Country Concerns

The following section contains statements by high-level representatives from ICIMOD Member Countries on the mountain issues and policies of their respective countries and on the role of ICIMOD as they see it.

Afghanistan

In the Name of Almighty God

Mr. Chairman
Honourable Delegates
Observers
Ladies and Gentlemen

On behalf of the Islamic State of Afghanistan, and on my own behalf, I wish to express my country's sincere gratitude for the invitation extended to us by the Director General of ICIMOD to attend the 10th Anniversary celebration of ICIMOD's establishment in Kathmandu.

The pressure of human demands on renewable natural resources is one of the causes of the large-scale extinction of species of flora and fauna and nature has almost [a] very limitless [a limited] capacity to absorb the impact of this pressure, especially in developing countries where poverty and inadequate environmental education is common. In mountainous developing countries, the human abuse pressure on natural resources is the highest, because these ecosystems are the most fragile and the people living in the mountains are highly dependent on renewable natural resources.

Afghanistan is a land-locked country in the Hindu Kush-Himalayan Region with a wide diversity of habitats and ecosystems, ranging from steppe, semi-desert, desert, riverine forests, and lakes to shrubland, mountain woodlands, and mountains. Of a total land area of 65.2 million hectares of our country, approximately 30 million hectares are rangeland, 7.9 million hectares are arable land, and 1.7 million hectares are forests.

Within a wide altitude range of from 250 to 7,450m in Afghanistan, the limited lowland area below 500m in altitude and the wide areas of mountain plateaux, within the 500 to 1,500m altitude level, comprise 50 per cent of the country's total geographical area.

High mountains above 3,000m in altitude occupy 15.31 per cent and lands within 2,000-3,000 m occupy 24.14 per cent of the overall geographical area of the country. Military conflicts from 1979 onwards caused a breakdown in administration in many areas of the country and depopulation and abandonment of agricultural land, millions of land mines were laid throughout the country, and there was uncontrolled use of timber and wood, hunting of wildlife, egg collection, and disturbance of waterfowl during the breeding season.

Physiography

The main physiographic regions of Afghanistan (Kitamura 1960; Smith et al. 1973) are:

- the desert region (5,00-1,000m in elevation) of Dasht-e-Margo (a desolate steppe with salt flats) and Registan (covered with windblown sand) on the southwestern site of the Hindu Kush mountain range;
- the steppe and semi-desert region (900-1,800m in elevation) between the desert and central highlands on the south-western portion of the Hindu Kush mountain range;
- the central highlands (2,000-7,000m in elevation), part of the great Alpine Himalayan mountain chain - this region covers an area of approximately 256,000 sq. km. and most of the forests of Afghanistan are located in this region;

Statement by

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- the semi-arid plains along the Oxus River (300-450m in elevation) and loess covered foothills (450-1500m elevation) on the north side of the Hindu Kush, part of the central Asian steppe - this region covers an area of approximately 64,000 sq. km.; and
- the subtropical region (400-1,200m in elevation) of the eastern part of Afghanistan.

Climate

Afghanistan has a semi-arid steppe climate with cold winters and dry summers (Bharucha 1955; Smith et al. 1973). The Indian monsoon summer rain influences a narrow belt in eastern Afghanistan, permitting the development of veritable forests (Freitag 1971).
The annual precipitation is of the Mediterranean type with the maximum generally in the spring and a dry period of five months in summer. The temperature regime is of the continental type with hot summers and severe winters. Temperatures range from -20°C during winter to 35°C during summer.

The climatic zones of Afghanistan can be divided into arid (100-200mm ppt), semi-arid (200-400mm ppt), subhumid (400-600 mm ppt), and monsoon types.

Forest Resources

On the basis of dominant species and ecological distribution we can distinguish ten types of forest in Afghanistan; e.g., Spruce-fir forest, Deodar forest, Pine forest, Oak forest, Juniper forest, Pistachio forest, Almond forest, Olive forest, Tamarix forest, and Haloxylon forest.

