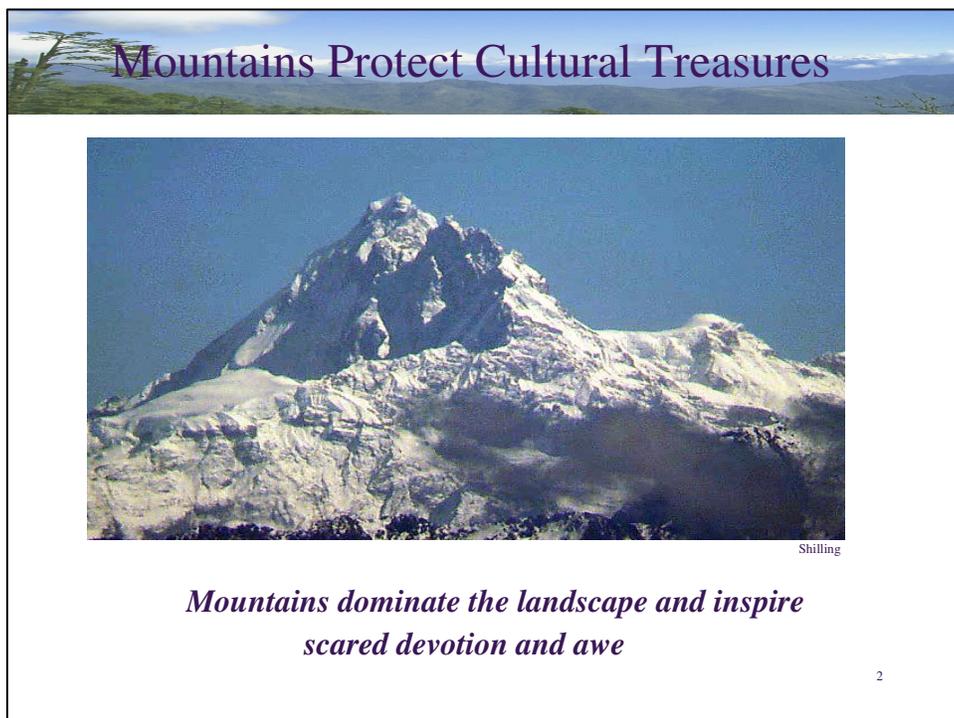


The Orem conference on Women in Mountains is an important gathering of people who care about the future of mountains, and mountain women. Because what happens to them will shape the future for all of us. This presentation focuses on three things: first, the great assets we have in mountains; second, the plight of mountain women; and finally, what are the keys to sustainable livelihoods for mountain women. Let's look at some of the great assets of these geographic treasures we all love.

Mountain Assets. Mountains present huge paradoxes: they dominate the landscape and inspire sacred devotion and awe. Mountains are pilgrimage sites for Christians, Jews, Shinto, Hindu, Buddhist, and many others.



And mountains are central to the origin stories of many cultures, such as the Maori of New Zealand, Tibetans, Indians, Inca, and Native Americans.

Mountains Protect Cultural Treasures



A woman wearing a traditional red and white patterned dress and a white hat with a colorful circular emblem and the text 'Miss Cherokee' and '2005' stands next to an informational sign. The sign features the Cherokee title 'ᏍᏏᏁᏍᏏ ᏈᏁᏍᏏ' and several paragraphs of Cherokee text. The background shows a blue tent and a mountain landscape.

Mountain People Preserve Place-based Traditional Knowledge 3

Recreational values are epitomized by alpinists and mountain climbers. But mountains have other recreational values as well -- skiing, hiking, scenic beauty and white water rafting -- making mountains the second most important tourism destination, after beaches. Tourism revenue related to intact mountain environments is a significant source of income for mountain people, and for regional and even national economies.

Mountains Protect Cultural Treasures



A person wearing a red jacket and a green hat is sitting on a rocky mountain peak. The background shows a vast landscape with a blue sky and white clouds. The person is looking towards the camera.

