

INTRODUCTION

1. Background

Mountain ecosystems are at the centre of the global debate on sustainability and the perceived conflicts between development and environment. This was amply reflected in the MOUNTAIN AGENDA presented during the UNCED (Earth Summit) in Rio, in June 1992. However, equally important is the problem of poverty in mountain regions of the developing world. The various problems encountered in mountain areas have restricted production and exchange options. People's traditional survival strategies, which involve land-extensive, diversified agricultural production systems, have lost their efficacy due to recent changes on the demographic, institutional, environmental, and technological fronts. Poverty and resource degradation have been the consequences.

Against this dominant scenario, there are certain encouraging experiences of successful mountain area development. China has reduced poverty in several mountain areas through well-focused strategies. To share this experience and to learn from similar initiatives in other areas, this INTERNATIONAL FORUM ON DEVELOPMENT OF POOR MOUNTAIN AREAS was held in Beijing during March (22-27), 1998.

This symposium was jointly sponsored by the State Council Leading Group for Economic Development of Poor Areas, PRC, Chinese Academy of Sciences, the International Centre for Integrated Mountain Development, and the Ford Foundation, who in their respective ways are promoting efforts to alleviate poverty in poor mountain areas.

The meeting was attended by more than fifty experts from China and other

countries and focussed on a number of inter-country experiences, analysis of key issues in the diagnosis of poverty and the development of mountain development strategies in mountain areas to simultaneously meet the problems of poverty and environmental degradation.

The main objectives of this Forum were:

- (a) to facilitate documentation and exchange of anti-poverty programmes in mountain areas;
- (b) to identify the major gaps and challenges in the strategies dealing with poverty in mountain areas;
- (c) to highlight the specific problems and needs of mountain areas requiring different (mountain-oriented) development strategies; and
- (d) to explore possibilities for replicating poverty alleviation SUCCESS STORIES from mountain areas, especially from China.

The key issues covered through papers and discussions during the meeting related to the following:

- (a) General issues of poverty in the mountain areas of the developing world; the concepts, indicators of the incidence of poverty and methodologies to capture them; and broad anti-poverty programmes and their lessons.
- (b) The role of specific mountain conditions, i.e., inaccessibility, fragility, diversity, etc in making mountain poverty a difficult problem to solve through generalised development interventions designed without a MOUNTAIN PERSPECTIVE.

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(c) Synthesis of country experiences in diagnosing the poverty issues and the remedial measures.

(d) Discussions on the above interrelated, broad thematic dimensions of poverty examined questions of the following type.

i) What is specific about the nature and processes of poverty in mountain areas? Are there specific mountain conditions, needing mountain specific remedies?

ii) How do we perceive the environment-development conflicts and poverty-resource degradation linkages in mountain areas? How rich is our experience in strategies to solve them?

iii) What kind of relationship exists between mountain and market forces? Do the existing upland-lowland linkages expose the marginality of mountain people and result in over-extraction of mountain resources through market and state interventions? How much have we cared about harnessing mountain niche and diversity as part of the development strategies for mountain areas? What are the roles of women in mountain areas?

While the bulk of the presentations in the meeting focussed on mountain areas, the relevant experience of other areas, insofar as these were related to poverty and related development issues, was also presented to help derive lessons for practical application.

2. Inaugural Statements

*Address by Mr. Chen Junsheng
State Councillor, People's Republic of
China*

Mr. Chairman, Ladies, Gentlemen, and Comrades, this international conference on the development of poor mountain regions, sponsored by the Chinese Academy of Sciences, the Office of the State Council's Leading Group for Economic Development of Poor Areas of the People's Republic of China, the Ford Foundation, and the International Centre for Integrated Mountain Development has a very practical significance for China, a mountainous developing country. This conference will improve not only the international community's understanding of China's poor mountain areas but also will promote international collaboration on this issue. It is a pleasure for me to be able to attend this conference. On behalf of the Chinese government, please allow me to welcome all the delegates present here and to express my congratulations to all those who have helped to organise this conference. Now I would like to give you a brief introduction to the development of poor mountain areas and efforts that have been made by the government to alleviate poverty in China.

Mr. Chairman, China is a mountainous country. Mountain areas cover about two thirds of the country's total land territory, and counties covered by mountains account for 56 per cent of the total. One third of China's population, 40 per cent of its farmland, and most of its forest and mineral reserves are in mountain areas. These mountains are the sources of most of the major rivers of China and are also the banks for wildlife and plant genes. Mountains constitute a major ecological barrier. Most of China's national minority populations are also concentrated in

mountain areas. The economic progress of mountain areas occupies an essential position in China's overall social and economic development.

After the founding of the People's Republic in 1949, tremendous economic progress has been made in mountain areas. However, compared to plains' and hilly areas, many mountain areas are still quite backwards in terms of both social and economic development. This is due to various natural, geographical, and historical constraints. Nowadays, the bulk of China's poor population is in rural areas, and the majority of the poor rural population is in mountainous regions. There are 18 major poor areas in China, of which 16 are in mountain regions such as the Yi-Meng, Da-Bie, Qin-Ba, Wuling, Jing-Gang, Hengduan, Wu-Meng and Jiu-Wan mountain areas. Of the 699 poor counties listed by the central and provincial governments in 1986, over 500 are in mountain regions. Therefore, it is probably true to say that China's poverty problem is mainly a problem of poor mountain regions. To a large extent, the major issues regarding China's poverty alleviation centre around its mountain areas. The Chinese Government believes that alleviating and finally eliminating poverty in China are critical for the country's political stability, national unity, success of economic reforms, and the nation's long-term balanced economic development. The efforts to alleviate poverty and to bring about development in the mountain areas are therefore very important aspects in China's development strategy.

Starting from the mid-80s, the Chinese Government introduced a well-planned, nation-wide campaign to enhance economic development in poor mountain regions. First, a special agency was set up and policies for helping the poor areas formed.

To ensure the smooth implementation of programmes to help the poor areas in the nation, the Leading Group for Economic Development of Poor Areas was set up in 1986 under the State Council. Its responsibilities included the formulation of overall strategy, policies, and guiding principles for helping the poor areas and the coordination, supervision, and management of economic development activities for poor regions. Provinces, autonomous regions, prefectures, and counties involved in poor areas now have similar agencies with full-time staff. A nation-wide institutional system has been established to help the poor areas. At the same time, based on the past experience, the government has also made significant policy changes to help the poor areas. Rather than only provide relief measures to the poor regions the focus has been changed to stimulate economic development in these areas. More specifically, with necessary assistance from the State, the people of the poor areas are encouraged to undertake self-reliant development activities, accumulate resources, and be better able to develop on their own in the future. Relief funds are now provided according to the results of economic programmes rather than on a per capita basis as in the past. In the past, helping mountain areas was the job mainly of the government administration. Now more and more economic organisations are becoming involved. In the past, the provision of a relief fund was the only input to help poor areas, while at present a combination of resources, technologies, materials, and skill enhancement activities are provided to promote poor mountain areas.

Second, special funds and materials are allocated to help the poor regions. Since 1986, the government has granted numerous loans at reduced interest rates for many projects in the poor areas. At

present, the government allocates about five billion RMB *yuan* each year as a special fund to help poor regions. Various kinds of goods, such as fertilisers, plastic film, steel, timber, and trucks, are also allocated by the government each year to support the poor regions. In addition special economic policies, such as reducing or remitting the amount of grains for government purchase and reducing agricultural taxes, have been introduced in these areas. Price decontrol on agricultural products has also been introduced in these areas.

Third, efforts have been made to curb the fast growth of population and to enhance the quality of life in the poor areas. The central and local governments at various levels have formulated policies to reduce population growth. These methods have achieved remarkable results. A large-scale training programme was also launched throughout the entire nation to train farmers and cadres in underdeveloped areas, with the hope of improving their understanding of the cultural, scientific, and technological issues. Through these training programmes, cadres become more competent and learn one or two practical skills to enable themselves to make a better living.

Fourth, people from all walks of life, including government bureaucrats, have been mobilised to help the poor mountain regions. Ever since 1987, the State Council has paid great attention to encouraging the government employees and the people to help poor areas. Government agencies under the State Council have been asked to provide practical help in at least one poor mountain area or county. Eighty-two agencies under the State Council have sent working groups to poor areas throughout the county. The People's Liberation Army, the Party, mass

organisations, research institutions, and industries have all participated in this exercise. People in other provinces and autonomous regions have also followed this example.

