, organised an exhibition of pictures from Pakistan, which made other people donate money. For preparing posters and printing photos, private colour printers were used, and neighbours with designer skills helped with designs of posters and exhibitions.



Wolfgang Bayer (far right) with his dog-walking friends, Germany. Photo: Wolfgang Bayer

During the annual meeting of the German Forum of International Agricultural Research (early in the campaign), Wolfgang drew attention to the tent appeal. The chairman passed around a box, and this way EUR 465 were collected. Moreover, a company managed by the husband of one of the dog-walking friends financed 20 tents - 10 by the Göttingen Branch and 10 by a branch in Switzerland (Berne).

None of the group of friends had prior experience in raising money, and money transfers were initially a problem. Part of the money could be transferred directly to The Mountain Institute by using a private credit card, part of the money was collected in a bank account at a local bank, which transferred money at intervals, and part of the money was collected by a German Charity, which - for legal reasons - had to transfer the money directly to ICIMOD.

All in all, the initiative of the early morning dog-walking group brought in more than EUR 10,000.

On behalf of our less fortunate friends in Pakistan, we wish to extend special thanks to Dr. Bayer, his friends and neighbours, and particularly to the children of Göttingen for their heart-warming generosity and care!

E-conference "Mountain Forum: The next ten years"

Mountain Forum organised a global e-conference "Mountain Forum: The next ten years" (20 March - 2 April, 2006) in Spanish and English to mark its 10th Anniversary by providing its members and partners a unique opportunity to reflect on its past and present and have a say on its future.

Dr. Hugo Li-Pun, Vice Chair of Mountain Forum Board, and Dr. Victor Mares provided a background paper entitled "Mountain Forum: The next ten years" in both Spanish and English to guide this e-conference. Additional documents provided were: Summary of the Mountain Forum Strategic Planning Survey 2004; and Final Report of the Mountain Forum Strategic Planning Workshop 2004, all of which can be downloaded from: <http://www.mtnforum.org/rs/ec/ty/bp.cfm>

Moderated by Mr. Ismail Khan, the elected member representing Asia-Pacific on the Mountain Forum Board, the e-conference covered four broad themes:

- ▶ **Benefits:** What have been the benefits obtained by the Mountain Forum members from different sectors (researchers, extension workers, mountaineers, policy-makers, mountain communities etc.)?
- ▶ **Progress:** What have been the achievements of Mountain Forum towards mountain development in general in its first decade? What progress have the members observed over the past two years, especially in the context of the strategies that need be followed?
- ▶ **Impact:** What has been the impact of Mountain Forum? What indicators should be used to measure impact?
- ▶ **Future:** What are the expectations that Mountain Forum members have from the network? Are there any specific suggestions for the future?

To read the postings and synthesis, please visit: <http://www.mtnforum.org/rs/ec/tenyears.cfm>

Mountain Forum at the Stockholm Challenge Awards 2006

The Stockholm Challenge is a well-established global networking program for Information and Communication Technology (ICT) entrepreneurs for over ten years. It continues to be a leader in demonstrating how information technology can improve living conditions in all parts of the world. One of the main features of the Stockholm Challenge is the ICT prize, the Stockholm Challenge Award, which has attracted over 3000 projects over the years.

This time the Stockholm Challenge Award received the highest number of entries since its start ten years ago. A total of 1,155 projects registered in the six categories that are available in the 2006 award. 151 teams from 53 countries were short listed as finalists, representing some of the best ICT projects from across the world.

Dialogue with the Grassroots, a joint project between the Mountain Forum Secretariat, Asia-Pacific Mountain Network

and Radio Sagarmatha was short listed as a finalist under the Public Administration category. All the finalists, including the Mountain Forum team, were invited to Stockholm in May 2006 to participate in a series of workshops, to showcase their work to each other, and to attend the gala prize ceremony in the Blue Room of the Stockholm City Hall.

Around 150 finalists took active part in the six workshops, one for each category, on the first day of the final event. Parallel to the finalist exhibition there were lively discussions in the workshops on the three topics of Impact Assessment, Funding Strategies and Sustainability.

The outcomes of the workshops were presented in the Challenge Conference on day two of the event. Three panels, with one finalist from each category, presented to the audience the experiences, ideas and suggestions that they brought back from the workshops.

The winners of the Stockholm Challenge Award and the WSIS Challenge Award were announced on May 11, in the evening, in the City Hall in Stockholm. While the Dialogue with the Grassroots project did not win the award, it was a wonderful opportunity for the Mountain Forum representative (Mr. Prashant Sharma, Deputy Executive Secretary, Mountain Forum Secretariat) to spread the word about mountains, development, and a most unique virtual community to a very diverse audience. The event also provided a very rich platform for developing the idea of this pilot project further. The process to upscale this pilot project is now underway and we hope to develop and integrate the use of radio in our work in the months to come.

To read more about the project, please visit http://www.mtnforum.org/apmn/radio_index.htm. Contact the project team at radio@mtnforum.org.



City Hall, Stockholm - Venue of the Stockholm Challenge Award 2006. Photo: Prashant Sharma



Participants at the Mountain Forum annual meetings at Banff, Canada. Photo: Mountain Forum

Mountain Forum Board and Node Managers meetings and 10th Anniversary celebrations, 19-24 May 2006, Banff, Canada

Mountain Forum's annual Board and Node Managers meetings were held at The Banff Centre - hosting institution of North American Mountain Forum - in Banff, Alberta, Canada, this year. Mountain Forum Board Members - including the recently elected Board representative from Africa, Mr. Moses Duku - Node Managers and Secretariat Staff, observers from the Swiss Agency for Development and Cooperation (SDC) and the UN Food and Agriculture Organization (FAO), and representatives from Mountain Forum's partner organisations - UNEP, Mountain Partnership Secretariat, Global Mountain Program (GMP), Mountain Research and Development (MRD), and First Voice International (formerly known as World Space Foundation) - convened during the period 19-24 May 2006 to discuss progress to date and future plans for our network.

