

# 4 Approaches and Experiences in Different Countries

A good part of the meeting (two sessions of three hours each) was devoted to presentation and discussion of the planning and development experiences in different countries. In the first session on country experiences, presentations were made by participants from Bangladesh and India. This session was chaired by *Dr. Rabindra K. Shakya*, Member Secretary, National Planning Commission, HMG/Nepal. The next session, in which presentations were made by participants from China, Myanmar, Nepal, and Pakistan, was chaired by *Mr. V.K. Pandit*, Special Secretary, Planning Commission, India. *Dr. Pradeep Tulachan* of the MFS Division, ICIMOD, was the Rapporteur for both sessions. The following is a brief summary of the issues raised by different presentations and the discussions that followed.

## Bangladesh

The presentation on the development experiences in Bangladesh ranged from the historical evolution of integrated planning, in general, and the Chittagong Hill Tracts (CHT), in particular, presented by *Dr. M.H. Rashid*, incorporation of environmental aspects in CHT development programmes, presented by *Mr. Kazi N. Islam*, to the forestry programmes for environment-development integration, presented by Professor *A.H. Golam Quddus*.

Dr. Rashid said that Bangladesh had extensive experience with an integrated multi-sectoral approach. Because of cyclones and floods each year, there had always been a need for strong coordination among different sectoral offices such as, health, transport, relief and rehabilitation, agriculture, and finance.

Referring specifically to the Chittagong Hill Tracts, Dr. Rashid pointed out that this area faced the problem of resettlement of a large group of people displaced by the construction of the hydroelectricity dam at the time of the liberation of Bangladesh. There was limited land for resettlement, and this had led to environmentally harmful activities such as the cutting down of forests. Therefore, the government had prepared a resettlement scheme which included allocating a certain piece of land for farming to grow food and providing some cash income, as well as

technology and other support facilities. The second phase had emphasised development activities, such as agriculture and horticulture, through cooperatives. It was only in the 1980s that comprehensive multi-sector development of the hill tracts began. An important change took place in 1989 when three districts of Chittagong were given autonomy, along with the authority to collect taxes.

Bangladesh had discontinued the system of five-year plans and operated on the basis of a 15-year perspective plan. In formulating this perspective plan, participation had been sought from all professional groups of people, including farmers and rickshaw-pullers.

A number of institutions had been set up for the Chittagong Hill Tracts (CHT): Chittagong Hill Tracts' Development Board, District Councils, and the Special Affairs' Division under the Prime Minister were the most notable among them.

Mr. Islam stated that, in Bangladesh, the hills covered 12 per cent of the area and were inhabited by about 1,500,000 people. During the decade from 1985 to 1995, a number of integrated community development activities which were mostly related to social sectors, such as drinking water, public health and sanitation, and literacy, had been implemented in the hills. Development programmes through the local government to assist hill people began in 1989. Initially, a feasibility study was carried out. These programmes were implemented by local people, while the government made only budgetary allocations. Since July 1995, the environmental aspects had also been considered in development planning. Every sectoral activity should incorporate environmental aspects from the village up to the central planning level.

Referring to ICIMOD's work in the CHT, Mr. Islam mentioned that the Centre had been of great help in pilot demonstrations of the SALT programme and in establishing a GIS centre. In the earlier planning phase, environmental concern in hill community development had been lacking. It was only in 1995 that a focus had been given to environmental aspects of hill area development in the national plan. ICIMOD had been also instrumental in this respect.

Professor Quddus, dwelling mainly on the forest-related aspects, stated that Bangladesh had had 16 per cent of its land under forests; but 10 per cent had already gone, with only six per cent of forest land left. Thirty to 40 per cent of the forest land was encroached upon by squatters, and they were a very powerful constituency. As a result, not much had been done to remove them from their present

settlements and restore the land to forests. He gave an example of how forest land could be distributed through intersectoral action. Although forest land was within the jurisdiction of the forest department, the power to distribute lay with the Deputy Commissioner. Together they were able to approach the government to distribute the forest land. Similarly, those who were allotted the distributed land required some service from the department of agriculture, which, in turn, also joined in the programme, thus achieving good inter-departmental coordination.

On being queried about whether land was distributed to the landless or to those who already had land, Professor Quddus confirmed that the land had been distributed to displaced people.