Fifth, in order to provide improved technical assistance to the poor areas for the development of science and technology (S&T) and to increase scientific and technological inputs in the development of poor areas, the government universities and colleges have set up S & T enterprises in poor areas and provided S & T consultations to local farmers. Governments, at various levels, have sent large numbers of experienced S & T personnel to work in poor areas.

Through the continuous efforts of governments at various levels and the hard work of the people, significant social and economic progress has been made in China's poor areas and the poverty situation has been gradually alleviated. Statistics show that China's poor population in rural areas has decreased from 125 million in 1985 to 85 million in 1990, a 32 per cent reduction. Most of the farmers in poor areas have enough food and can now dress warmly, and this is a significant historical achievement for China.

The last few years have provided us with a series of experiences in the economic development of poor mountain areas and in helping poor farmers. These experiences have been important and useful. Some of these areas in which experiences have been fruitful are as follows.

First, in the last several years, the State has provided the farmers in poor areas with grain, cotton, cloth, and other kinds of industrial products valued at about five billion *yuan* RMB in exchange for their labour in building roads, bridges,

irrigation, and power-generating facilities in the poor areas and also in improving the farmland, maintaining water and soil conservation practices, and providing drinking water for both people and animals. With strong local participation, methods have proved to be very cost effective and economically beneficial.

Second, shortage of food is the most serious problem in all poor areas. To increase food supply, 335 poor mountainous counties in 17 provinces have planted hybrid maize, using plastic film to cover the land. By adopting this method, the average output of grain per *mu* increased from 150 to 200 kilogrammes. This increase in supply of foodgrain has eased the problem of food shortage in many mountain areas.

Third, greater emphasis has been placed on developing high-quality farmland. In the poor mountain regions, very little farmland is available and the yields are quite low and unstable. The State has provided special interest loans to support the building of high quality farmland through improvement in agricultural practices.

Other measures, such as afforestation, conservation of water and soil, improving the ecology, migration of farmers from areas where natural conditions are difficult for human survival, and export of labour from the poor areas, have all contributed to reducing the backward economic conditions of China's poor regions.

China's achievement in developing poor mountain areas and alleviating poverty in some of its rural areas is outstanding. However, it is still a developing country, and the task of eliminating poverty is enormous. China still has a poor population of about 80 million of which 27

million have an average annual income lower than 200 *yuan* RMB. These people still face serious problems in making a living. For almost 60 million people, their living conditions are so fragile that any major natural disaster would push them into extreme poverty. Most of these poverty-stricken populations live in Southwest and Northeast China's mountainous and desert areas. Because of social, economic, and geographic constraints, it is difficult to improve the living conditions of the people, eliminate poverty, and develop the local economies in these poor areas.

The main task for the future is to try to foster a faster pace of social and economic growth in these poor regions. In spite of the difficulties, the Chinese Government will continue to implement its anti-poverty programme in a systematic and well-coordinated manner throughout the whole country. The Government will intensify its funding efforts for anti-poverty. In the 1991-95 Eighth Five-year Plan, the State Council has given high priority to developing poor and remote mountain areas. Specific focus will be on the establishment of basic pillar industries; the development of high-quality farmland, expansion of road networks, development of water resources, promoting education, and establishing public health facilities. These are basic components of development and concern the livelihood of people in poor mountain regions; and thus need to be addressed as soon as possible. The elimination of relative poverty will remain a difficult and long-term task for China.

Mr. Chairman, China's anti-poverty activities have won support and help from other countries and international organisations. On this occasion, I would like to express our sincere thanks to those who have rendered their help. The efforts to develop mountain regions have not only

provided us with alternative approaches but have also identified new goals and tasks. Let's work together and make a new contribution to the elimination of poverty throughout the whole world.

I wish the conference complete success !
Thankyou.

*Address by Mr. Nick Menzies,
Representative, The Ford Foundation/
Beijing*

Mr. Chairman, State Councillor Chen Junsheng, Ladies and Gentlemen, I am honoured to be able to represent the Ford Foundation at this opening ceremony for the International Symposium on Poverty in Mountain Areas which has been organised jointly by the Chinese Academy of Sciences and the International Centre for Integrated Mountain Development (ICIMOD). I would like to thank the organising committee for having invited me and for having given me the opportunity to say a few words about the Foundation's approach to the question of rural development and the persistence of poverty in mountain areas.

The Ford Foundation is a non-profit organisation dedicated to promoting human welfare and the well-being of the most disadvantaged members of society. The Foundation has had the privilege of working together with the Chinese Government and people since 1988 in their struggle to eradicate poverty from those rural areas which are not able to take advantage of the country's reform and opening to the same extent as the coastal provinces and open cities. We have supported the State Council's Leading Group for the Economic Development of Poor Areas, as well as a number of research institutions with a particular interest in the alleviation of poverty, to

deepen their understanding of the nature of poverty, to develop some insight into its persistence in some areas of China, and to look for new, more effective ways to address the problem. It has been impressive over the years to see the level of dedication and commitment to this important task from a wide range of institutions, and it is a pleasure to welcome the Chinese Academy of Sciences to this group of institutions.

It is generally recognised that, since China began to formulate and to implement an explicit policy of poverty alleviation in the mid 1980s, there has been a dramatic decrease in the numbers of people identified as living below the poverty line of 200 *yuan* per capita annual income and 250 kg per capita of grain consumed. This achievement cannot be belittled and says much about the importance of a clear national commitment to the objective of eradicating poverty. The Chinese authorities have very deliberately adopted a policy of supporting long-term development efforts in impoverished regions rather than focussing on relief which is, of course, offered through the Ministry of Civil Affairs in emergencies. This strategy has been implemented chiefly in the form of loans and subsidies for agricultural inputs and support for the further development of township and rural enterprises. It is based on the premise that increased agricultural production is the most effective way to resolve the basic needs for food and clothing and that townships and rural enterprises will absorb surplus labour while creating a strong economic base for further development.

The dramatic reduction in the population living below the poverty line has brought a change in the nature of poverty in the last two years or so. Poverty, that used to be a widespread phenomenon which

responded to the kind of interventions I have just described, has become more localised, more persistent, and less responsive to general solutions focussed on increases in productivity. There are indications that the rate at which poverty is being eradicated is slowing, and some observers even suggest that there is a reversal of the trend and a new upsurge in poverty - I should stress that this is a controversial issue, however, and that the statistics do not show clearly whether there has been a slowing or a reversal of the trend. In either case, it is clear though that it is becoming harder to reach the poor, and that poverty alleviation programmes face an ever more difficult task in guaranteeing secure and sustainable livelihoods for the poor.

Whatever the specific numbers on the charts and graphs, all those working on the issue of poverty in China are agreed that the most intractable pockets of poverty in the country are to be found in the northwest and southwest of the country as well as isolated areas scattered in otherwise relatively prosperous counties and provinces. These are mostly mountainous areas, with a relatively high proportion of ethnic minorities in the population and with a long history of being among the most remote and isolated parts of the country. As in many other areas, women are taking on an increasing burden of agricultural work as men move off the farm into wage labour in rural construction or in the new township and village enterprises. The number of female-headed households is increasing, and they tend to be the poorest households in any community.

The northwest suffers from inadequate rainfall and severe soil erosion. The southwest is fragmented topographically and culturally with some thirty ethnic minorities sharing steep mountainsides,

degraded hillsides, and dry limestone valleys with the Han majority. Poverty alleviation efforts in these areas will not succeed unless they recognise the special characteristics of the land and the people and are designed to address the specific constraints on development imposed by their physical, social, and economic geography. Uniform programmes to increase production of a limited range of grains, or to promote the development of rural industries unrelated to regional or wider markets, will not work.

This meeting comes then at a critical moment in the formulation of China's strategies for poverty alleviation. It is generally recognised that programmes must shift towards carefully targetted interventions designed to reach the most impoverished groups within society. A glance at the press reports of debates in the National People's Congress currently in session indicates the level of concern throughout Chinese society for the future of agriculture and the increasing recognition that the transformation of rural China depends not only on improved harvests, but also on investments in human capital through education, health, and a greater concern for the environment. These concerns are vital in any rural area. They are even more so in the poorest mountainous regions where the present is made precarious by lack of access to information, where health is constantly threatened and care often unavailable, and where environmental degradation can become devastatingly real as floods or landslides wash away the land, the very basis of farmers' survival.