On May 22nd, a half-day special program celebrated Mountain Forum's 10th Anniversary. In addition to the above participants, a number of North American Mountain Forum members also attended the event, which opened with a session on Mountain Forum's Contributions to the Mountain Agenda and concluded with a special dinner.

Our sincere thanks go to our colleagues in The Banff Centre for their wonderful hospitality and arrangements which made these events a success.

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CRREDEV: Projects and Initiatives

Mbuti Mboyam Godwill

Introduction

The Centre for Rural Reconstruction and Environment (CRREDEV), Cameroon, is a professional development non-governmental organisation, whose mission is aimed at providing works and services to the disadvantaged and the underprivileged through development at the grassroots. Our programmes include: rural infrastructure development such as feeder roads, small bridges, small warehouses, buildings, rural water supplies and small irrigation projects. In addition, agro-forestry, environmental protection, child rights and gender equality form the main activities we provide. All these programmes are aimed at women, children and the rural poor communities.

Environmental programmes

The protection of the environment is the fundamental programme on which this organisation was founded. CRREDEV members received seed lots from New Forests Project - USA and distributed them to farmers and various communities. These seeds are fast-growing tree seeds such as gliricidia sepium, leucaena, acacia, cajana and much more. We helped these communities to establish nurseries for reforestation, soil fertility replenishments of depleted soils nutrients, erosion control and catchment protection. Owing to demand and the growing need to fight desertification, global warming and carbon dioxide levels, we designed a seed bank project.

The seed bank is aimed at producing fast-growing tree seeds to distribute to farmers and various communities. The project will be implemented in Mbaw-Tikari Plain in Donga/Mantung Division. Amongst the activities to be implemented in the seed bank are training, seed processing and research. The target groups are women, youths, tree farmers, schools and colleges including NGOs, CBOs and environmental departments of universities. Funds are being sought from donors to implement it and we are seizing this opportunity to request for assistance materially and financially from environmental donors. Full details of our strategies and project proposal shall be forwarded to any donor who wants to give assistance. We feel that the environment

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High-altitude farming, Cameroon. Photo: Elizabeth Huston

and mountain areas can be well-protected through the adequate supply of appropriate seeds and training.

Rural water supply

Water supply to rural communities is one of the community development programmes, with which we are very much involved with currently. Our targeted region within Cameroon is the North West Province, more specifically in Donga/Mantung Division. This is a region close to the Cameroon/Nigeria border, and is a disadvantaged area. Despite the fact this region falls within the eco-zone of the equatorial rainforest, it is hilly with many of the villages lacking clean drinking water. The surrounding hills of Mbaw-Tikari Plain in particular - consist of sandy rocks, which do not retain water. They are grasslands with scattered terminalia, which are fire tender trees with dry soils. We are designing water supply projects for these communities to meet their water needs.

One prime activity for each water supply is the protection of its catchment, to boost water yield and improve moisture retention capacity of the soil. These form some of the key aspects of water supply planning, particularly in these hilly areas where regular springs are very scarce to find. We turn the catchment into a thicket of either indigenous - insitu species of trees or ex-situ species of forests. We are currently looking for financial assistance to implement three rural water supplies. The catchment forests of two have been badly damaged due to farming, which has been banned as a result of the water supply projects. Moreover, these communities had been badly hit by blood dysentery from 1995 to 1998 causing hundreds of deaths, whose cause was attributed to bad quality of drinking water and hygiene and sanitation. These are communities in need and donor assistance to address their water needs will be highly appreciated. Project details will be sent to any donor, who wishes to provide funding.

Gender equality

Women constitute the majority of the disadvantaged that we work closely with in the North West. We see them as the main target group of our programmes, since they play a very important part in rural development. In Cameroon, women do all the household work ranging from cooking, care of children and farm work. But women in some communities are either treated as slaves or property that has been bought, while some look at them as a machine for child production and nothing else.

CRREDEV is highly concerned with the plight of women in general, for which reason gender equality constitutes one of our main focus areas. For now, we are intervening in activities that allow them to assist themselves, their families, and communities. Basic services such as processing tools or machines that enable them to serve their families better are being sought. One group of women we are closely working with is Tchuma Women's Farming Group in Bansobi in Misaje Sub Division. These women trek for over 8 km to grind corn into flour. We are searching for a donor to provide them with a corn-mill. The plight of women does not end there but includes violence, abandonment after pregnancy, HIV/AIDS, economic underdevelopment, which often leads to orphans or child juvenile delinquency.

Child rights

Moreover, children in the rural communities have very little access to education - no textbooks or writing materials, no money to pay fees, no electricity to light their houses and read, few classrooms, and a pupil/teacher ratio of 466 to 1 in some primary schools. The situation is appalling at the borders of the country, where just one trained teacher teaches in an entire primary school. We have concern for these future generations for the continuity of a nation. In this regard, we are building a partnership with Hope for Children - UK to provide assistance to schools in Mbaw-Tikari Plain in Donga/Mantung Division. Hope for Children has recently provided book assistance to Government Secondary School Sabongari - Ngom through CRREDEV. We very much welcome this gesture and would be grateful to see many donors work with us to alleviate the plight of mountain dwellers.

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Save Your Future Association

Farmer Tantoh

Save Your Future Association (SYFA), is a non-profit organisation that was founded in 2001 by Dieudonne Tantoh Nforba (Farmer Tantoh). The motto of SYFA is: Think Globally, Act Locally. Our main goal is to teach organic farming techniques adaptable to the tropics and environmental protection of biodiversity to African children, youth and low-income farmers in rural communities.