## India

Five presentations were made regarding the Indian experiences in development. They ranged from national-level planning presented by **Mr. V.K. Pandit**, development experiences of a State – Himachal Pradesh, presented by **Dr. D.K. Sharma**, development programmes in the hill region, Uttarakhand, of a State – Uttar Pradesh, presented by **Mr. S.K. Muttoo**, an agroclimatic zonal planning approach, presented by **Mr. G.S. Guha**, to the environmental policy, presented by **Mr. R.S. Ahlawat**.

Mr. Pandit stated that, although the Indian government had recognised the distinct characteristics of the Himalayas, such as their diversified agro-ecological conditions and richness of biodiversity, it was only with the Fifth Five-year Plan that special hill area development programmes were introduced. Results of these programmes had been mixed. Some areas had developed, but, in many others, severe environmental pressures had emerged. A large number of development brokers and contractors had also surfaced to take advantage of the ineffectiveness of government machinery, which had been due to difficulty in terrain and physical conditions in the mountain areas, in the implementation of these programmes. They had played a detrimental role both on the developmental and environmental fronts in the Himalayas. In view of the lack of opportunities for local employment, resulting in wide-scale out-migration, the Fifth Five-year Plan had aimed to increase production and employment through different development packages. But too many things were attempted at the same time without much focus on achievable activities. Even though hill development programmes had been sector specific and they cut across the region, no long-term master plans had been developed. While implementing sector-specific programmes, there had been too much interference politically and too much pressure from

contractors. Due to the lack of long-term master plans, many of the roads were incomplete and unusable. However, educational infrastructure had expanded very rapidly.

Future plans should emphasise the use of the educated, unemployed youth in the hills by encouraging private businesses in the fields of environmental energy (water resources), electronics, medicine, and other suitable activities. Group-level actions, such as cooperatives, might also be promoted to run these businesses.

The hills were increasingly becoming food deficit areas. Furthermore, the nutritional needs of the people in the hills were greater than those living in the plains. Thus, the public distribution system in the hills should be strengthened. It should include food, clothing, and other essential items of household consumption.

A watershed-based development programme had been in operation for some time, but a reassessment of present programmes was required. Similarly, negative aspects of horticultural development should be studied. The right tourism choice was essential. Access to outsiders should not be denied since they brought new and useful skills. Local entrepreneurs should be encouraged to run local industries. Currently, there was an over-reliance on the public sector. Efforts should now be made to encourage private initiatives. For this purpose, changes in the current administrative structures were needed. There was also a need for concentrated research on the technological options available to hill areas. Household priorities, and particularly those of women, should form an essential element in development programmes.

Dr. Sharma provided a brief history of how Himachal Pradesh (HP) had undergone transformation from depending upon subsistence-centred agriculture to commercial horticulture-led development. In 1949, there had only been 700km of roads. At present, there were 2,500km of roads and half of them were metalled. Similarly, foodgrain production had increased from a mere 0.2 million tons in 1949 to 1.3 million tons. This had been made possible mostly through the transfer of the plains' technologies from Punjab and Haryana. Fruit production had increased from a mere 1,000 tons in 1949 to 400,000 tons. The dynamic and committed leadership of Dr. Y.S. Parmar, the first Chief Minister of HP, had been instrumental in these achievements. But, rapid growth in horticultural crops had begun to impinge on the forests, because of the need for packaging material (wooden boxes). Approximately 200,000cu.ft. of precious conifer trees had been felled each year, causing a negative impact on the environment. This had forced the state to impose a complete ban

on felling trees, apart from the dead ones from the forests, and to explore new options for the supply of wooden boxes. As a result, the state had started to produce half of its requirements for packaging boxes from timber imported from Punjab and Haryana and the rest from corrugated cardboard boxes.

Currently the State saw its future in harnessing water resources to generate hydropower and in tourism. Tourism in the State had suffered in the past because of the lack of appropriate policies to promote private sector tourism development. Excessive intervention by the public sector in tourism development had caused setbacks. This policy had discouraged private initiatives to create adequate infrastructure such as hotels, restaurants, and travel facilities. The lesson learned was that the government's role should be confined to promotional aspects and the opening up of new areas for tourists.

Horticulture did act as a lead sector in the development of Himachal Pradesh, but it should be noted that, whereas the government had played a facilitating role, the main initiative for development of this sector had come from the people themselves. In fact, it had been a missionary who first began work in horticulture in Himachal Pradesh.