It is rare that such a distinguished group of experienced scholars and development workers has an opportunity to meet to exchange views on how to address poverty in mountainous areas. I am particularly

pleased that it has been possible to bring together people with a profound understanding of the processes of rural development and of rural poverty with distinguished specialists in the field of mountain development. The different perspectives each participant will bring to the proceedings should ensure that the group discussions will be both stimulating and rewarding. Nobody expects a meeting such as this to conclude with a simple plan of action to eradicate poverty in mountain areas, but by prompting clearer thinking about the opportunities and challenges of the task, I am confident that the direction and the path to be taken will be identified much more clearly than they had been before.

I would like to close my remarks by thanking all those who have dedicated so much of their time over the last year and a half to make this symposium possible. Our hosts, the Chinese Academy of Sciences, have spared no effort in contacting all the participants and coordinating with the various committees to select participants and finalise the agenda. The staff at ICIMOD in Kathmandu has been exceptionally helpful in offering advice and assistance with the logistics and in developing an ambitious but workable programme. We are especially privileged to have the support of the State Council Leading Group on the Economic Development of Poor Areas and State Councillor Chen Junsheng, which will ensure that the discussions at this seminar will be listened to by those directly responsible for defining China's poverty alleviation strategies. Finally, I would like to thank everyone here for having taken the time to attend this meeting and to repeat that the Ford Foundation is honoured to have had the chance to help make such a gathering possible.

3. The Workshop Presentations and Discussions

Overall Poverty and Mountain Development Issues

Part two of this volume brings together the papers that addressed poverty and mountain development issues from the perspectives and experiences of other parts of the world. One of the important objectives of the seminar was to put before Chinese policy-makers and scholars the experiences of other areas with poverty eradication in general and mountain development in particular. It was believed that a comparative review of poverty-related efforts across the region, and even continents, would yield valuable insights for more effective poverty-alleviation measures. The papers presented cover a wide range of areas and efforts, reflecting the enormous diversity of the problem of poverty and mountain development, depending upon the nature of the environment, socioeconomic conditions, and institutional frameworks.

The paper by **Jack Ives** briefly touches upon many different aspects of mountain development. Starting out with a caveat that generalisations are very misleading for mountain areas, a number of points has been made. There is a continuing failure to understand the complexity of mountain areas, both in time and space. Eurocentric views and experiences have been uncritically applied with very little success in introducing meaningful changes. Sustainable development of mountain areas requires a far better understanding of the ongoing biophysical and socioeconomic changes in mountain areas. UNCED Agenda 21, Chapter 13, focusses on mountain areas and this is a major opportunity to work together to mobilise global efforts and resources for the development of mountain areas.

The paper by **N. S. Jodha** highlights the thinking and reflects the nature of ongoing activities for mountain areas at ICIMOD and particularly in the Mountain Farming Systems' Programme. Jodha argues that mountain areas share many characteristics with non-mountain areas that are responsible for perpetuating poverty and hampering efforts to overcome poverty, but these are relatively more severe in mountain areas. Mountain communities adjusted to these conditions through a wide range of lifestyles, agricultural practices, technologies, and socioeconomic organisations in the past. Most of the development thinking and machinery, including development programmes, have not recognised these mountain conditions, limitations, and adaptations of the mountain people. Efforts to build upon local achievements have been lacking and are therefore a major source of weakness in current development programmes in mountain areas. Future development should examine this aspect more carefully and use what is called a mountain perspective framework to determine the nature of appropriate development interventions in mountain areas.

Sharma and Partap discuss the highly interrelated nature of population, poverty, and development in the Hindu Kush-Himalayan mountains. They present some concrete facts on demographic changes in mountain areas. Given the very adverse physical and economic conditions encountered in mountain areas, it is pointed out that greater poverty is a geographical feature of most mountain areas. According to the paper, the demographic scenario in the mountain areas clearly indicates a rapid increase in population pressures and these are for almost similar reasons to those identified for the plains. The economic demographic relationships for mountain areas,

however, appear to be more bleak because of the weaker economic base of mountain areas. Many of the development interventions have not satisfactorily addressed the imperatives of rapid population growth, and consequently the efforts made appear to be relatively ineffective on all major fronts - the demographic, the economic, and the environmental. The adverse conditions are further exacerbated by continued poverty in mountain areas. The important measures recommended for the future include more policy and programme sensitivity to local problems, harnessing opportunities in specific areas, encouraging planned migration, and the development of urban centres.

Bandopadhyaya argues that the present misery and poverty of the people of the Himalayas and the degraded mountain environment do not have a direct and unique correlation. Neither is it correct to visualise that the Himalayan ecosystem has exhausted all options for improving the economic condition of the Himalayan people. It is undoubtedly true that, in most parts of the Himalayas, many live in great misery compared to the standard of living in the neighbouring plains. In the past few decades, accessibility into the interior of the Himalayas has increased by the opening of roads and some air routes. This is surely going to multiply the scope of economic activities and utilisation of rich natural resources. However, no institutional reorganisation has accompanied this increased accessibility. The economic processes may, thus, become insensitive to their ecological impacts and cause further ecological and economic degradation. If this has to be reversed, if economic upliftment of the mountain people is to be ensured, and if the rich natural resources are to be managed on a sustainable basis, new institutional measures are needed.

Vineeta Hoon raises similar issues regarding mountain characteristics and emphasises that mountain areas are very distinct from other areas and that there is a need for better understanding of the critical characteristics of mountain areas for more effective poverty reduction. Mountain areas are very fragmented over space and time, giving a wide range of biological and cultural diversity. Survival strategies have focussed on developing strong linkages between different ecozones, as indicated from transhumance and migration practices throughout most mountain areas. Steep slopes, limited topsoil, and short growing seasons result in relatively low levels of land capability, while the rugged terrain of mountain areas limits the development of vital infrastructure. In response to these difficulties, mountain people have developed a strong degree of self-reliance and community spirit in their socioeconomic activities. Many of these characteristics have been overlooked by modern development programmes, reducing their effectiveness. Incorporating these aspects through careful assessment of mountain characteristics would lead to better programme design and implementation. New approaches should focus on understanding the different linkages (physical, biological, socioeconomic, cultural, and institutional) and promote participatory and integrated watershed management approaches in order to reduce poverty in mountain areas.

Christoph Stadel's paper deals with the geographical development scenario of the tropical Andes in terms of the complex environmental conditions as well as in terms of the human factors and cultural landscapes. The reporting is on the research which was based on field investigations carried out in the central Sierra region of Ecuador as well as in the northern Altiplano and the eastern

Cordillera region of Bolivia. In the identification of constraints and development problems in the rural regions, the perceptions of the "Campesinos" were emphasised. It is argued that the perceptions of the local population ought to be the foundation for the identification of the problems, needs, and priorities of a region and for sustainable development priorities. There is also widespread recognition among development practitioners that, in any kind of sustainable development, the mobilisation and utilisation of local natural and human resources are crucial. This approach requires a change of attitudes in the direction of giving the local populations a full share in participation, responsibilities, control, and benefits from development initiatives.

Yosuke, Kanji, and Minjin point out the increasing depopulation of rural hill areas because of the limited agricultural land, lack of infrastructure, and difficulties in harnessing improved agricultural technologies. Changes in energy use from wood and charcoal to other forms have also adversely affected incomes from the forests of mountain areas. Reduced income and employment opportunities in villages of hilly and mountain areas of Japan have increased depopulation of these areas. New opportunities for mountain people should focus on promoting recreation-based activities that promote the preservation of natural resources in mountain areas.

Barbara Harris presents some of the general conclusions emerging from a review of many studies on poverty in India and suggests that some of these may provide useful guidelines for poverty studies and poverty-reduction programmes in China. The paper presents the findings regarding the measurement and use of various poverty indicators such as assets,

income, expenditure, mortality, morbidity, malnutrition, vulnerability, autonomy, and entitlement. Some of these indicators are very difficult to quantify and a comprehensive understanding of poverty will require using many of these and many more. The types of indicator needed are determined by the specific nature of the particular area, its biophysical environment, prevalent diseases, market conditions, and the existing socio-institutional set up.