Our specific objectives are:

- ▶ To create environmental clubs in primary and secondary schools, churches and in prisons.
- ▶ To carry out field training and capacity building with low-income farmers on organic farming techniques in the tropics.
- ▶ To encourage lawn creation and home gardens with children in rural communities.
- ▶ To protect spring catchments in order to preserve water resources.
- ▶ To encourage formal education for African children.

SYFA's headquarters are in Nkambe, North West Province (Western Highlands) of Cameroon. Due to the rapid increase in population, local farmers are moving upland in search of more fertile farmlands. Unfortunately, these farmlands are often located in watersheds. When farmers move onto these lands, they cut trees for fuel, agriculture and hunting. The methods used to prepare the land for agriculture include slash and burn method and the application of fertilizers and pesticides. This damages the local environment and pollutes watershed areas. As a result, Nkambe has witnessed the disappearance of spring water catchments, loss of biodiversity, decline in soil fertility and erosion.

Many rural dwellers have not yet realised the environmental problems associated with conventional agriculture. SYFA believes that the best way to educate a community is through its children and youth. As a result, we have created 10 environmental clubs in primary and secondary schools, churches and the local prison in an attempt to educate the community. In the clubs we have introduced lawn creation and home



Mountain farming, Cameroon. Photo: SYFA

gardens i.e. planting flowers, trees and shrubs. By making the community more beautiful using organic techniques we have gained many supporters and even have encouraged lawn creation and home gardens in more than 50 homes in Nkambe. We also have earmarked three farming groups, with whom we are trying to introduce organic agricultural techniques.

Our sensitisation information

- ▶ Do you want your compound, school, church surroundings, business place, etc. to look bright with flowers, lawns and trees and you don't know how to go about it?
- ▶ Do you want to learn how to plant and care for trees, flowers and lawns?
- ▶ Do you want to volunteer and contribute to promote environmental awareness in your village, town, division, province, nation and Africa at large?
- ▶ Do you want your children to learn practically the basic things of nature they see every day?
- ▶ Are you concerned about the disappearance of spring water catchments in Nkambe and sub Saharan Africa at large? And would you like to join us to protect these springs to save water? Remember! Water is life (World Day of Environment, June 5th, 2003 - Water! Two billion people are in dire need of it every day).
- ▶ Are you eager to learn about organic farming and agro-forestry?
- ▶ Is your farm, compound or neighborhood suffering from erosion and would you like to control it by planting vertiver grass?

If YES, SYFA is ready to help you to start a project even at your door.

Think of the earth!

"Every living thing on earth has an important role to every other living thing. We all depend on one another. Every kind of tree, plant or flower. Every kind of animal, insect or bird, has an important job to do to make the earth a good place for all living creatures. If all these disappear, we will live a little less happily and less comfortably. THINK OF THE EARTH! Will we live happily if all the trees are cut down?"

- World Society for the Protection of Animals in Kindness Magazine - September 1991, No. 74

We have received letters of encouragement from HRH - The Prince of Wales and also organic literature from Henry Doubleday Research Association (HDRA-UK). We are also having two WWOOF (World Wide Opportunities on

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Organic Farms) Volunteers (Elizabeth Huston and Rebecca Brier-Rosenfield - both from USA) working with us for three months.

Despite our progress, we still face the following difficulties:

- ▶ We need training and capacity building in administration and project management and we are appealing for volunteers to come and assist us.
- ▶ We need to equip our office with furniture and books for our local library.
- ▶ We lack means of transport for all our volunteers (bicycles and motor bike)

Let's Think Globally and Act Locally, so as to ensure the long-term sustainability of our planet earth.

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Legend of Table Mountain

As the story goes Jan van Hunks, a Dutch pirate in the early 18th century, retired from his eventful life at sea to live on the slopes of Devil's Peak, South Africa. To escape from his wife's sharp tongue he often walked up the mountain where he settled down to smoke his pipe. One day a mysterious stranger approached him and asked the retired pirate to borrow some tobacco. After a bit of bragging, a smoking contest ensued, with the winner's prize a shipful of gold. After several days, Van Hunks finally defeated the stranger, who unfortunately turned out to be the devil. Suddenly, thunder rolled, the clouds closed in and Van Hunks disappeared, leaving behind only a scorched patch of ground.

Legend has it that the cloud of tobacco smoke they left became the "table-cloth" - the famous white cloud that spills over Table Mountain when the south-easter blows in summer. When that happens, it is said that Van Hunks and the Devil are at it again.

Source: http://www.pantheon.org/articles/t/table_mountain.html

Mountain Children's Forum's Recommendations on Child Policy

Dave Grey

The mountain state of Uttaranchal in India has no specific policy on children or children's rights, and yet a strong and cohesive children's policy is essential to build a state that is responsive and attentive to their needs. This particularly applies to the rural and often very remote areas of the Indian Himalayas.

From 18 to 21 May 2006, the Mountain Children's Forum (MCF) and SBMA/Plan brought together more than 20 organisations and 135 children from rural villages to discuss the essential needs of the children. The meeting, which took place in the state capital Dehradun also aimed at establishing a common children's policy for the organisations and the government. Furthermore they tried to find a solution on how to put these policies down in writing. The event was also a celebration of the 4th anniversary of the Mountain Children's Forum, which was set up on 21 May 2002.

During the workshop the young people had the opportunity to meet senior officials of Uttaranchal and tell them about their concerns. They had the chance to talk to high-ranking officials such as the Governor, the Secretary of Finance, Social Welfare, and Woman and Child Welfare and the Director General of Police.

Many of these young people have already set up MCF chapters in their communities. They have been working together towards a more equitable society in their villages for the past three years.