Today, a serious question being asked was for whom do we preserve the hill environment because the mountain people living in the harsh environment had been left out of mainstream development and were lagging far behind in the fulfilment of their basic needs. They needed more development, not less. Here, the equity issue needed to be addressed seriously. Since resources for basic social and economic infrastructure could not be generated within a short time by local mountain people, from where could the required investment come? Would the mountain people be compensated for protecting an environment which was also the lifeline of people living downstream?

In conclusion, Dr. Sharma pointed out that certain basic facts needed to be kept in mind in approaching the development of mountain areas. These were a poor resource base; short working seasons; the high cost of infrastructure, the necessity to build longer roads for a given connectivity (a one kilometre road in the plains is equivalent to 8km in areas above 3,000m); a high cost of maintaining roads in the hills because of the fragile ecosystem; a high per capita administrative cost; and differences between the northern slopes and the southern slopes in terms of considerable heterogeneity in biophysical aspects, calling for a different approach and unit in area planning.

Mr. Muttoo presented a brief account of the evolution of hill-specific programmes and approaches in the state of Uttar Pradesh (UP). A separate hill agricultural development programme had been introduced about 25 years ago. An important landmark in this respect was the creation of a Directorate of Horticulture, mostly focussing on hill horticulture. Another was the creation of a separate department by the state government to deal with the Development of Hill Areas and, subsequently, the location of its offices in hill areas.

Mr. Muttoo stated that the Forestry Act, 1980, which included all forest areas as forestry land, had often been the biggest hindrance to the development of roads. To build roads, permission was required from the central government, and this was invariably delayed.

Among the main problems in Uttarakhand, Mr. Muttoo singled out that of the educated unemployed. Therefore, the government was encouraging agricultural graduates to take up farming, especially horticulture, by providing concessional credits. He stated that considerable progress had been achieved in silk cultivation (sericulture) in the hills. Over the last three years, silk production had tripled because of the completely integrated programme of input supply and marketing in which the wholesale market (*mandi*) and private traders were playing an active role.

Two recent initiatives were especially mentioned by Mr. Muttoo as being of significant potential in Uttarakhand: (1) tea plantation and (2) cultivating the fencing plant (*Ramban*). The latter was a shrub tree which grew well on marginal and degraded lands; fibres of this plant were used for rope-making and the pulp was used for making medicines and shampoo. NGOs were involved in promoting plantation of this tree on degraded land.

Mr. Guha made a brief presentation on the agroclimatic zonal approach and its useful application for mountain areas. Beginning in 1988, the Planning Commission had set up an Agroclimatic Regional Planning Unit (ARPU) to develop methodologies and undertake studies for the promotion of this approach. The agroclimatic regional planning approach was now being increasingly recognised as a viable and eco-friendly alternative to conventional area planning. Inherently built into the concept were the dimensions of convergence, 'planning from below', and peoples' participation. The concept of planning based on agroclimatic zoning assumed that each region (irrespective of states and their boundaries) had a reasonable degree of commonality in terms of natural resource endowments, constraints, development issues, infrastructure and farm practices, as well as sociodemographic-economic parameters.

The agroclimatic regional planning approach was making increasing use of the new computer technology. A fair amount of project modelling work was being undertaken; and simulation models had been used for sustainable resource management issues. To obtain data from satellite imagery, ARPU had linked up with the space networking system in India. An agroclimatic databank had also been developed which sold this data from which agroclimatic data were available at cost price.

Mr. Ahlawat presented a brief outline of the environment policy of the Government of India, particularly in respect to hill areas. He said the policy basically recognised that optimal planning was essential, both economically and environmentally. Cleaner technologies that conserved natural resources and used by-products were critical. Regeneration of the fragile ecosystem through appropriate actions was a basic element of the policy. Survey of resources, including the entire flora and fauna, was considered extremely important.

All the schemes of the Ministry of Environment and Forests were geared towards conserving the environment and different approaches were followed: a watershed approach; a forestry participatory approach—joint forest management schemes; sanctuaries and protected areas; and eco-tourism development. He said that eco-tourism should be based on the carrying capacity. Human resource development for developing entrepreneurship capabilities would be extremely important.

According to Mr. Ahlawat, two issues were of special significance: one, natural resource accounting and the issue of how it could be integrated into the national accounting system; and, two, in the context of liberal and market-oriented economic policies, how could resources be raised to protect and conserve the environment; for example, by charging environment tax?