Bajracharya starts by pointing out that close to one-tenth of the world's population lives in the fragile mountains -- most of them, the poorest on earth and neglected victims of environmental degradation, whose livelihood has been threatened in the most serious way. The worst manifestation of this sad state is evident in the very high rates of mortality among infants, children, and mothers. Malnutrition is another serious problem as indicated by a large percentage of children under five whose weight for their age is lower than normal. Access to safe water and adequate sanitation is furthermore limited to only a small number of people. Literacy among adults and school enrollment among children are similarly extremely low.

There is a direct dependence of the people in the mountains on the state of the environment for the maintenance of their livelihood. Clearly, the principal environmental concerns consist of the ever-present threat of disease in the immediate surroundings; the decline in household food security, often related to inadequacies of agricultural practices and loss of fertility in their fields; and the lack of clean water and safe sanitation. Accelerating soil erosion and landslides, as well as rapid loss of habitat and genetic diversity, have become ever more threatening to the sustenance of their livelihood. Alternative opportunities for

better livelihood must be found. The importance of people's participation and empowerment for achieving sustainable change cannot be overemphasised.

Bennet highlights the experiences of some countries over the past 10 years regarding financial services' programmes for women and the poor. Many promising agricultural technologies require investments from the farms and increasing opportunities for agro-based micro enterprises also need responsive financial service systems. Providing credit to the poor has been successful in a few cases, but many programmes have failed. Examining both the successes and failures, the important lesson emerging is that it is essential that formal financial intermediation should follow and not precede social intermediation through groups.

Varghese raises some basic questions about development approaches that are relevant for mountain development. She distinguishes between 'genuine' sustainable development (SD) and 'mainstream' sustainable development. Most professional NGOs are committed to mainstream SD which is defined as a concern for establishing ecologically viable models of development without necessarily paying much attention to whether these models are equitable in terms of their class and gender implications. In contrast, genuine SD tries to ensure that models of development also focus attention on redressing gender and class inequalities.

By examining conditions in two *talukas* in the Bharuch District of Gujarat, she describes how the sustainability of the traditional system broke down under social, political, and economic pressures. It looks at efforts made in local development both by the government and those undertaken by an NGO (AKRSP). These development projects have reversed

the ecological degradation and can be considered to be reasonably sustainable in terms of natural resource conditions. However, issues of gender inequality are not addressed and, to some extent, the project's success is precisely because of the neglect of gender issues. However, in order to deal with basic issues of gender and equality, the project would have to begin addressing the prevailing social, economic, political, and cultural issues that are not as easily managed as mobilising for infrastructural development or afforestation. The paper concludes that mainstream sustainable development projects can address practical and immediate development problems but do not address the underlying process (strategic issues) behind these problems.

The Experience of China

The Chinese experience in dealing with poverty and mountain development issues has perhaps been one of the most extensive, both in terms of the spatial coverage and in terms of the variety of approaches that has been pursued. An important objective of the Forum was to share and discuss this experience with and among the Chinese as well as international participants. The Chinese experience, particularly after the economic reforms of 1978, is of great relevance to other mountain areas, as are other international experiences to China.

Part three of this volume brings together the papers presented by Chinese scholars on a variety of themes related to poverty and mountain development. We have grouped the papers into four broad themes: (a) Poverty Classification, (b) Poverty, Development Policy, and Strategy, (c) Approaches to Poverty Alleviation: Area Development and Natural Resources' Management, and (d)

Approaches to Poverty Alleviation: Sectoral and Institutional Development. However, and perhaps this is only to be expected, there is considerable overlap in terms of the key conceptual policy and programme concerns.

Since the Seventh Five-year Plan, when the Chinese government officially designated 664 counties as "poor", considerable interest has been generated on the issue of spatial classification of poor areas in China. This interest is reflected in two papers on the first theme of poverty classification.

Xiao Youen et al. attempt to define poor areas on the basis of an objective criterion. They take the county as the smallest appropriate unit in the spatial definition of poor areas and develop a classification based on the three principles of homogeneity in natural conditions, commonality in the structures of consumption, and the integrity of administrative units. Cluster analysis is used to reclassify China's 18 poor areas into three broad classes. A number of indicators reflecting levels of rural production, industrial structure, and income are then used to evaluate a statistical model which provides the parameters to categorise degrees of poverty. Using this criterion and data for 297 poor counties supported by national special purpose loan schemes, the authors show that the rate of coincidence between poor counties, as defined by the objective criterion and as designated by the Government, is 99 per cent.

The second paper by **Jiang Dehua** is more descriptive in nature. Counties are classified in terms of the similarity of physical, social, and economic conditions; the nature of obstacles to economic development; and the perception of the State in terms of policies pursued.

Almost all of the poor areas are hilly and mountainous. A total of six major spatial patterns of poverty areas (namely; (i) the Loess Plateau, (ii) the Border Area between the Eastern Plains and Western mountains, (iii) the Karst mountains of SW China, (iv) the Hills and Mountains of Eastern China, (v) the the Qinghai-Tibetan Plateau, and (vi) Inner Mongolian-Xing Jiang Dry Areas) and 21 sub-patterns are recognised. The factors contributing to poverty and the general development priorities deemed necessary to deal with poverty are then discussed with respect to each of the six pattern and respective sub-pattern areas. The basic argument is to maximise the comparative advantage afforded by diverse mountain conditions.

Policy and strategy issues in dealing with poverty in the Chinese mountains is a theme explored by the second group of papers. The papers range in terms of argument, depth, and empirical base, but the major thrust is abundantly clear, that is, the historical neglect of mountain areas should no longer be allowed to continue because mountain development will not only have a direct bearing on poverty alleviation but also can significantly complement and contribute to China's overall development.

Xiang Nan argues that the major focus of poverty alleviation programmes in China should be on 11 of the 18 designated poor regions situated in western and central-western China. A comprehensive strategy of government, economic, and cultural reforms is called for with emphasis on birth control, efficient and effective use of financial resources, and science and technology. Poor mountain areas of western China have great potentials, and a developed west will benefit both eastern and central China.

Shi Shan's paper posits that the traditional perception, based as it was on foodgrain production, neglected the mountains because these were considered burdens to the national economy. The tremendous potentials of mountain areas are elucidated, and it is argued that these potentials can be exploited only through a comprehensive strategy of planned economic development. Recent policy changes provide a favourable environment for dealing with poverty issues in the mountains.

Ai Yunhang characterises poor mountain areas as resource rich but with poor infrastructure, diverse economies, low level of education, and high population growth rates. The liberal policies pursued by the government since 1979 have many positive features that can motivate development in mountain areas. The major thrust in the future should be towards improving self-sufficiency in foodgrains, diversifying the economy, developing the commodity economy, expanding the service system, manpower development, developing economic links with the outside world, and strengthening leadership at county and local levels.

Yan Ruizheng evaluates the existing economic policies of the Government and concludes that, in spite of efforts made in the past, there are still serious problems in the development of poor mountain areas. Impoverishment and malnutrition are common. The actual population below poverty level far exceeds official figures, and the gap between poor and developed districts has been widening. He argues that the burden of environmental deterioration in mountain areas is a toll exacted in the development of the national economy. The high cost of environmental improvement in mountain areas should therefore be logically borne by the more developed plains' areas, and mountain

development should not be perceived as charity. Policies that need revision for the benefit of mountain areas are suggested. These include changes in government purchases under the planning framework; establishment of special funds for environmental conservation in mountain areas; and preferential revenue, pricing, and tax systems.

Chen Guojie discusses a number of apparent contradictions in the development of poor mountain areas and points out that the increased pace of development could itself exacerbate environmental problems. Also, market reform has meant that mountain products have to face increased competition. Based on past experience, he suggests that the emphasis in mountain development should be on market-oriented products that provide comparative advantages. Efforts need to be made in combining short-term programmes with long-term goals and in the effective mobilisation and efficient utilisation of investment funds.

Dai Sirui presents the theoretical conditions under which internal economic accumulation can increase in mountain areas. He shows that the conventional development dice is loaded against mountain areas, resulting in low levels of internal accumulation and, therefore, investment. While there is a need for the government to adopt preferential policies in mountain areas, these policies by themselves will not yield results unless an accumulation mechanism is set in motion that can absorb and drive internal reinvestment. He suggests that labour exports from the mountains can play a key role in enlarging the source of internal savings and accumulation in mountain areas.