The children presented 31 specific recommendations concerning four major areas, which included the right to an identity, the right to safety, the right to development, and the right to participation.

Extracts of the children's requests:

"Before we came to Dehradun we discussed with other members of our MCF groups what our state's child policy should look like. For the past two days we have shared these thoughts with our fellow delegates at this conference. After discussing the issues carefully, we selected the ones, which we



Children of MCF with Uttarakhand Governor H.E. Sudarshan Agarwal, India. Photo: MCF

would like to place as policy recommendations before the Government of the State of Uttarakhand.

“It is the request of all members of the Mountain Children’s Forum that the Government of Uttarakhand consider these suggestions when formulating a child policy for the state.”

The government officials indicated they would work to help the children in achieving their goals and agreed to consider the policy recommendations on children’s rights and issues.

The MCF as an organisation, headquartered in Dehradun, is already exploring specific strategies and programmes to follow up on the conference, especially concerning the implementation of the child policy recommendations.

The main purpose of the MCF is to empower children through collective action in order to improve their lives and communities by developing education, promoting health, preserving the environments, and instilling confidence and pride in their culture. By doing so, the MCF wants to tap into the children’s enthusiasm and energy to help them change the world.

Resources

- ▶ Conference report:
<http://www.mymountains.org/workshops/rights06.htm>
- ▶ The Mountain Children’s full statement and 31 policy recommendations:
http://www.mymountains.org/workshops/rights06_dec.htm

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RedMontañas: Lobbying for Approval of the Spanish Mountain Charter

Rosa F. Arroyo

RedMontañas is a national association that, just like Mountain Forum, is based on an “electronic platform” as our human and financial resources are very scarce. Our aim is to pressure the Spanish government to implement a strong central or national legal framework for mountain conservation, which should serve as a sound basis for sustainable development for mountain dwellers. It should further prevent inadequate environmental regional policies as transferring national politics to autonomous regions poses a real problem.

In 2002, the International Year of Mountains, the Spanish Ministry of Environment commissioned an independent team to elaborate the Spanish Mountain Charter, a technical report intended to analyse the socio-economic, environmental and legal situation in Spanish mountains. It was further intended to fix the guidelines and recommendations for making conservation and sustainable development compatible. Such a mountain-specific conservative approach looked very appropriate, given the many values of biodiversity, cultures and landscapes of Spanish mountains and its numerous problems and menaces. A majority of the problems stem from the irrational spread of urban and tourist development as well as the building of dams, highways and roads, hydroelectric and wind power plants, and electric highways. Wildlife habitat fragmentation, devastating forest fires, unsustainable hunting, poison, forest clear cutting and the threats of climatic change can also bring ever decreasing rain and increasing temperatures to Mediterranean mountains.

Four years down the line, the Spanish Mountain Charter is still waiting to be approved by our government and our mountains remain fully exposed to growing risks. In 2005, several members of the technical team as well as some other groups (including the Spanish Mountain Wilderness sections, the mountaineering magazine *Desnivel* and *Ecologistas en Acción*, one of the main environmentalist federations in Spain) joined forces and founded RedMontañas. Our first campaign was to

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Environmental activists atop Cabeza Lijar, Spain. Photo: Centaurea

send a letter, which was signed by many groups and influential people of the Spanish scientific and academic world, to the Minister of Environment. However, as this letter has fallen on deaf ears, RedMontañas has coordinated a strong national campaign in order to press for the urgent approval of the Mountain Charter. Even though we adopted a rather minimalist approach and only contacted people by email and telephone, we succeeded in persuading people all over the country to climb a peak.

On 21 May 2006 several mountaineers, environmentalists and mountain dwellers simultaneously climbed 43 summits. On every summit we took photographs with banners proclaiming both the approval of the Charter and the opposition to local problems such as the creation or enlargement of ski resorts, mining, radar stations and so on. On the following websites you will find more information on some of the ascents (note that the banners are written in the different autonomous languages of our country). Desnivel, a very popular Spanish mountaineering magazine posted the articles in the web: <http://tinyurl.com/pdwe5>. The simultaneous ascents of the 43 summits were broadcast by the media, and our report and the photographs were relayed to the Minister.

Finally, it is very likely that members of RedMontañas will be meeting with technical staff from the Ministry soon to talk about how to proceed with the approval of the Mountain Charter.

Last but not least, Spain was the only European country to work out its Mountain Charter in 2002.

Rosa F. Arroyo is President of RedMontañas and can be reached at: coordinacion@redmontanas.org

Learning Schemes and Radio Programmes to Help Combat Desertification

Anne Mette

The region of Río Hurtado is located in a 160 km-long valley in the Andes bordering on the Atacama Desert - the driest desert in the world. The region is home to around 6,000 people and is one of Chile's municipalities with a very high poverty rate. Unfortunately it is very badly affected by desertification.

Over the last years there has been a dramatic tendency concerning diminishing of biodiversity, the extension of the southern desert areas and the pressure on ecologic and economic living conditions of the population. Poverty has increased remarkably. A reversal leading to new ways of how to use nature - including the conscious protection of natural resources and the active formation of natural spaces on one hand and an improvement of the people's living conditions on the other hand - is urgently needed and is very relevant in meeting basic needs. The region's civil society organisations came to this conclusion and developed a concept for transition, which is based on their own concerns and possibilities.

The organisations agreed on a learning scheme for the region and for this purpose decided on a well-known education concept, which is popular for informal learning programmes. In order to combat desertification and poverty, Río Hurtado pursues strategies leading to an economic and ecological structural change. This means converting agriculture into ecological cultivation methods, changing caprine-husbandry, extending value-added chains (cheese production), introducing modern irrigation methods, and using renewable energies (solar cooking etc.).