Chairman, Dr. Rabindra K. Shakya, emphasised the need for local peoples' participation at all stages, i.e., designing, phasing, and monitoring and evaluation, in area-based planning and programmes. Building local capacities through human resource development and skill improvement was absolutely essential for local area planning. Although talking about integrated programmes for environment and development sounded good, the reality might be different. For example, integrated rural development projects in Nepal were the finest examples of how decisions were taken in a most disintegrated manner, because decision-making remained with sectoral offices.

## **Pakistan**

The presentations from Pakistan gave an overview of the mountain area perspective in national plans and programmes. This was

presented by *Mr. Qaiser Ali Shah*; environment-development integration in mountain area development was presented by *Professor Mian M. Nazeer*; and a visual display of the mountain environment and the lives of mountain people was presented by *Ms. Nusrat*.

Mr. Shah pointed out that there were many tribal communities in northern Pakistan, and their sociocultural values were extremely important in development planning for mountain areas. Tribals were generally suspicious of the motives of government officials and believed more in their own kin and kith. Therefore, these people did not respond well to government officials and outsiders. Given the strong belief in their own sociocultural values, the participatory approach as a tool for development planning might not prove appropriate. Development impediments of a sociocultural nature were further compounded by physical problems related to land management, soil erosion, and natural disasters. In the circumstances, a number of development models of integrated regional planning that had been tried in the past did not work. The vertical system of bureaucracy, leading to problems of coordination and inconsistencies, had been among the most important bottlenecks in integrated regional planning.

Historically, the British had not entered tribal areas because of physical and cultural inaccessibility. However, with the advent of Pakistan, the government had launched three programmes to benefit tribal people – small-scale industries, for example, in leather and metal products; vocational education; and agricultural sector training, e.g., in agro-processing and in tubewell irrigation.

Mr. Shah considered (i) education/vocational training; (ii) employment generation (mainly self-employment); and (iii) a better price support system for agriculture to be the key elements of an illustrative development model for mountain areas. In his view, the key activities that needed attention in the northern mountain areas were:

- fruit processing,
- forestry,
- water harvesting,
- small-scale industries – ethnic crafts and clothes,
- mining – precious stones,
- women's development, and
- tourism.

Tourism, he stated, acted as a double-edged weapon. It created inflationary pressures on the local people since most of the goods and services were imported from the outside. Additionally, it pressurised the carrying capacity, e.g., garbage dumping, which was having a serious negative impact on the local environment.

The Government of Pakistan had created a Ministry of Environment which was focussing on several key activities such as the Tarbella watershed management project, the juniper forests' project in Baluchistan, and biodiversity and environmental protection and resource conservation. Some INGOs, such as IUCN, were assisting the government in designing programmes for environmental protection.

Professor Nazeer observed that mountain areas had remained inaccessible and marginalised. The increasing population did not receive adequate attention in the national development agenda. The first six Five-year plans had not included the environment as an aspect of development. It was only in the Seventh Five-year Plan that any mention of the environment was made. The Eighth Five-year Plan operationalised environmental aspects. The first conference on the environment was held in 1989/90. Yet, he thought that some of the crucial aspects of environment in mountain development, such as the intergenerational dimensions, received little attention in plans and programmes.

Professor Nazeer proceeded to describe the institutions and programmes involved in mountain development in Pakistan. Institutions responsible for mountain development included line departments, with various activities as a part of their annual plans, and the local development initiatives included district development committees and advisory and social action boards. A number of initiatives were being taken by parastatal agencies and NGOs, particularly by the Agha Khan Rural Support Programme. In terms of large development projects, there were multipurpose dams and forest projects. There were also a number of area development, multi-sectoral projects funded by various bilateral and multilateral donors and institutions. Most of these multi-sectoral projects, in Professor Nazeer's view, lacked critical linkages between the environment and development at various stages of implementation. This was partly because the political compulsions of the government resulted in them having a limited time-frame within which to show results. They wanted visible results within a short time, irrespective of the long-term environmental consequences. Also, there was a host of interrelated problems such as the lack of resources or a marginal resource base, lack of institutional and financial capability, and lack of a support system. Finally, there was

the lack of a 'pro-mountain bias'. Mountains were an objective in themselves; they should not be taken merely as space for activities.

The two presentations were followed by a slide show on the mountain environment, the lives of the people, and the participatory processes of programme initiatives in difficult mountain terrains in northern Pakistan by Ms. Nusrat.