Mountains Provide Recreational and Spiritual Renewal

5

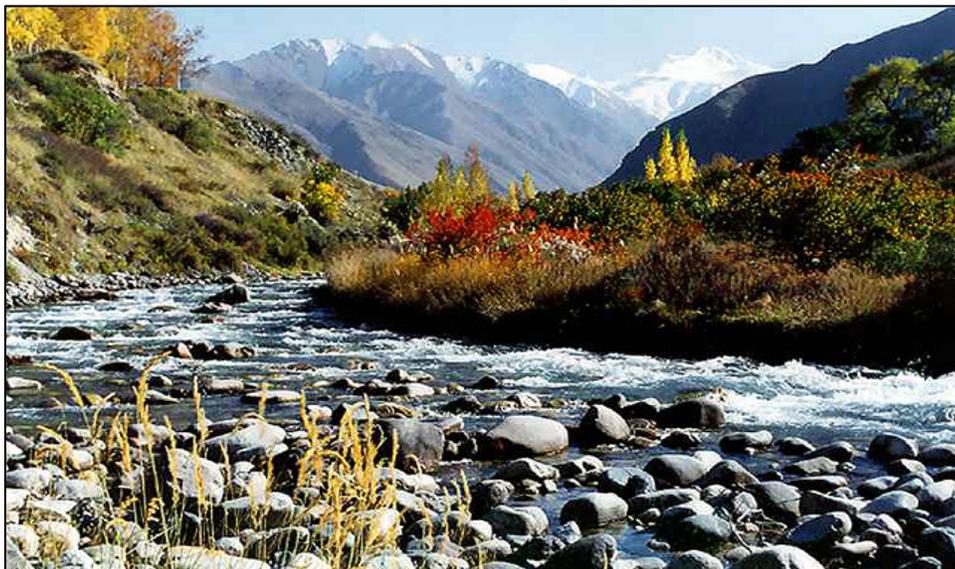
Mountains shelter more biodiversity than most rainforests! They are a classic example of conflict between managing land for timber, mining, hunting or heavy recreational use -- and environmentalists, who want to preserve everything. We can learn a great deal from the wisdom of mountain women and their extensive traditional knowledge about how to manage resources sustainably so there is a balance that works.



Mountains Kyrgyzstan Project

*Over Half of the World's Biodiversity 'Hot Spots'
Are in Mountains*

Healthy mountain ecosystems are crucial to maintain hydrological integrity. Kyrgyzstan, shown in these photos, is one of 15 countries covered over 75% of its area by mountains. Many of the world's mega cities rely on mountain forests to protect their drinking water.