This process is in no way a technological process. It solely aims at emancipating civil society organisation, prompting them to participate in decision-making processes and teaching them about further development and capacity building. The process was developed by organisations and opinion leaders from civil society in the year 2000. In order to achieve these goals a regional and permanent forum for decision-



Combating desertification, Chile. Photo: L. Saavedra

making and planning was founded. A joint municipal and regional development plan focusing on concrete and real-life issues has been composed, and is updated and adjusted annually.

For the capacity building (acquisition of knowledge and skills) and for the empowerment of the population, particularly women, the regional forum partners set up an independent centre for capacity building, namely the Academy of Cooperative Education (CFT).

Río Hurtado aims at strengthening the empowerment of grassroot organisations and the population, promoting the people's capabilities of action, learning and their motivation to open up for educational and professional perspectives, contributing to form a regional identity and developing ways of reproducing the use of land and nature, using alternative forms of income, developing a regional monetised economy and market, and increasing the added value in consideration of ecological and regional management norms.

The participating players from civil society are Junta de Vecinos, Pichasca, Asociación de Juntas de Vecinos Río Hurtado, Colegio de Profesores Comuna de Río Hurtado, Departamento de Educación Municipal Río Hurtado and Comité de Agua potable y Centro de Madres.

These participants are supported by the German development agency, KMG, the Chilean non-governmental organisation, El Canelo de Nos, and the European Union. The regional communication of stakeholders is an essential part of the formation process. An educational radio station (<http://www.radioterral.cl>) was also established. Because of the comparably easy technical operation and training schemes (radio technology and journalism), the radio station can be organised and shaped by the native population. It also aims at dealing with their concerns and urgent basic needs. People of the region have been trained to run the radio station independently and look after the maintenance of emission techniques. The radio station aims at informing, educating and sensitising the population.

Since the population is scattered over an area of more than 120 km, information and communication exchange is complicated. In addition, the "informal" illiteracy rate is higher-than-average and the educational level is very low. Communication via newspapers, leaflets or other written documents is therefore very difficult. Radio Terral is highly esteemed as a medium and organisation with a maximum level of integrity and honesty. It is more appreciated than television, political parties and even the Catholic Church.

The radio station communicates any structural changes in the region and various development processes, which means it actually facilitates and improves the transparency of the process of the battle against desertification and poverty. It furthermore informs about sustainable regional development, the work of the regional forum and the formulation of the local development plans. Radio Terral promotes these processes and facilitates public discussion forums.

With the help of the radio station, farmers receive guidance for new sustainable agricultural methods, and information on the effects of other best practices. The local people can inform each other about their experiences with new methods and discuss joint actions, such as reforestation and conversion of irrigation. The installation and operation of the local educational and cultural radio has been crucial for the success of these changes. The radio station offers education and information programmes, guidance to appropriate use of provided seeds and seedlings, adjusted technologies, and "new" animal breeds, i.e. goats that give more milk.

Radio also assures the continuous participation of grassroot organisations. The farmers motivate each other and are able to control the agreed transition steps. With the help of Radio Terral, they can easily acquire new knowledge and skills. The aim is to continue motivating the population for the active use of their radio. It will be complemented by an internet radio (R3L), which will use the method of "podcasting" (producing and publishing of audio files via internet). Radio programmes concerning the topics of dry lands, deserts and desertification as well as poverty reduction will be collected from other regions in the world that are affected by similar problems. They will be filed on the internet (and translated into different languages). Radio stations will then be able to access these files from all over the world and broadcast them in their region or community. The long-term objective is to initiate and promote a continuous exchange of experiences, successes, failures and best practises. It should be used as a knowledge exchange for regions that are affected by desertification and poverty, and give the people living in these regions the possibility to learn from each other.

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Microfinance and Mountains

Jane Ross



Microfinance transaction, Mozambique. Photo: R. Faidutti, FAO

Microfinance can give poor mountain communities the chance to earn more, build assets, and lessen their vulnerability to unexpected losses and external shocks. This involves better opportunities to move beyond day-to-day survival, plan for the future, and invest in better nutrition, housing, health and education for their children.

Yet, access to microfinance remains a challenge for sustainable development in mountain areas and, in some cases, negative experiences can worsen conditions instead of improving them.

This is the reason why collecting and sharing practices and approaches in microfinance can be so important to identify potential future strategies and bring real change to mountain lives and livelihoods. This sharing of knowledge is at the core of the Mountain Partnership's Microfinance Activity - set up by the Mountain Partnership Secretariat in early 2006 to respond to members' interest in inclusive financial services and to evaluate the potential for developing microfinance services for mountain communities. The overall goal of the Mountain Partnership Microfinance Activity is to finalise project proposals for the development of microfinance services for mountain communities.

What is microfinance?

Microfinance is the general term for basic financial services (such as credit, savings, leasing and insurance) which are provided by banks, NGOs, credit and savings cooperatives and a whole range of other informal mechanisms, to a clientele without access to traditional financial institutions - in other words, the poor.

As a first step, an informal interest group on microfinance was set up in January 2006 with members to brainstorm, conceptualise and identify thematic areas for concerted action on the ground. Since then, a growing network of members and non-members of the Mountain Partnership are meeting through electronic communication, face-to-face meetings and interviews in the field, to share experiences and pose questions about if, and how, microfinance is working for mountain development, and through what schemes.

Mountain Partnership member Soluciones Prácticas (ITDG), for example, is currently carrying out a financial assessment study for coffee and cheese producers in the mountain areas of Cajamarca, Peru. This has involved bringing together representatives of coffee producers associations through a workshop, and conducting interviews with all value chain actors, including financial institutions, input providers, warehouse holders, and the three major exporters in the area. The same type of assessment is being carried out for dairy value chain actors in the Tongod area.