## China

The presentation on China by *Professor Yang Qinye* highlighted the experiences gained in preparing 'Agenda 21 for Sustainable Mountain Agricultural Development' for Tibet, with ICIMOD's support. Professor Yang emphasised that the Chinese Government had been paying a great deal of attention to sustainable development. Sustainable agricultural development in the high altitude, specific climatic areas was very important to both Tibet and the Asian mountain regions. The recent session of the sixth meeting of the Tibetan People's Representatives ratified the Ninth Five-year Plan and strategic objectives for Tibet's economic and social development up to A.D. 2010; these spelled out the plan for sustainable integrated development in Tibet for the next 15 years. The Agenda 21 for Sustainable Mountain Agricultural Development (SMAD) had been processed and would be regarded as a model document and as part of the 15-year Development Plan for Tibet.

Agenda 21 for SMAD in Tibet had 13 chapters organised around three thematic aspects, namely, sustainable resource and environmental development, sustainable economic development, and sustainable social development.

As a vast high-altitude mountainous area, Tibet faced severer problems in sustainable development than those in other regions where resources could be easily transported because of the plains' landscape. Thus, mountain agriculture in Tibet was naturally and historically more backward than in other regions of China. Now the key problem was to improve efficiency through strengthening the capacity for resource management. For this purpose, there was a great need to develop human resources by training the local people.

Supplementing Professor Yang's presentation, *Dr. Tej Partap* said that planning in China was very much decentralised. Tibet, which was considered to be most fragile and the poorest province, had harsh climatic conditions and an oppressive environment. The decentralisation process was operationalised in Tibet in keeping with these conditions. Problems were identified by the local people. Planning was carried out through a bottom-up approach. The role of

the provincial government was confined to making budget allocations.

In the past, the agricultural extension and research system had been geared to cereal crops for food security reasons. Moreover, at the policy level, there was a strong plains' bias. Scientists or agricultural graduates who came to work in Tibet were trained to grow rice and not trained to manage yaks in the highlands. As a result, in spite of a developed road infrastructure, 80,000 yaks had died of cold last year, mainly due to the lack of local management capabilities.

The Government of the Autonomous Region of Tibet had requested ICIMOD to assist them in preparing a strategy for poverty alleviation. ICIMOD had agreed to provide a platform to discuss issues and develop a strategic plan for this purpose. Several meetings had been conducted with high ranking Chinese officials. The outcome of these meetings and interactions was Agenda 21 for Sustainable Mountain Agricultural Development in Tibet.

Appreciating the points made with regard to decentralised planning in Tibet, Mr. Pandit, stated that, in the Indian context, central schemes and centrally-sponsored schemes were all planned and budgetted at the central level. With such schemes, the states did not have any flexibility, and these schemes were costly also. Therefore, it would be extremely important to leave many of the sectoral schemes, such as those for drinking water, primary health, elementary education, rural housing, and poverty eradication, with the states.

## Myanmar

The two presentations from Myanmar focussed on institutional arrangements for the development of mountain regions and the people, by *Mr. Kyaw Moe*, and an approach to agricultural development, by *Mr. Win Maung*.

Briefly describing the geophysical characteristics of Myanmar, Mr. Moe stated that the mountain dwellers were poor because of many factors such as lack of communications, education, health facilities, and economic opportunities. Because of the lack of other productive opportunities, mountain farmers were forced to grow poppies as a cash crop. Realising this, an holistic approach had been adopted in development planning for mountain areas maintaining a balance between development and environment. The main objective was to provide economic opportunities without causing damage to the fragile environment.

To improve the living conditions of hill dwellers, the government, as a first step, established 'A Working Committee for the Development of Border Areas and National Races' in 1989. The government had also created a separate ministry in 1992 – the Ministry of Progress for Border Areas and National Races and Development Affairs – to look after development activities in hill areas. Sub-committees on agriculture, forests, and livestock breeding were given the responsibility of substituting poppies with other cash crops. Four other sub-committees were responsible for the social aspects of health, education, housing, and public relations. The roads and transport sub-committee looked after infrastructural development, and the communications' sub-committee looked after communications and postal services. Based on the experiences and achievements made in these areas, a Master Plan had been prepared and approved by the Central Committee in 1994.