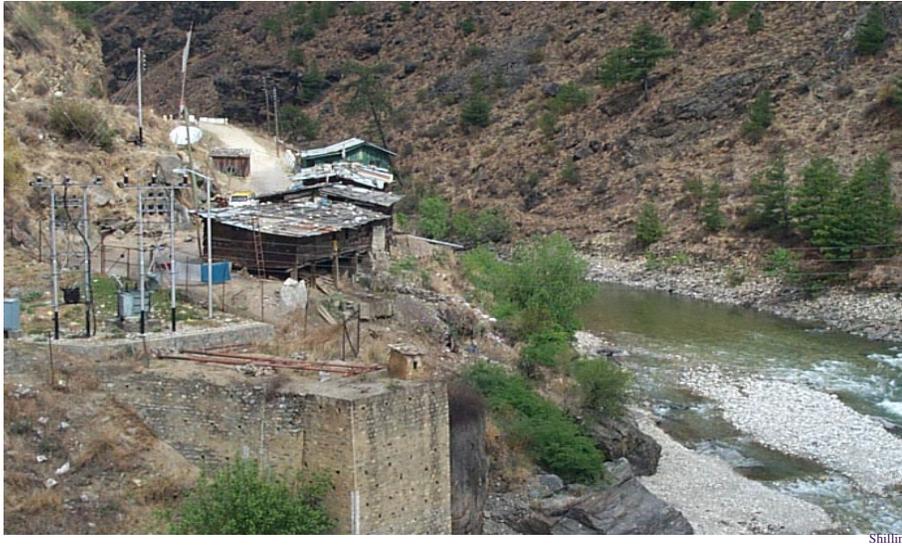


Mountains Kyrgyzstan Project

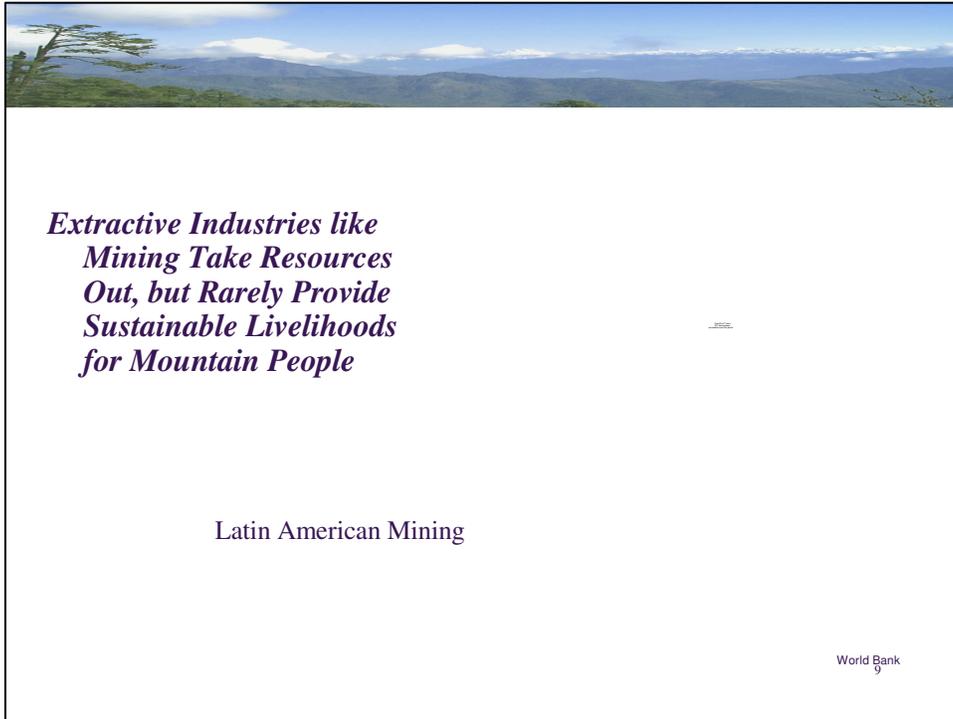
*Mountains Provide Fresh Water to Over
Half the World's People*

Healthy mountain environments can ensure water quality and quantity for drinking and for agriculture -- and also for generating revenue and providing power to remote areas, such as seen in Bhutan's mini hydro stations.

And Hydro for Power and Revenue



The coincidence of mountains and mineral deposits is striking -- something people in Utah know very well. Mining is a great financial asset. But mining can also be a real problem for mountain communities in developing countries, due to the vastly unequal power of the mining companies compared to that of poor mountain people. In countries from Peru to Papua New Guinea, there are dozens of documented cases of environmental abuse- such as deforestation and pollution of water supplies - with devastating effects on the health of local people, especially from the impact of heavy metals like mercury, arsenic and lead. And as is always the case, women and children are most vulnerable. The US, Canada and some other countries have demonstrated, however, that good environmental laws can prevent or mitigate most of these tragedies -- provided the laws are enforced.



Challenges for Mountains and Mountain People. The economic returns from mineral ores and the associated problems of mining make a good segue to the next topic. Because while mountains shelter great assets, there are real problems too. Mountain people depend heavily on their natural resources to sustain them. Moreover, environmental protection and wise resource management are financially smart investments. It costs much more to restore degraded ecosystems than to protect them. And the revenue generated from protection of upland watersheds often provides a higher economic rate of return than does the extraction of resources like timber. How can that be? Recall that at least half of our water comes from mountains; and extraction of resources can destroy hydrological integrity. That means the utility companies must build new reservoirs to deal with reduced water quantity, or new treatment plants to deal with poor water quality; and the cost of that - according to experience in New York City and Los Angeles, for example, is multiple times the value of the timber that could be taken out. By protecting the mountain environment, the water quality and quantity are assured, resulting in greatly reduced costs to utilities -- and to consumers.

Despite their many riches and assets, mountain people are often poor. Mountain people often lack political 'voice' and access, and often suffer from inequitable power relationships, discrimination and ridicule (as with our own 'hillbillies' in America's Appalachian range). Too often -- aside from exceptions such as Austria and Switzerland,

-- they do not participate in decision-making. They often lack legal title to their land, and are easily exploited or neglected.