Valuable experiences and lessons learnt have also been shared with financial service providers and producers from mountain regions during two seminars in Costa Rica. The meetings focussed on value chain finance and forest-based community enterprise development and hold valuable lessons for the Mountain Partnership Microfinance Activity. The first seminar 'Agricultural Value Chain Finance' (San José, 15-18 May), allowed for the interchange of experiences between institutions involved in delivering financial products and services in various agricultural production chains, and producers in rural and mountain areas who are benefiting from specific financial mechanisms. Many of these mechanisms and systems are set up in communities that are marginalised and lack access to formal financial services and therefore could be applied and further developed in other mountain regions, and within the framework of the Mountain Products Programme (part of the Sustainable Livelihoods Initiative of the Mountain Partnership). Relevant models are now being compiled and their potential evaluated for adaptation and application within the Programme.

The second seminar, 'Small- and medium-enterprise development for poverty reduction: Opportunities and challenges in globalising markets' (Turrialba, 23-25 May), provided a platform for institutions and individuals involved in forest enterprise development to share lessons learnt, particularly about effective methodologies to foster community-based approaches. Paola Bellotti, Coordinator of the Mountain Partnership Microfinance Activity, held discussions with conference participants who presented case studies on non-timber forest products in mountain regions (e.g. mushrooms, pine nuts and Brazilian nuts, ginseng, herbal medicines) to find out how these models for sustainable production could be replicated and shared with Mountain Partnership members, to explore if there were any financial products and services used in these production chains and if so, whether there were challenges accessing them.

As a follow-up, relevant case studies on financial products for mountain producers/value chains are being compiled for inclusion in the working paper, '*Inclusive financial services for mountain communities*'. This paper is already being shared with members on the Mountain Partnership Web site's informal workspace 'Discussion on-line', which has already proven a valuable tool for collecting case studies, comments and views on microfinance in mountain areas from around the world.

If your country or organisation has been involved with microfinance initiatives, the Mountain Partnership Secretariat would be interested to

learn more. Have you an interesting case study or lessons to share, or observations to make about microfinance in mountain areas? The Mountain Partnership Secretariat calls on the mountain community to join the Microfinance Activity, by sending input and helping to develop a truly useful tool for mountain communities.

Download the working paper, "Inclusive financial services for mountain communities" (in English) at: http://www.mp-discussion.org/topic.asp?TOPIC_ID=21.

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Microfinance and Mountains

Challenges

Economic

- ▶ Operation costs (training and set-up)
- ▶ Enterprise development and production initiatives less important than consumption needs
- ▶ Difficult access to markets
- ▶ Outflow of resources (need for mechanisms to capture revenues from natural resources)
- ▶ Low access to technology
- ▶ Donor dependency

Political

- ▶ Isolation and low-representation
- ▶ Border regions, arbitrary boundaries
- ▶ Regulatory framework for microfinance (law and policy)

Environmental

- ▶ High-risk environment
- ▶ Difficult access to natural resources
- ▶ Sustainable management of natural resources
- ▶ Geographical distances (transportation, roads and infrastructures)
- ▶ Low population density

Opportunities

Economic

- ▶ Small-scale production systems, micro-enterprise
- ▶ Low investment, high impact
- ▶ Tourism and traditional products as potential new areas for microfinance

Political

- ▶ Gender politics favouring women enterprise
- ▶ Multi-lateral organizations, transboundary collaboration
- ▶ Microfinance regulatory framework improvements in mountains
- ▶ Replicable models due to commonalities of mountain communities (transcending of North-South divide)

Environmental

- ▶ Environment conservation activities as revenue-generating enterprises
- ▶ Small-scale activities are low-impact activities

Social

- ▶ Women enterprise and gender issues
- ▶ Self-help features of mountain communities
- ▶ Solidarity and cooperative sense as positive factors for microfinance
- ▶ Self-reliant communities

Mountain Forum/ICIMOD Digital Photo Contest

The winning entries from the Mountain Forum/ICIMOD Digital Photo Contest “Deserts and Desertification in High Altitude Areas” organised to mark the World Environment Day 2006

Mountain Forum Global Prize



Harvesting the high desert, Tibet. Photo: Jutta U. Kern

A total of 132 entries were received from 37 participants from all over the world. Most entries depicted the harsh realities of life in the mountains, mountain deserts and rangelands of Afghanistan, Nepal, India, Pakistan, China, Japan, Kenya, Egypt, Chile, Venezuela, Colombia, Bolivia, Argentina and USA. Mr. Clifford Nietvelt and Dr. Zbigniew Mikolajuk picked the winning entries based on originality, composition, content and effectiveness in conveying the theme of the photo contest.

To view the online photo gallery showcasing all the entries, please visit:
<http://www.mtnforum.org/apmn/wed2006-dpc/index.php>

ICIMOD Himalayan Prize



Boon and bane of water, Bagrot Valley, Pakistan. Photo: Karl Schuler

Special Mentions



Donkey carrying fuel and fodder, Bamiyan, Afghanistan. Photo: Thomas Reineke



Whither pasture? Kargil, Jammu and Kashmir, India. Photo: Anupam Anand



Near Fotula, Ladakh, India. Photo: Shuchita Sharma

Member Profile

Elizabeth Allison

Amy Krause



Ms. Allison and her host family in Lichen, Trashi Yangtse, Bhutan. Photo: Phuntsho Dorji

The beautiful but relatively flat state of Missouri seems like an unlikely place to begin a mountain journey. In Elizabeth Allison's case, it was the perfect place to begin. Today, Elizabeth Allison is a PhD candidate in Environmental Science Policy and Management at the University of California at Berkeley (California, USA) and has been a Mountain Forum member since 2001. Her present work is building on Master's research she did with Yale University, where she studied the role of religion in environmental conservation in Bhutan.

The story of how Elizabeth Allison came to be studying this intriguing topic is a lesson in doing what you enjoy.