As part of its efforts to develop and manage the sustainable mountain ecosystem, the country had joined the International Centre for Integrated Mountain Development in 1990. ICIMOD had provided both professional and technical training to 15 trainees from Myanmar. Myanmar was currently getting ICIMOD support in the fields of remote-sensing, GIS, and biodiversity management. A memorandum of understanding (MOU) had been signed between ICIMOD and Myanmar's Forest Department and the Department of Progress for Border Areas and National Races' Development in January 1996. Mr. Moe believed that this MOU would be of great assistance to future planning activities for environmental and economic development in mountain areas in Myanmar.

Mr. Maung also referred to the social backwardness and economic poverty among the mountain people who resorted to poppy growing. From the beginning of 1976, measures to control drugs, on the one hand, and to create opportunities for productive sectors, e.g., agriculture, on the other, had been undertaken. The latter included opening agricultural education stations; land reclamation for former opium poppy growers; cultivation of opium-substitute crops, supply of seeds, seedlings, fertilizer, pesticides, and farm implements; and conducting training courses for farmers. Currently, considerable success had been achieved in target areas because of effective programme implementation by the respective departments or sub-committees in coordination with the Ministry of Border Areas and National Races' Development.

With the overall objective of developing the mountain areas, the Myanmar Agricultural Service, under the Ministry of Agriculture,

had opened 75 agricultural education stations to affect a change from the shifting farming system to a stable agricultural system and also to prevent the misuse of land in mountain areas. Provisions had also been made to ensure the supply of inputs such as quality seeds, seedlings, fertilizers, pesticides, and farm implements.

To improve crop yields and conserve ecological conditions, the Myanmar Agriculture Service had recommended the dissemination and practice of (i) sustainable hillside farming technology; (ii) sloping agricultural land technology (SALT); and (iii) improved terrace farming. Mr. Maung hoped that coordination among different ministries and departments and the joint work on SALT with ICIMOD would bring about an improvement in the crop yield levels.

## Nepal

Presentations from Nepal covered wide-ranging issues of mountain environment and development such as the national perspective on mountain resources, presented by *Mr. S.N. Upadhyay*, environmentally-friendly, low-cost road infrastructure, presented by *Mr. Rabindra N. Adhikari*, and development-environment integration in national planning, presented by *Dr. Rabindra K. Shakya*.

Mr. Upadhyay observed that one of Nepal's relatively successful experiences in integrated environment and development in the mountains so far had been the development of water resources for drinking and irrigation uses. Peoples' participation had played an extremely important role in the irrigation sector where local people managed irrigation systems covering 70 per cent of the total irrigated area. This was an excellent example of people successfully managing irrigation systems through mobilisation of their own local resources.

Environmental and economic development in the mountain areas, according to Mr. Upadhyay, should be viewed in the wider perspective of national development rather than focussing on some specific areas only. This was because the mountains were a storehouse of natural resources and effects on forests, water, and soil systems in the mountains had implications nationally, for example, catastrophic floods in the plains. Similarly, mountain water resources were being used by people living in the plains. Thus, there should be equitable sharing of benefits between the mountains and the plains. And, to this end, people living in the plains should be prepared to share the costs of preventing the natural degradation that had been taking place in the mountains. Recently, Nepal had legally operationalised the compensation

concept by binding the Nepal Electricity Development Authority to invest one per cent of the net income of power projects in mountain areas in order to compensate them for the use of mountain resources – water. Also, it was obliged to first provide electrification in the local areas. Job opportunities must be created locally in mountain areas. Transformation of the present subsistence-centered farming economy into a commercialised one, though difficult, was necessary for this purpose.

Mr. Adhikari said that development without disturbing the environment posed a challenge. Since Nepal had over two-thirds of its area in the mountains, mountain development played a critical role in the process of national development.

In the case of the development of roads in mountain areas, Mr. Adhikari said that the demand for road building was very high, but building roads was very costly, especially in the mountains. For example, to construct a 6.2km fair weather road from Silugadi to Safe Bazaar had cost about Nepalese Rupees 650 million. This meant that cost per kilometre of road was about NRs 10 million. Could such huge investments be justified in terms of economic returns? But, again, should these areas always remain inaccessible? As of now, there were 21 mountain districts with headquarters that were not yet connected by motorable roads.