Mountains People are Often Poor



-- their people are often isolated, ignored and often poor

12

The greatest challenges, however, are faced by mountain women who live in remote areas at higher altitudes. The remainder of this presentation therefore will focus on these mountain women -- those who actually live in the mountains, as opposed to those living downstream who depend on the environmental services mountains provide. For these women, everything is harder the higher you go: the body needs more calories to live at higher altitudes, but the growing season for crops is shorter. Services, like health care and education, are in short supply or in many cases they simply do not exist; settlement fragmentation in mountainous areas makes it difficult and expensive to provide even the most basic social services. Similarly, terrain conditions make communications of all types problematic. Construction of roads and other linkages to markets is difficult, impairing access to markets, with resulting constraints to economic development and social integration.

Higher Altitudes = Greater Challenges

- *Nutritional Status Declines with Altitude*
- Food availability Decreases with Altitude
- Services are less available the higher you go

T

In high mountain regions of Asia, men often leave for extended periods to seek work because there is not enough food, leaving women to carry the burden alone. Out-migration is seriously depopulating many mountain communities in the Himalaya, especially of their menfolk. On the other hand, ironically, population pressure in tropical mountains is creating the opposite problem: encroachment of lowlanders seeking land to farm is pushing traditional mountain dwellers to higher, and more marginal land - and causing serious conflicts in the process as traditional mountain communities rarely have formal land tenure, and get displaced by the newcomers.

Women are Disproportionately Poor

- *Migration of Men leaves women with more work*
- *Women's work is subsistence, not income generating*

TMI

14

Women are Disproportionately Poor

- *Maternal and Child Mortality are Extreme in Mountains*
- *Health conditions are Alarming*



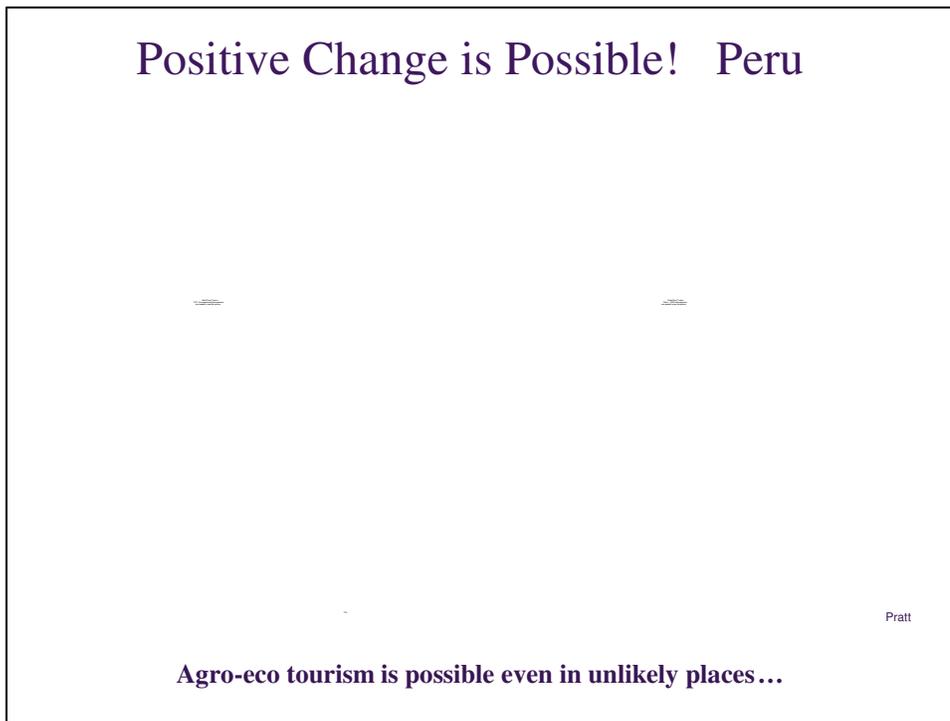
Normal government services, such as education and health are also scarce in mountains. While a few mountain villages in Nepal have a clinic, it is more typical for people to have to walk 2-3 days to reach even the most rudimentary medical care - not much use for a woman experiencing a difficult labor, or one whose baby has a fever. Remember also that homes are not insulated, and that cooking is done on indoor fires – with smoke. Window openings for light, and chimney vents to let out smoke also let in the cold - so it is a constant battle between freezing, being in the dark, and choking on smoke.