Gao Guan elucidates, through the cases of poor villages in Xing Yuan county in

Shandong province, that developed villages have an industrial/occupational structure that is less dependent on agriculture and that industrial development plays a key role in poverty alleviation. Industrial growth in the mountains is inhibited by the lack of infrastructure, manpower, and investment.

Policy focus should therefore be on the promotion of agro-based industries that have comparative advantages in the mountains.

The last three papers in this group are concerned with development problems in mountain areas and ensuing policy imperatives. **Benlin Wang**, in a case study of Chaoyang mountainous area in West Liaoning, shows that rapid population growth, low level of literacy, infrastructure, and investment are problems that need priority attention. **Ma Hongyang** argues that both internal and external factors have contributed to poverty in the mountains. In the mountain context of economic development, comprehensive utilisation of natural resources and environmental safeguards must be considered as a social package. In addition to other problems, the impediments to the development of a commodity economy should be removed. In this context the need to ease the marketing bottlenecks through the promotion of market towns is highlighted. **Shi Yulin** shows that the mountainous areas of tropical and sub-tropical China deserve priority emphasis in mountain development, as these areas are richly endowed with resources. The persistence of monoculture has remained one of the main reasons for the underdevelopment of the mountain areas. While agriculture in the valleys needs to be intensified, agricultural diversification with a view to erosion control needs to be emphasised on slope lands.

The third theme, that is, Approaches to Poverty Alleviation in China: Area Development and Natural Resources' Management, is covered by about 10 papers that elucidate a variety of approaches from diverse mountain areas of China. The area-based rural development approach, the watershed management approach, the ecological engineering approach, and an overt focus on science and technology are some of the approaches highlighted by the papers. However, a common thread runs through all successful efforts: mobilisation, use, and participation of local institutions and people.

Li Guiseng describes the biophysical characteristics of the Yan Shan mountains in eastern China and argues that the fragile ecology must be an important consideration in poverty alleviation. Development of small livestock, promotion of the homeyard economy, and establishment of village enterprises should therefore be intrinsic elements of rural development.

The paper by **Menzies** introduces the Rural Poverty and Resources' Programme of the Ford Foundation in China. In addition to enhancing the capacity to analyse poverty and provide the basis for the formulation of more effective policies at different levels, the programme also supported village-level activities to test new approaches to the alleviation of poverty. The Yunnan Uplands Management Programme, under implementation since 1990 through a consortium of government agencies and research institutions, is an innovative attempt at area development and natural resources' management.

The **Project Leading Group**, the provincial arm of the Leading Group for the Economic Development of Poor Areas at the central level, provides an assessment of the Ford-supported Yunnan

project. A major departure of the project from conventional approaches was to rely on a "bottom - up" and "from rural household to rural household" approaches. The programme, which is being implemented in some of the poorest regions, relies heavily on participatory methods of investigation and activity planning, on-the-spot demonstration and large-scale training for rural households, and a more decentralised and accountable system of decision-making. The programme has made some significant achievements. The issues of coordination, of a better understanding of the perceptions of rural households, and, above all, participation of women, however, deserve further attention.

Li Tianchi and Yang Wenke, in their paper, elucidate a watershed management approach to poverty alleviation in the context of the Xiaojiang drainage area in Yunnan where deforestation, landslides, and debris flow had resulted in loss of farmland, damage to infrastructure, and impoverishment of the population. Detailed studies on the mechanisms of landslides and debris flows were undertaken. Integrated watershed management projects with reforestation, construction of flow direction dikes, and construction of drainage ditches and checkdams as the major components were undertaken between 1975 and 1990. The socioeconomic and ecological benefits included increase in grain output, rehabilitation of degraded slope lands, and reclamation of wasteland on the lower slopes. This provides an example of how a properly conceived and executed watershed management approach can directly impact on poverty.

The Wangdonggou watershed in the Loess Plateau is known for the seriousness of the soil erosion problem and consequent land degradation, low agricultural production,

low levels of income, and pervasive poverty. In his paper, **Li Yushan** describes the results of the Loess Plateau Comprehensive Management and Agricultural Development Project initiated under the Seventh Five Year Plan. The aim of land development in the Wangdonggou watershed was to enhance productivity and prevent land degradation. The model combines land classification and use with necessary infrastructural development to increase grain yield, develop low class lands and gully slopes, and promote resource conservation as well as the prevention of soil and water loss. The results of the project indicate that the Wangdonggou model provides very effective land management and sustained agricultural development.

Since watershed management appears as one viable way of dealing with poverty, **Wang Lixian et al.** describe the methods through which the quality and efficiency of the information needed for watershed level planning can be enhanced. The structure of a computer-based information data base and its functional characteristics in the planning process are discussed.

Ecological engineering is an innovative and promising approach to promoting complementary economic and ecological benefits in mountain areas and, therefore, in alleviating poverty. **Yun Zhengming et al.** describe the philosophy and approach of ecological engineering in a project in the Taihang mountains that has been under implementation since 1986. Although ecological engineering relates to afforestation, there is a fundamental difference between the two. Traditional afforestation attempts to build an artificial plant community while ecological engineering attempts to build an artificial ecosystem. This approach, first advanced and implemented in the Taihang

mountains, is based on differentiation and appraisal engineering of the environment, water and soil accumulation engineering, selection and matching of different populations, time-rhythm engineering, and food-chain engineering. These methods are being experimented on in the Ecological Experiment Station in the Taihang mountains. The results thus far show that this approach is not only responsive to mountain conditions but is also oriented towards poverty alleviation, is cost-effective, and environmentally friendly.

The role of science and technology, although implicit in most of the approaches, is brought out clearly in the paper by **Xu Haiguang et al.** in the case study of the Jun Cheng villages in Tang county, Hebei province. The programme, jointly carried out by the University of Agriculture and the department of agriculture of the county was based on an intensive investigation of the biophysical and socioeconomic conditions. Based on the analysis, improved varieties of wheat, corn, rice, and vegetables were introduced and plantation techniques popularised. Since drought was often the major problem, crop selection and plantation under drought conditions were emphasised. Fruit farming was promoted on sloping lands. Service stations were established for the propagation of new techniques, provision of inputs, and monitoring of activities. Although many problems still remain, the application of science and technology has contributed to a better economy.

Wen Dazhong exemplifies the role of technical assistance in mountain development in a case study of Kazhuo County, Western Liaoning, in the Nuluerhu mountains. This county has been the beneficiary of technical assistance from the Chinese Academy of Science. The

basic objective of the assistance was to develop the local resource potential, improve the ecology, and enhance the capability of developing a commodity economy. A regional development strategy was first worked out consistent with the basic objectives of the assistance. A number of technical studies was conducted and a number of demonstration projects implemented. These focussed on increasing grain productivity and maintenance of the ecological balance. The project objectives over the last 10 years have more or less been achieved. A major lesson from the project was that that it is much more important to give effective technical assistance to increase the self-development capacities of rural mountain communities than financial and material support.

Wang Zhengguo et al. describe the Mountainous Region Development Programme in Hebei province. The approach in the programme has been to look at agriculture, horticulture, animal husbandry, and agro-processing as an integrated development package. Use of natural resources, poverty alleviation, and prevention of natural disaster were taken as the three principles of mountain management. The programme combined projects with short-term and long-term benefits and developed a system of experimental plots, extension, and training which was in tune with the realities of the mountains.

The fourth and final group of papers presented by Chinese scholars relate to agricultural and industrial development approaches, comprehensive and integrated development approaches, and institutional issues with implications for poverty alleviation.

In the context of shortages of grain in the poor mountain areas of China, **Zheng**

Dahao, through the application of a production function model, highlights the potentialities and economic benefits of various production systems in the mountains. He shows that the strategy for the development of mountain agriculture has to be based on increasing crop yields per unit of land and simultaneously diverting marginal farmland from cultivation to forestry. A number of policy suggestions are then made for agricultural development in poor mountain areas.

Strategies to increase grain production in the Wulin mountains are discussed by **Hu Guowen et al.** The factors responsible for limiting spring crops in the area included a deteriorating ecology and natural disasters, which made traditional planting practices unreliable. In order to deal with this problem, a "harvesting programme" was introduced with the support of the Chinese Academy of Agricultural Sciences. New seedling and harvesting methods were promoted to avoid the effects of low temperatures as well as other natural disasters. At the same time more effective institutional arrangements were also introduced in tune with economic policy reforms.