"I don't think I had even seen mountains before I was about twelve, but I fell in love when I went to the Rockies. Since then, I've always loved hiking, backpacking, and climbing in the mountains." Elizabeth's interest in mountains grew after reading Peter Matthiessen's *The Snow Leopard* as a young student. She became determined to visit the Himalayas, and spent a semester studying in Nepal during her college years. Although she had originally intended to take an English degree, her time in Nepal led instead to her interest in religion and the environment.

"When I started university I thought I would be an English major because I liked reading and writing. But then I became fascinated by the study of religion. When I studied abroad in Nepal, I was disturbed by the erosion and deforestation taking place near Annapurna and decided that something had to be done. So I added an

environmental studies concentration to my religion major and have carried those two themes forward in my graduate studies."

After college, Elizabeth worked as a project coordinator in environmental restoration and voluntary service programmes, including AmeriCorps, a domestic Peace Corps, in the San Francisco Bay Area. In the course of this work, she noticed that many volunteers were motivated by their religious or spiritual beliefs. She decided to pursue graduate work to understand more about how such beliefs might help solve pressing social and environmental problems. Elizabeth's Master's research at Yale was inspired by an article about Bhutan, sent to her by a friend. Reading the government's statements - asserting that Bhutan had maintained much of its forest cover because of Buddhist beliefs - Elizabeth was immediately interested in the conjunction between her two areas of study. Over the course of three years, she spent about seven months working with the Bhutan Trust Fund for Environmental Conservation in Trashi Yangtse, eastern Bhutan, and Thimphu, Bhutan's capital. "I was fortunate to be able to share the results of my study at the First International Seminar on Bhutan Studies," Elizabeth said. This project was followed by a year-long study of the potential role of natural sacred places in conservation in Sagarmatha National Park, in the Khumbu region of Nepal. Elizabeth worked with The Mountain Institute's Himalayan Program to increase the cultural knowledge of trekkers in the area.

When asked about the place of Mountain Forum in her work, Elizabeth is enthusiastic: "I learned about Mountain Forum while preparing my research plan for Bhutan, when searching around the web for electronic resources about the Himalayas. Mountain Forum has been amazing in my research! Originally, I wrote a paragraph about my interest in religion and the environment and so many people responded with suggestions for things to look at or people to talk to. And then I spent a year in Nepal continuing my research and again I wrote a paragraph and asked for resources, and dozens of people wrote back to me. It was fantastic, it was really wonderful. So many people offered to meet with me in Kathmandu, it was amazing. People were supportive of my topic while some other people, back in the States, had been dubious. The support was really great. "

Elizabeth's present work at Berkeley concentrates on the role of religion and spirituality in environmental decision-making. She is interested in people's perceptions about natural sacred places, and in whether those beliefs influence policy. "Science, policy and law have been effective conservation tools, but not completely effective. Climate change and vanishing species seem intractable. I just wonder if there another piece we can add to the puzzle." Elizabeth is preparing her dissertation research now, with plans to return to Bhutan for additional fieldwork in 2007. Though the connections between religious belief and environmental practices seem more apparent in places like Bhutan where most people following Buddhism, this topic is relevant in North America also. Native Americans revere natural sacred places, and spiritual ideas about the land gave rise to the US national parks movement. Elizabeth is also a researcher with the Garrison Institute, which investigates ways to apply the wisdom of the world's contemplative traditions to social and environmental challenges, including climate change and sustainable development.

Elizabeth Allison continues as an active member of Mountain Forum. Asked about the future, after her PhD studies, she says, "I want to work in international environmental conservation, incorporating cultural perspectives in conservation. Not just telling people 'an endangered species lives here', but finding ways to communicate about special places, ways that work more in harmony with what people need and believe."

Amy Krause is the Node Manager of North American Mountain Forum. Email: namf@mntnforum.org

The upcoming events listed below were brought to our attention by members of Mountain Forum as well as event organisers. If you have information on a mountain-related event, please send the information to Mountain Calendar via the submittal form at: <http://www.mountainpartnership.org/events/c-newevent.asp>. or email us at calendar@mtnforum.org. For many of these events, more detailed descriptions are available from the Mountain Partnership website: <http://www.mountainpartnership.org/events/default.asp>. Many thanks to all the contributors for sharing this information with the Mountain Forum community.

Mountain Forum is not responsible for any changes in the programmes. Please contact the event organisers for the latest information.

August

14 - 22 August 2006

Himalaya Film Festival Tokyo 2006
Tokyo, Japan
Contact: info@himalaya-archieff.nl
Web: <http://www.himalaya-tokyo.net>

21 - 25 August 2006

Conferencia Internacional Know How, UNAM, México
Mexico City, Mexico
Contact: knowhow_mex@generounix.pueg.unam.mx
Web: http://knowhowpueg.unam.mx/english_site/index_eng.html

28 August - 1 September 2006

12th Conference on Mountain Meteorology
Santa Fe, USA
Contact: durrand@atmos.washington.edu
Web: <http://ams.confex.com/ams/SantaFe2006/oasys.epl>

September

5 - 8 September 2006

Regional Workshop on Forest Governance and Decentralisation in Asia and the Pacific
Yogyakarta, Indonesia
Contact: g.dahal@cgiar.org
Web: http://www.asiaforests.org/home/files/_ref/events/Decentralization-Ind0906.htm

6 - 8 September 2006

Second International Conference on Sustainable Tourism
Bologna, Italy
Contact: rgreen@wessex.ac.uk
Web: <http://www.wessex.ac.uk/conferences/2006/tourism06/index.html>

6 - 11 September 2006

Rosenberg International Water Policy Forum
Canada
Contact: kabeaird@ucdavis.edu
Web: <http://www.banffcentre.ca/mountainculture/>