In light of the high demand for road building and the compelling need to keep in tune with the resource and environmental constraints, Nepal had experimented with low-cost and environmentally-friendly road construction with local peoples' participation. There were two such roads already built, one in Palpa and the other in Dhading district. No heavy machinery and equipment or explosives had been used. People had used only small hand tools such as *kodalo(s)*, pickaxes, and shovels. These projects were started during off-season and a lot of employment for local people had been generated. The DDC and VDC had mobilised the local communities and only technical inputs had been provided from outside. Furthermore, local communities had stopped the movement of vehicles during the peak monsoon season in the two months during which 90 per cent of the damage to roads takes place. This had led to 90 per cent reduction in maintenance costs. Local communities were also given the power to collect the road taxes that were used for maintenance. Since this concept of low-cost and environmentally-friendly road construction had been successfully tested in two districts, it had been extended to three more districts with support from the Asian Development Bank.

However, this model had some limitations. Firstly, road construction with this approach was a slow and time-consuming

process. Politicians who wanted quick results did not necessarily like this method of road development. Secondly, the capability of local institutions was limited. As a result, this model did not allow the building of high standard roads and big bridges which required heavy investment and sophisticated technologies.

Dr. Shakya pointed out that Nepal was characterised by significant inter-regional disparities in economic development. The planning process had tried to reduce them, but to no avail. Mountain areas were becoming environmentally degraded. With the Sixth Five-year Plan, the government had introduced a separate land use and environment plan for mountain areas. The Seventh Plan had continued with this approach, but it had proved to be far from adequate in the implementation because of a shortage of expertise on environmental aspects. During 1988, a national conservation strategy had been developed and a council of natural and cultural institutions had also been established. The latest initiative was the creation of a separate Ministry of Environment and Population in 1995. This reflected the commitment of His Majesty's Government to incorporating environmental aspects into the process of development planning.

The Eighth Five-year Plan included a national policy on environment. The priority was to minimise negative impacts on the environment and to control all activities that degraded the environment. Currently, an Environmental Protection Act was being drafted. A new project/programme needed approval from the National Planning Commission (NPC). The NPC approved any project or programme on merit, using four criteria: engineering, technical, economic, and environmental. There was a Central Environmental Protection Council. Projects designed at central, district, and local/village level were required to give due consideration to the environment. Most of the projects had also to go through environmental impact assessment (EIA); it was mandatory for larger projects.

Dr. Shakya recognised the need to incorporate environmental accounting into national accounting. But he said that environmental accounting was very complex and difficult to handle. Firstly, there was a conceptual difficulty in measuring environmental impact, and, secondly, there was the problem of valuing natural resources. Yet, he thought that efforts needed to be carried on to resolve these problems. Dr. Shakya also gave examples of some successful environmentally-friendly projects in Nepal.

Commenting on the presentations, *Dr. M.S. Manandhar* pointed out that, although Nepal was a mountainous country with about 85 per

cent of its area in the mountains, the first four Five-year Plans had not been geared to the mountains. One reason, he thought, was that Nepal had first started its development work with imported models, such as India's block development model and the U.S. village development model, financed by the respective countries. It was only in the Fifth five-year Plan that a pilot hill development project financed by the Swiss government had been started in Jiri, called the Jiri Multipurpose Development Project. During the first few years, the project had been a non-starter because of the lack of roads. Later, the road component had been added to the project. In the 1970s, a large number of integrated development projects had been started — both planned and funded internationally, in donor chosen areas. Some were of a short duration and some had lasted as long as a 15-year period. Some roads had been built, but little had been done to develop local human resources. Projects in areas with no road connections, according to Dr. Manandhar, showed no visible results, because they were too scattered.

Of late, decentralisation and bottom-up planning were being emphasised in Nepal. As local resources, especially community forests, had been transferred to local control, the performance was much better. In this context, how the current trends of globalisation, free trade, and privatisation would effect local peoples' control over their resources was a crucial question. Globalisation-oriented models might not be environmentally-friendly. Therefore, it was important that we make the right choice of development models.

The Chairman, Mr. V.K. Pandit, suggested that the mountains should be seen as a distinct personality and a mountain perspective should be defined in the national context. As the strategic objectives today were tied up with decentralisation in relation to commercialisation based on specialisation, free market and globalisation, and the politics of public choice, the right choice of the development model assumed special significance, particularly in the case of mountain areas. Government had a role not only in social welfare but also as a facilitator, protector, and conserver. The innovative approach to road-building in Nepal through local peoples' participation was an excellent example to emulate. However, we needed to have an action plan which selected realistically what could be conserved and what could be developed.