The move from poverty and resource degradation to sustainable development is the crux of integrated mountain development. **Liu Yanhua et al.** present a detailed case study of Ningnan County in Sichuan Province and analyse the transformation of a remote, poor county from poverty to relative prosperity. Ningnan County's success in the transformation of its economy was mainly due to the fact that the policies pursued were responsive to mountain specificities, i.e., the imperatives of inaccessibility, fragility, diversity, marginality, and 'niche' or comparative advantage. Policy reforms in the late seventies and eighties allowed for the much-needed flexibility in adjusting

policies to concrete local resource situations. Promotion of science and technology not only helped to increase productivity but also made the move from agriculture to agro-processing possible. Infrastructural developments contributed to the strengthening of local/regional production as well as marketing linkages. Policy reform, however, also had its own share of problems, the most notable was the general neglect in the collective maintenance of community infrastructure. Ningnan, which was predominantly a grain-producing county in the past, now specialises in the production of sugarcane, mulberry, and tung oil, as well as tobacco and subtropical fruits in addition to cereal crops. The agro-processing industrial base has also been strengthened. These developments have directly contributed to poverty alleviation.

The Ningnan experience suggests that any poverty alleviation-cum-development strategy should be local resource centred. Foodgrain self-sufficiency needs to be complemented by the promotion of agro-based industries with comparative advantages. Application of science and technology to suit local situations; complementary infrastructural growth and extension; and collective effort and rational leadership are some of the lessons emerging from the experience of Ningnan.

An industrial development approach to mountain development is presented in the paper by **Zhu Kaihua et al.** in a study of the Daibieshan mountain area. The Daibieshan area has considerable industrial potential in the production and processing of tea, silk yarn, cultivated mushrooms, and white geese. It is suggested that, for speedy development, the management system has to be reformed, basic infrastructure is needed, and the complementarity between industries has to be strengthened.

Zhou Zhixiong et al. discuss the problem of the selection of an appropriate industrial structure model for mountain areas. They maintain that industrialisation in the mountains should be based on the comparative advantages of resources, advantages of insularity, climatic conditions, and cheap labour. The first model of industrial development in the mountains is based on mineral resource extraction and processing. The second model is based on environmental regeneration and planting. However, given commensurate developments in infrastructure and investment, the authors opine that it is the second model that is more appropriate for mountain areas.

The last two papers in this group relate to the institutional aspects of dealing with poverty in the Chinese context. **Wu Guoban** discusses the usefulness of township and village cadres who are the ones required to take the lead in implementing programmes to alleviate poverty. He shows that, following policy reforms, the township and village cadres no longer wield as much influence as they used to in the past, although their role is still quite important. The function of cadres is to maximise the task accomplishment index as well as economic and social development and ensure the chances of promotion. In reality, however, the cadres tend to attend to tasks assigned by higher ups which may not always be consistent with local needs. It is, therefore, necessary to assign a higher weight to the indicators of local economic development if the cadres are to be motivated to facilitate local development work, including work related to poverty alleviation.

Liu Wenpu looks at the efficacy and effectiveness of village organisations through a case study in Shaanxi Province. He shows that, following reforms, village organisations no longer play a pivotal role

in the organisation and distribution of production in the collective economy. This function has now been given to the household. Village organisations now have been transformed into autonomous village committees, but they are still important as the base of rural power structure. In the past there was an actual cadre class. Now cadres are more concerned about their household economy because they cannot rely on allowances provided by the State. Village organisation has become more autonomous. Cadres no longer function as agents of the State and, in fact, tend often to side with farmers in instances of conflict between policy and farmers' interests. While this may be a positive change in some respects, it nonetheless hinders the implementation of government policies at village and household levels.

Group Discussions and Presentations

Following the presentation of papers, participants were grouped to discuss specific issues raised by different authors. The first group focussed on poverty in the mountains and its specific remedies. The second group discussed the conflicts between environment and development in mountain areas and the third group examined the issue of Market Driven Transformation and Processes and the Mountains.

(a) Poverty in the Mountains and its Specific Remedies. In order to understand the specific dimensions of poverty, there is a need for a clear definition of poverty. In the case of mountain areas there are two aspects that appear to be important. First is the question of access to food, clothes, shelter, and, in general, to a better quality of life. Second are the issues of security, vulnerability, dependability, and the nature of choices and options that are available

for improving critical aspects of the quality of life. Efforts must be made to carefully develop the understanding of these components through scientific measurements and monitoring over time. At the present work in this direction is very limited.

Poverty experienced and observed in mountain areas differs from what has been seen in non-mountainous areas in terms of security and options and the processes responsible for this.

The experience of China in poverty eradication is unique, with its strong initial focus on providing food, clothes, and shelter for all the people. This was followed by identification of poverty pockets requiring special focus. In general, strong efforts were made to address directly poverty-generating factors such as the distribution of the resource base and its productive utilisation. China, over the years, has made one of the most impressive gains in the battle against poverty and, despite these significant achievements, mountain areas still remain one of the poorest in the country. Recently, increased attention has been directed towards mountain areas. While the pre-1978 efforts focussed on providing only relief support to mountain areas without addressing the fundamental factors behind the poverty of mountain areas, the post 1978 period concentrated on enhancing productivity. The full impact of these efforts is being seen slowly and local capabilities to sustain rapid economic expansion have become fairly apparent. The special roles played by the Leading Group in this war against poverty have been very significant and will remain important in the future also.

The experience of India in terms of the approaches used and the results achieved so far is very instructive. Absolute poverty is greater in India than in China. Analysis of Indian poverty has provided insights into the role of policies. Anti-poverty strategy in India has also moved from a disaster-relief programme to the use of comprehensive, integrated rural development approaches. In spite of the very strong commitment of the Government to providing services for the poor, there are numerous leakages in the delivery systems that have prevented a greater flow of resources to poorer groups. The poorer groups still remain very vulnerable to manipulation and control by more powerful interest groups.

Despite greater absolute poverty in India, the people in the mountain areas appear to be relatively better off in India than in China. Reasons for this appear to be better linkages between the mountains and the plains, stronger local capabilities, and greater diversification of economic activities.

Based upon discussions on the experience of India, China, and other areas, regarding poverty eradication, the group emphasised the following:

- i) building local capabilities in terms of skills, bargaining, management, etc for both individuals and institutions;
- ii) promoting stronger upland-lowland linkages (physical, market, and others) - for moving development beyond food self sufficiency and basing it on comparative advantage;

- iii) closer monitoring of poverty in order to provide guidelines for improving the effectiveness of different policies and programmes; and

- iv) to be alert about the possible negative role of the market so that mountain people are not exploited and the mountain environment is not degraded in the name of development.

- (b) Environment Development Conflicts in Mountain Areas. It became quickly apparent in the workshop that there were quite wide differences in experience and intellectual approach to mountain problems, even to the point of different definitions for key terms. The workshop also highlighted a number of case studies of successful mountain development projects that were presented by Chinese scholars and planners.

Mountain poverty and the environmental linkages facing China were so vast and complex that firm conclusions and specific policy, or strategy, recommendations were very difficult without referring to specific problems or areas. Nevertheless, there was consensus on a number of important generalisations that could contribute to the success of this international forum by enhancing its usefulness for the mountain areas of China.

First, it was agreed that there is an urgent need to recognise that a special Mountain Perspective is justified and is required for the success of any national or regional policy aimed at breaking the poverty-environmental degradation circle of mountain regions. This perspective, or

viewpoint, is based upon the fundamental geographical factors of the mountain regions: relative isolation (this is an accessibility question); steep slopes, great range of altitude, poor and unstable soils, and an infinite variety of micro-environments. These represent the biophysical characteristics. There are also other factors such as ethnic and cultural diversity, history of human adaptations in mountain environments, and extent of separation of specific communities from the mainstream of national life and economic development processes. It was recognised that, in many parts of the world, mountain development projects have failed, or have fallen short of objectives, because these characteristics were not considered.

It was recommended that, to break the vicious circle of poverty-mountain environmental degradation, a special "law" of development for the mountains must be developed. Mountain regions and mountain people had many positive attributes - generations of accumulated, indigenous environmental knowledge; rich biological and cultural diversity and richness; and hydro-electric power potential, among others. These attributes had to be recognised and incorporated as part of any development strategy. At the same time, they were attributes that must be protected: the biophysical and cultural diversities of mountain regions were vulnerable to rapid degradation if not recognised and protected at all levels. They could add greatly to the prospects for poverty eradication and sustainable development. It was recommended that the relevant principles, enunciated in Agenda 21, Chapter 13

of UNCED, be adopted in this context.