11 - 13 September 2006

The IASTED International Conference on Environmentally Sound Technology in Water Resources Management
Gaborone, Botswana
Contact: calgary@iasted.org
Web: <http://www.iasted.com/conferences/2006/Botswana/c515.htm>

12 - 15 September 2006

4th World Congress on Mountain Ungulates
Munnar, Kerala, India
Contact: hrwepa.munnar@tatatea.co.in
Web: <http://www.wmcu2006.org/>

October

3 - 7 October 2006

Scientific Conference: Ecosystem Goods and Services from Planted Forests
Bilbao, Spain
Contact: conference86@iefc.net
Web: <http://www.waldbau.uni-freiburg.de/bilbao.html>

9 - 15 October 2006

Water, Ecosystems and Sustainable Development in Arid and Semi-arid Zones
Urumqi, China.
Contact: watarid@ephe.sorbonne.fr
Web: http://www.ephe.sorbonne.fr/watarid/watarid_en.htm

24 - 25 October 2006

Bear Conservation in a Fast-Changing North America
Revelstoke, B.C., Canada
Contact: office@cmiae.org
Web: <http://www.cmiae.org/conferences.htm>

28 October - 5 November 2006

2006 Banff Mountain Festival
The Banff Centre, Banff, Alberta, Canada
Contact: mountainculture@banffcentre.ca
Web: <http://www.banffcentre.ca/mountainculture/>

November

4 - 5 November 2006

The Rolwaling Conference: Mountain Hazards, Mountain Tourism
Kathmandu, Nepal
Contact: sicroff@gmail.com
Web: <http://www.rolwalingconference.com>



Mountain Calendar

November

9 - 12 November 2006

Global Environmental Challenge: Regional Challenges - An ESSP Global Environmental Change Open Science Conference

Beijing, China

Contact: mrice@essp.org

Web: <http://www.essp.org/essp/ESSP2006/>

14 - 17 November 2006

Mountain Conservation and Connectivity Management Workshop
Quito, Ecuador

Web: <http://www.mountains-wcpa.org/html/conferences.htm>

26 - 27 November 2006

International Symposium on Geo-Disasters and Infrastructure Management
Kathmandu, Nepal

Contact: shrestha_h@hotmail.com

Web: <http://www.nec.edu.np>

December

1 - 7 December 2006

International Film Festival: Desert Nights - Tales from the Desert
Rome, Italy

Contact: info@desertnightfestival.org

Web: <http://www.desertnightfestival.org/desertnight.htm>

4 - 7 December 2006

International Symposium on Drylands Ecology and Human Security
Dubai, United Arab Emirates

Contact: info@isdehs.com

Web: <http://www.isdehs.com/index.html>

11 - 15 December 2006

Elevational Gradients and Mountain Climates, Resources, and Ecosystems:
American Geophysical Union, Meeting Session

San Francisco, USA

Contact: cmillar@fs.fed.us

Web: <http://www.agu.org/meetings/fm06/review/>

12 - 15 December 2006

2nd International Conference on Sustainable Sloping Lands and
Watershed Management: Linking Research to Strengthen Upland Policies
and Practices

Luang Prabang, Laos

Contact: SSWM2006@nafri.org.la

Web: http://www.nafri.org.la/05_news/workshops/sswm2006/sswm2006.htm

January 2007

23 - 27 January 2007

International Dialogue on Science and Practice in Sustainable Development:
Linking Knowledge with Action

Chiang Mai, Thailand

Contact: elisabeth.dyck@chello.at

Web: <http://www.sustdialogue.org/index.htm>

Please update your contact information!

Dear Mountain Forum member,

Please update your contact information by visiting <http://www.mtnforum.org/rs/mem/update.cfm> OR by notifying the regional office nearest to you as per the list below:

Africa

Node Manager

African Mountain Forum

c/o African Highlands Initiative

ICRAF Uganda

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Kampala, Uganda

Tel: +256-41-220 607/2

Fax: +256-41-223 242

Email: amf@mtnforum.org

Web: <http://www.mtnforum.org/rn/amf.cfm>

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Node Manager

Asia-Pacific Mountain Network

ICIMOD

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Kathmandu, Nepal

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Fax: +977-1-552 4509

Email: apmn@mtnforum.org

Web: <http://www.mtnforum.org/rn/apmn.cfm>

Europe

European Mountain Forum

Email: emf@mtnforum.org

Web: <http://www.mtnforum.org/rn/emf.cfm>

To contact the European Mountain Forum by post, fax or phone, please contact the Mountain Forum Secretariat at the address provided on the back cover of this Bulletin.

Latin America

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InfoAndina/CONDESAN

International Potato Center (CIP)

Apartado Postal 1558, Lima 12, Peru

Tel: +51-1-349 6017 ext. 2056

Fax: +51-1-317 5326

Email: infoandina@mtnforum.org

Web: <http://www.mtnforum.org/rn/infoandina.cfm>

North America

Node Manager

North American Mountain Forum

Mountain Culture at The Banff Centre

107 Tunnel Mountain Drive

Box 1020, Banff, Alberta, Canada T1L 1H5

Tel: +1-403-762 6477

Fax: +1-403-762 6277

Email: namf@mtnforum.org

Web: <http://www.mtnforum.org/rn/namf.cfm>



Supporting Institutions



Food and Agriculture Organization of the United Nations



Swiss Agency for Development and Cooperation



Naur Rams, Phu, Manang, Nepal. Photo: Rinjan Shrestha

Host Institutions and Partners



Bellanet



Consortio para el Desarrollo Sostenible de la Ecorregión Andina



European Mountain Forum



International Centre for Integrated Mountain Development



International Potato Center



The Banff Centre



The Mountain Institute



World Agroforestry Centre



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