Here are a few basic numbers that give some idea of the size of the problem. About 732 million people live in areas defined as mountainous. At higher altitudes, the body's metabolic rate requires more calories just to survive; but the growing season for food crops is shorter at higher altitudes. Therefore, some 70 million mountain dwellers – those living at altitudes over 8,000 feet -- live in famine and hunger. Over 245 million -- more than one third -- of all mountain people are vulnerable to food insecurity. Due to out-migration of men and other factors, the majority of mountain people are women; and within families, women's share of food is disproportionately low.

Sustainable Livelihoods: Successes for Mountain Women. Very few Non-profit agencies and even fewer government agencies work in mountains because it is so difficult: conditions are harsh, and villages are far apart. Those that do work in mountains have a hard time generating real improvements over large areas. But it can and does happen. Having reviewed the great assets of mountains, and described the plight of mountain women, it is clear that there is a dramatic chasm between possibility and reality. So at this point, I want to tell you two stories of enormous success, and try to draw some lessons about what these successes might mean for other areas, and for sustainable livelihoods for mountain women. The two keys in these examples are: 1)

finding high value-added products; and 2) creating connections to markets -- a huge challenge for the millions of people who live in remote, high altitude communities.

Andean Agro-eco-tourism: the Vicos Project of The Mountain Institute. The first project is based on the high value-added product of tourism. Connections to markets are provided by bringing people to the mountains, rather than taking mountain products to commercial markets. This is a wonderful project of The Mountain Institute, the only global NGO devoted to conservation and sustainable development of mountains.



Vicos is an extremely poor, remote community in the Cordierra Blanca range of the Andes, with several hundred families living in scattered family compounds. They are poor, but hard working and amazingly knowledgeable farmers -- note the cows are tethered in the field to glean the left-over crop, and fertilize the field without the farmer having to haul manure to these steeply sloping fields.

Positive Change is Possible! Peru

TMI

With careful planning...and taking stock of assets and capabilities

The process of creating positive change began NOT by listing the problems they faced, but by women coming together to take stock of what assets they have to offer that could attract tourists where none had come before, and what they could do through self help to make a better life for themselves and their children. What assets did they identify?

Positive Change is Possible! Peru

TMI

The people may be poor -- but their land is ecologically
and culturally rich -- and stunningly beautiful

Scenic beauty is Vicos's greatest asset, and the basis of its 'high value-added product'. The area is hard to reach, but is well worth the effort. Clearly, there cannot be a mass market. But they need only a few hundred visitors per year to spend \$30 a day apiece for lodging, food, and guides to make the difference between poverty and wellbeing.

Positive Change is Possible! Peru



They are good farmers, with a long tradition of fine weaving

The weaving of beautiful cloth continues to this day as a fundamental tradition of Andean mountain people and is another real asset for the agro-eco-tourism project in Vicos. The Spanish conquerors were amazed by the gold of the Incas, but did not realize that the Inca themselves considered textiles to be more valuable than gold. The persistence of this rich tradition is a definite asset that women of Vicos identified, that they can share. Visitors are interested in seeing the sheep, the spinning and weaving -- and also in buying textile products, such as belts, blankets, panchos and vests.



I love this picture because any Andean could tell you what it is -- and we have a hard time figuring it out. Potatoes! Local farmers know how to grow and distinguish over 100 varieties of potato - native to the Andes -- and tubers, each one selected according to minor differences in altitude, sunshine, wetness or dryness, taste, and early or late maturity. These small differences are essential to protect these remote communities from the risks of weather. They also grow beans and corn, make their own cornstarch, and raise chickens, sheep, cattle and even trout. Again, the traditional agriculture of the high Andes is an attractive asset for tourism.

Positive Change is Possible! Peru



TMI



TMI

Whole families must work to make sustainability possible

Formal schooling is rudimentary, but there is a wealth of traditional knowledge that must be acquired in a wide range of activities -- knowledge of which varieties to plant where, how to tend, harvest, store and process; animal husbandry and veterinary practice; medicinal plant identification and use; weaving and sewing; and much more. For mountain women, work is not specialized by gender -- everyone must know how to do everything! Tourists find such traditional knowledge fascinating, and the women of Vicos are articulate and charming in sharing their knowledge.