It was recognised that there was a critically important gender issue. Numerous examples were available throughout the mountain development world whereby projects of good intention and considerable sensitivity unwittingly increased the burden carried by women, thereby putting at risk the sustainability of the specific project. More than half the mountain farmers were women. In many mountain societies, women undertook more work than men without taking into account the additional domestic tasks and the burden of child-bearing and child care. Off-farm wage opportunities frequently isolated the wife as the effective single head of the household. It was recommended, therefore, that the role of women be fully assessed and the potential effects of any development strategy on the well-being of women be evaluated prior to the implementation of development activities. It was essential to ascertain the perspectives and values of women in development strategies and to support these with concrete programmes.

Following these general points and recommendations, some more specific suggestions were proposed.

- (1) Two types of development strategy should be recognised.
 - (a) Development for the short-term production needs of farmers in mountain regions (especially provision of minimum food, clothing, and shelter - the basic needs).

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- (b) Development for long-term objectives; these would usually entail large-scale construction (roads, muring, hydro-electric development, and reforestation) and should be set up in such a way as to provide benefits to the local people as well as to meet national priorities. There would be the added need for compromise and conflict reduction. This relates to the stated need for a "law-of-the mountains".
- (2) Unremitting efforts should be made internationally to reduce and eventually eliminate all forms of warfare which today were still heavily concentrated in mountain border regions. This included not only conventional warfare, but also civil strife, border tensions, and maintenance of heavy military presences in culturally and environmentally fragile mountain border regions. Measures to curtail the illicit drug trade should be undertaken.
- (3) Further development of environmental and cultural impact assessments was recommended.
- (4) Because of the stated extreme complexity of the mountain habitat, more research was needed into the natural and human sciences in mountain areas.
- (5) An international endeavour was needed to accelerate the transfer of knowledge and experience derived from increased mountain research and from local and regional developments. This would follow the recommendations of UNCED Agenda 21, Chapter 13.
- (6) Considerations should be given, where appropriate, to the establishment of international or joint national borders, parks, and reserves (parks for peace and environmental sustainability). Such parks in regions traditionally used by mountain communities should have management policies that were advantageous to the indigenous mountain communities.
- (7) While there had been great progress in the reduction of poverty in mountain regions, as demonstrated by the Government and the Peoples' Republic of China, the fact was that there still remained widespread poverty in mountain areas of the PRC and elsewhere. Therefore, it was recommended that such an International Forum on Development of Poor Mountain Areas be repeated at two-or three-year intervals to share and exchange relevant experiences and interventions.
- (c) Market-driven Transformation Processes and the Mountains. The main focus of the discussion was on the question of "marginality" of mountain areas and people. This is a term which has confusing implications, especially when translated from English to Chinese. The first part of the discussion was, therefore, devoted to what the term meant. There was broad agreement that the process of

marginalisation had three principal elements.

- (1) **Politically** it implies that the people who are marginalised are deprived of any control in the decision-making process. Decisions are imposed upon them, irrespective of their good intentions or bad intentions.
- (2) **Economically** it implies that the benefits mostly accrue to those who impose the decisions and those who are marginalised have little or no part in the process of bargaining.
- (3) **Socioculturally** it implies that the position in society of a minority, or poor person, more often than not, excludes them from the possibility of having a say in political or economic decisions.

The general impressions about markets, as conveyed by the participants from China, were that the market economy was perceived more optimistically as a necessary condition for economic growth and that the benefits outweighed the adverse effects, at least initially. On the other hand, the participants from outside China were more wary of the market economy, especially in the light of the distortions in the market that make the poor and the vulnerable the ultimate losers. This had happened in the past on account of the emergence of local monopoly; the predominance of interlocking contracts; the tendency towards greater indebtedness, caused by forced/covered commercialisation; the absence of compensation for adverse effects caused by long lags in the course of payment transactions; and the prevalence of fraudulent and criminal behaviour.

Regarding the evidence from mountain areas concerning the beneficial as well as adverse effects of the market economy and the measures that would help mountain areas take advantage of the opportunities presented by the market economy and, at the same time, protect the vulnerables, a number of points was raised.

Regarding the beneficial effects of the market economy, the following points were raised.

- Constraints to diversified use of local resources are overcome.
- Greater efficiency in production activities.
- Migration to areas with greater opportunities. Also helps reduce population pressure in areas experiencing resource limitations.
- Increased acceptance of new ideas.
- Creates favourable conditions for decentralisation.
- Greater opportunities for human resource development due to increased infrastructure.

Regarding the adverse effects of the market economy, the following points were noted.

- Safety net for the vulnerable in jeopardy because of the difficulties in finding initial seed funds and the lack of access of the poor to subsidy. There is a real danger of increasing inequity and this tends to worsen because of the reduced bargaining power of the poor.
- Urban areas become more attractive, resulting in capital flight and brain-

drain, from rural areas. There is uncontrolled growth of urban areas and, over time, there is greater disparity between urban and rural areas.

- Degradation of the resource base increases on account of market-induced over-extraction and self-interest.
- Provision of basic services is generally curtailed with the increasing role of the market and privatisation of these services.

Measures proposed include the following insofar as the role of the State is concerned.

- Policies/laws to regulate distortions in market mechanisms.
- Investment in human resources' development (education, skills, and management capabilities, etc).
- Expanded safety net for the vulnerable (child care centres, health care, etc).
- Greater flow of resources, input services to villages (as opposed to county seats, urban centres).

Regarding local initiatives, it is essential to

- develop farmers' cooperatives for production activities/market in outlets,
- provide protection from powerful outside forces, e.g., middle men,

- provide protection from risks, uncertainties of the market economy (e.g., price fluctuations), and risk sharing,
- take advantage of opportunities and technologies,
- provide technologies and other inputs,
- exploit the comparative advantages in the mountains in a sustainable manner, and
- influence political/economic decision-making.

Closing Summary¹

I think that everyone will agree that the three rapporteurs have done an excellent job of summarising the content of Thursday's group discussions as well as putting forward some concrete recommendations regarding poverty alleviation in mountain areas. I would like to thank them all for the care with which they have approached their task, and I hope that their reports will be made available to a wider audience than the participants in this meeting.

I do not intend, at this point, to provide a further summary of the preceding summaries. Instead, I would like to review two concepts that have frequently been referred to during this symposium, and which have caused some confusion or even misunderstanding. They are however central to the purpose of the symposium, and so I would like to talk briefly about them with some illustrations, which I hope will make the concepts more concrete and indicate why they are so critical to the task of eliminating poverty in mountain areas.

¹ By Nick Menzies, Representative The Ford Foundation, Beijing

The two concepts are 'Science and Technology' and 'Marginality'. The former may seem to be rather obvious without any need for clarification, but I believe that we ought to be very cautious in the role we assign to science and technology in poverty alleviation. 'Marginality' is a concept that is commonly used in research and discussion about mountain areas, but it was clear during this meeting that the meaning and the practical relevance of the concept were not at all clear to many participants.

Science and Technology. Many presentations at this symposium referred to the importance of introducing science and technology to impoverished mountainous areas as a means of poverty alleviation. Many of the presentations also showed the tremendous contribution scientists can make by making their skills and knowledge available to the people in poor counties. In areas that are characterised by lack of access to education and sources of information, science and technology can be powerful tools to break out of the long-standing patterns of production and deprivation which contribute to poverty.

Science and technology are not, however, absolute values. They are only tools to address problems, not the answers to the problems. There is rarely, if ever, just one solution to a problem. Scientific analysis can be used to identify a range of technical solutions to a problem, but different analyses will offer different solutions, all of them 'scientific'.

I have frequently found myself in rural areas discussing this issue with local and provincial personnel. The point is quite easily illustrated: Take any piece of land, let us say a steeply sloping area of 'wasteland' in a mountain community. What is the best, 'scientific' use for that

land? If I turn to an agronomist, he or she would probably recommend terracing the land and turning it into high-yielding grain fields. A livestock specialist, on the other hand, would recommend enriching the grass cover with some clover and other forage species and using it for grazing. A forester would suggest planting trees, perhaps for fuelwood and timber. Each one of those specialists is looking at the land and analysing its potential in a rigorously scientific manner. Each one of them, however, comes up with a completely different solution, most of which are quite incompatible. And a local farmer would probably have yet another idea - equally rational according to the needs and capacities of that farmer.

Science and technology, then, are tools with which to identify a range of solutions, but they are not, in themselves, solutions. It is important, too, to remember that different solutions will have different impacts on different people. I refer here to an Indian forester, Dr. N. C. Saxena, who recently participated in a meeting on community forestry which I also attended. Dr. Saxena was making a plea for more technical research in social and community forestry, but his point was that research is needed to identify technical interventions that benefit the poor in particular. "Science and technology", he said, "are not neutral. We can and must design technologies that respond to the needs of the poor and landless." I hope that this can be kept in mind in the context of poverty alleviation in mountainous areas. We must remember at all times to ask the question. "Who is going to benefit from this particular technology?" The objective is to find technologies with which the answer will clearly be "The poor will benefit".

Marginality. The issue of 'which science and technology' is not peculiar to mountain

areas. The second issue, about which I would like to make some comments, is, however, particularly significant in mountain areas. In fact, in this symposium, most of the speakers from outside China have referred to 'marginality' as one of the characteristics of mountain areas.

Dr. Bajracharya, in his report, defined the concept of marginality. I will not repeat his definition here, but I would like to use the example of a mountain community in China to show why the concept is more than just an interesting abstraction, and how marginality can lead not just to the persistence of poverty but also to the impoverishment of an area which should be relatively prosperous.

The community is located in northern Yunnan Province on the shores of Lugu Lake. The hills surrounding the lake were formerly densely forested. The forests were almost entirely cleared by the provincial forestry bureau in the 1970s, after which the area was declared a 'Protected Natural Area'. The population is made up of four ethnic groups, the *Mosuo*, the *Pumi*, the *Yi*, and a few *Han* households.

Dr. Bajracharya referred in his presentation to Economic Marginality, and Political Marginality. I will give examples of these and will add Cultural Marginality, which may at first sight appear to be even more abstract, but which is also a critical factor causing impoverishment. I would like to emphasise at this point that my intention in discussing this example is not to single out one area of China for criticism. Similar examples can be found in almost every country in the world. My purpose is to use an example with which many of the participants in this symposium will be familiar to point out that marginality is not just an academic concept but that it translates directly into

the lives and livelihoods of mountain communities.

(a) **Political Marginality.** I have mentioned that, in the 1970s, the provincial forestry department harvested most of the timber from the hills surrounding Lugu Hu. At no time in the process were the local inhabitants consulted about the cutting. The decision was made in the provincial capital, some five or six hundred kilometres away - or maybe even in the national capital. The local people suffered the consequences in terms of landslides and soil erosion, but they received no more than wages for the labour they provided to log the trees (the logging trucks were driven by department staff from outside the area). The decision to declare a protected natural area was taken, again, in the provincial capital. The first thing local people knew about it was when a Preserve Headquarters' was built and staff brought in from outside to tell them that they could no longer cut or remove any wood from what was left of the forest. Over the years, the community and the preserve have begun to work out a form of cooperation, but now there is a new threat, again from the outside. The provincial tourist bureau has noticed the natural beauty of the area and has decided to create a 'tourist base' in the area. Small locally-owned and managed guest houses, which now bring extra income directly to villagers, will be replaced by large hotels run and managed by the tourist bureau. Again, the first thing the local community knew about this new development was when they saw surveyors sent by the tourist bureau cutting down trees (which local people are prohibited from doing) to survey and identify potential 'tourist sites'.

The link between political marginality and impoverishment here is that, in each case, decisions were taken by agencies located a long way from the community which have had the effect of destroying critical resources and of depriving the mountain community of sources of income. Being politically marginalised, the mountain community has had no way of making its voice heard to affect these decisions and to ensure that there is some consideration of their interests.

- (b) **Economic Marginality.** Economic marginality flows from the political marginality described above. The bulk of the profits from logging did not flow to the communities surrounding Lugu Hu. Tourist development may well show the same pattern.

The situation around Lugu Hu also shows another aspect of economic marginality: mountain economies often depend on a relatively low level of resource utilisation. Local economic systems may often be swept aside or destroyed in favour of activities that are considered to be more productive from the perspective of wider regional economies. Fishing used to be one of the major sources of livelihood for the *Mosuo* and *Pumi* people around Lugu Hu. Some years ago, Sichuan Province built a hydroelectric facility at the mouth of the river which drains out of the lake. The fish in the lake breed downstream and are now blocked from returning upstream to the lake. The Lugu Hu fisheries have collapsed in less than a decade.

A case can certainly be made that the overall benefits to society of the hydroelectric facility outweigh the loss of the economically marginal

fishery on the lake. At the very least, however, there should be recognition of what has been lost and some form of compensation made available to those who have lost it. Economic marginality has led to relative impoverishment of the mountain community.

- (c) **Cultural Marginality.** The cultural marginality of mountain communities is obvious from the many observations concerning the different customs of minority people, many of which are sometimes designated as 'backward' or even 'primitive'. I would just like to raise two issues which indicate how lack of understanding and appreciation of cultural differences and diversity can also lead to impoverishment and unintended consequences of development efforts.

Cultural marginality can be a phenomenon that distinguishes whole communities or ethnic groups, but it is also found within a community where certain groups are simply ignored or excluded from some activities.

Within the community, one of the most commonly marginalised groups with respect to development activities is women. Lugu Hu is no exception. Traditionally, inheritance of property among the *Mosuo* and the *Pumi* is through the female line. Land-use rights, however, have been allocated to male 'heads of household'. With the exception of ploughing, most agricultural tasks are carried out by women, yet the few extension programmes that exist in this area are directed towards male 'heads of households'. Sadly, such examples have been described so often in the

international literature on rural development that I do not need to go into further detail about the consequences of the cultural marginalisation of women in rural development.

It may be less obvious how cultural marginalisation of whole ethnic groups might lead to impoverishment, but, once again, Lugu Hu offers some concrete examples. The first I will point to concerns religious beliefs. The *Mosuo* and the *Pumi* are devout Lama Buddhists. For centuries, they have protected certain hills and mountains as sacred forests, which they refer to as 'the abode of the Boddhisattvas'. Within Chinese society, as a whole, such religious beliefs are considered to be backward and strenuous efforts have been made at various times in the past to change them. On several occasions, the sacred forests have been deliberately cleared - leading to severe problems from landslides and erosion and the destruction of important grain crops.

One speaker on Tuesday referred to the *Mosuo* as having a 'backward matriarchal form of society'. This is not the place for a deep anthropological discussion about whether or not *Mosuo* society is truly matriarchal, but it is certainly 'culturally marginal' within the context of China as a whole, and it is worth noting how the conflict between a traditional social structure and the norms of the majority can also lead to impoverishment.

An essential feature of *Mosuo* society is that, while adult men and women form stable couples, they both stay in their respective mothers' household even after the birth of a child. In this

way, the household's land is never divided, avoiding fragmentation of landholdings over time. This social structure is in fact a very effective adaptation to the scarcity of arable land which is a critical constraint on survival in many mountain areas. It is important to note that, on the shores of Lugu Hu, the most impoverished farmers are the *Han* households who still divide their land generation after generation, unlike their *Mosuo* and *Pumi* neighbours.

I raise this topic here because the lack of understanding of *Mosuo* and *Pumi* society, which is the result of their cultural marginalisation, has led to frequent calls to 'modernise' their 'backward' customs. Culture and custom are very complex and extreme caution is needed before trying to transform culturally marginal people into a model that is more easily recognised by the centre.

The examples above could be repeated in any number of different mountainous regions in any number of different countries. They serve to explain, however, why many participants at this forum have placed so much emphasis on understanding poor people and their perceptions. Without the active support of the people in mountain communities, development activities cannot be sustained in the long term. China is unfortunately no exception to the long list of countries in which many development projects have collapsed as soon as the specialists and the experts left.

What is needed are programmes and technologies that respond to the needs and capacities of farmers. The

difficulty of identifying and implementing these programmes is compounded in mountain areas by the political, economic, and cultural marginality of mountain people. I believe, though, that this meeting has gone a long way to finding ways of addressing these problems. The key to

doing so is to ask who will benefit. I would like to end with a plea to all the participants in this forum that we all remember, all of the time, that mountain environments may limit the strategies and options for survival, but the poor are people, not pieces of land or production statistics.