Positive Change is Possible! Peru

They learned hygiene and
nutrition

And how to prepare meals
that appeal to tourists..

TMI

Adventure tourists and eco-tourists want three things: a vermin-free bed; clean toilets, and hot, tasty food. If you can provide those basics consistently, you can build a good business by word of mouth. And again, just a few hundred tourists each year will make the difference between despair and a healthy community.

The women of Vicos and their families are generous hosts, sharing their way of life with visitors -- and accommodating them in charming 'casitas' the men of the village built -- even carrying glass panes for windows up the steep side of the mountain. Each cottage is equipped with bedroom and sitting areas, a kiva fireplace and a bathroom with a porcelain toilet fitted over a pit latrine, and running (cold!) water piped in from a fresh mountain stream.

Positive Change is Possible! Peru



TMI

Vicos mountain women are proud of their new skills

And learn from each other



TMI

They and their families are generous hosts, sharing their way of life with visitors

Positive Change is Possible! Peru

Now there is an abundance of food - enough to sell in the market...

Just a little technical assistance can help farmers extend their short growing season, and can change the dynamic from hunger to sufficiency and even surplus.

Positive Change is Possible! Peru

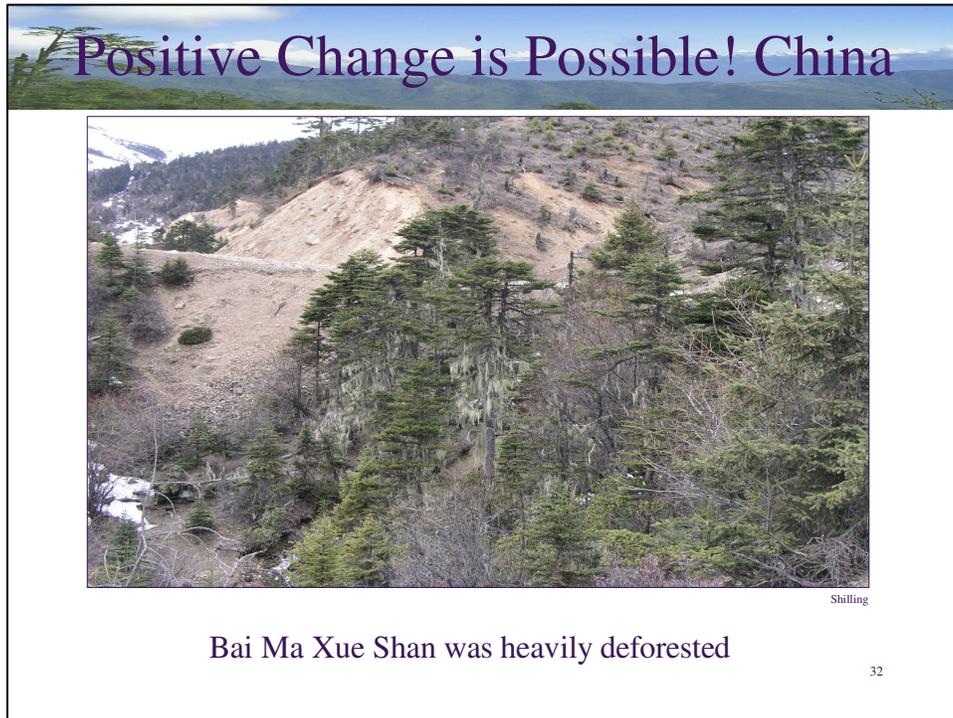
TMI

TMI

And -- an abundance of happiness!

And most of all, the Mountain Institute's project in Vicos has created a sense of pride and joy. The families of Vicos have learned that because others appreciate them, they appreciate their own culture and traditions even more. They have created a museum to showcase their cultural heritage, not just for tourists, but for themselves and their children too.

Exporting Non Timber Forest Products in Yunnan, China: The Macro-Meso-Micro Project of World Wildlife Foundations. Turning to China, Bai Ma Xue Shan is one of a series of five pilot projects in five different countries carried out by WWF's Macroeconomic Policy Office that were evaluated by my husband and myself. It is based on WWF's 3xM approach of linking Micro Meso and Macro levels -- in this case, the local communities, provincial government, and national government.



In this remote area of Yunnan province, 85% of population is ethnic Tibetan. After upstream deforestation caused severe flooding of the Yangtse River in 1997, the government banned logging; but local people depended on timber for half of their meager incomes. They resented the logging ban, and serious conflicts developed between villagers and local authorities.

WWF sat down with villagers, local, regional and even national authorities to develop a simple plan: local people could have access to the forest to harvest matsutake mushrooms in exchange for their guarantee that they would protect the forest. WWF provided a drying machine and technical assistance to ensure quality standards for dried mushrooms. The government provided electricity so the drying machine could operate; and helped make arrangement to export the mushrooms to foreign markets.

With income to replace timber, forests are re-growing, and villagers have incentives to protect the forest, because forest cover is essential for growth of the valuable matsutake mushrooms. Extension services helped farmers - mostly women - extend the growing season for their own crops too, using plastic row covers that act like small greenhouses.

The electric drying machines make the mushrooms light enough to carry out in head loads until they can reach a road where trucks take them to the regional center for packaging. So once again, we see that success depends on a high value product and linkages to markets. In Peru, success depended on bringing the tourists to the mountains. In China, it was achieved by exporting the product to markets that were not accessible to mountain people without external cooperation to make the links.

Positive Change is Possible! China



Shiling

High value added products + linkages to markets are keys to solving mountain poverty

34

The project resulted in a five to ten-fold increase in incomes in just three years. When I asked the villagers what was the biggest change the project had brought, they said: “We are proud of ourselves now: Pride and dignity, not feeling ashamed. We can send our children to school! We have used our extra income to build a school this year, and next year we will have enough to hire a teacher for all the children!”

That this was done in order to protect the mountain ecosystem is significant because this area is one of the most important regions for biodiversity and endemic plants in the entire world; and it shelters the headwaters for some of the world’s greatest rivers, such as the Yangtse.

Positive Change is Possible! China

The biggest
difference now?

Dignity!



Pratt

Positive Change is Possible! China



Shilling

Respect for tradition - and embracing change!

37

Women had an important voice and vote in decisions about how to allocate the extra income. Men no longer have to go to cities to beg four to five months of the year, because now there is enough food in the village. With very small assistance from agricultural extension, they invested in row covers to extend the growing season. They now have food self-sufficiency. The dramatic improvement has renewed their faith in their own traditions too, just as happened in Peru. The fact that others value them has helped them to respect themselves and renew their own traditions.

Positive Change is Possible! China



Remote rural wealth,
Not remote rural poverty...

Shilling

38

The village, by the way, is in the valley of Shangri-la -- and now it really is Shangri-la.

Positive Change is Possible! China



There is food enough to share with guests

Pratt

39

As representatives of the WWF project, we were served a ten-course feast -- with great pride and with great thanks from people who just a few years ago could not even feed themselves. As just mentioned, incomes increased five to ten times within a three-year period, *and* the forest and ecosystem that villagers depend on is protected.

Lessons Learned from Experience



Hans Hurni



M. O. Ratois

- **Link Upstream and Downstream Markets**
- **Connect to Political Systems and Decision Making**

So what causes the big differences between the conditions of mountain poverty and environmental depletion, and sustainable livelihoods and ecosystems? It was the great Swiss mountain geographer, Bruno Messerli who showed me two pictures that make it obvious: the poor Ethiopian farmer with his scrawny cattle, and the fat, happy and productive Swiss cows grazing in their Summer pasture are different only insofar as the Swiss cows produce a high value-added product (anyone who has bought imported cheese knows just how valuable!), and they are well connected to markets. In large part, this is because mountain people in Switzerland have a powerful, even decisive voice in decisions that affect them. So in sum -- the keys to sustainable livelihoods for mountain women are: finding high value added products and connecting them to markets.

Mountains are intensive, not extensive in terms of human and natural systems -- so it is crucial to think in integrated and holistic terms. Not 'timber' 'water' 'education' 'health'... but all of these all at once. In the end, if we all learn to 'think like a mountain', both economic and environmental sustainability are achievable for mountain women and their families. And that is essential for the sustainability of everyone downstream too.

And...Think Like a Mountain!



Thousands of tired, nerve shaken, over civilized people are beginning to find that going to the mountains is going home; that wilderness is a necessity; and that mountain parks and reservations are useful not only as fountains of timber and irrigating rivers, but as fountains of life -- John Muir, 1898