The natural vegetation of a significant proportion of the country was originally woodland and forest, but centuries of destruction have resulted in the almost complete disappearance of forests from plains and valleys. Scattered remnants of Juniper stands on the northern slopes of the Hindu Kush provide evidence of previously large forests on the now barren slopes. In the fragile mountain ecosystems of Paktia Province, the last forests are dying and, with them, the chief means of livelihood for an entire region (Eckholm 1975b).

The reasons for the partial existence of forests in Afghanistan can be enumerated as below.

- Low population density due to unfavourable topography at higher elevations.
- Protection of economically valuable trees (e.g., *Pistacia vera* and *Pinus gerrardiana*).
- Protection of trees, e.g., around *ziarat* (tombs and shrines).

Most natural forests of Afghanistan are physiographic climaxes because the rainfall alone is entirely inadequate to support a forest. Soil conditions tend to become more mesophtic at higher elevations, allowing for the development of a unique altitudinal zonation of forests.

Rangeland Resources

Rangelands, on which the majority of Afghans depend directly or indirectly, have steppe characteristics and, on the basis of species' composition, growth, form, and aspect, are divided into two distinct communities.

- Artemesian steppe forms a transitional shrub belt between desert and deciduous forest from west (Herat) to southeast (Ghazni) on the south side of the Hindu Kush.
- Grass steppe. This community occupies the fertile loess plains below the deciduous forest (*Listacis vera*) on the north side of the Hindu Kush mountain range.

One of the best possibilities for the employment of mountain people and for the development of these ecosystems is livestock production. Most of the population in Afghanistan earn their living from animal products and, within this sector, sheep, cows, and goats have a prominent role, being the main source of production for milk, meat, wool, skin, and casing as the local consumption and export items.

The present status of range conditions in comparison to the pre-war period has been studied. The first step in the restoration of degraded rangelands is to correct the improper activities that have resulted in these conditions. Improper grazing practices (nomadism and semi-nomadism) on rangeland are primary causes of the reduction in productivity of the mountain ecosystems of Afghanistan. However, drought and fuel collection are also important agents in the depletion of forage resources.

Wildlife Resources

There is one National Park and four protected areas in Afghanistan for the purpose of wildlife conservation. The Department of Forests and Range of the Ministry of Agriculture and Irrigation is responsible for the management and protection of the country's protected areas and wildlife.

There is a lack of non-governmental organisations concerned with nature conservation.

There are 14 species of mammals, five species of birds, two species of reptiles, and one family of plant species (orchidaceae) threatened in Afghanistan. Major problems related to wildlife conservation are mostly illegal hunting, egg collection, and disturbance of waterfowl during breeding season.

Horticulture

The area under main crop cultivation in Afghanistan is estimated to be 3,627,000 hectares, out of which fruits and nuts are cultivated on 143,500 hectares and vegetables on 102,500 hectares. Fresh and dried fruits, nuts, and medicinal herbs make up 40-45 per cent of the total export.

Twenty-one species of deciduous fruits, six species of deciduous nuts, and 12 species of evergreen fruits, belonging to a total of 22 genera, are cultivated in Afghanistan. About 31 different species of vegetables are cultivated and probably more than 12 species of wild vegetables are found in Afghanistan.

Water Resources

In Afghanistan, precipitation takes place mainly from the month of November until May, in the remaining months of the year precipitation is negligible.

The rivers of the country are divided into three main basins.

- Amu (Oxus) Basin: This includes the Balkh, Kotcha, Kunduz, Seripul, Qysar, Morghaba, and Harirud rivers. In this basin the mean annual flow rate is 560m^3/sec.
- Hind (Indus) Basin: This basin includes the Kabul, Karam, and Gumal rivers which have an average annual flow rate of 770m^3/sec.
- Siestan Basin: The Helmend and Arghandab, Farahrud, and Khashrud rivers with an average annual flow rate of 420m^3/sec are included in this basin.

Considering these basins as a whole, the total annual flow rate of Afghan rivers is between 1,600-1,670m^3/sec or 50 to 55 billion cubic metres of water.

According to the calculations, about 15-18 billion cubic metres of water are used for irrigation, whereas the rest, due to lack of good management of rivers and reservoirs, flows outside the country.

Energy

Over 80 per cent of our national energy budget comes from forest and range resources. Large-scale charcoal production and the mud brick industry have contributed to the disappearance of Juniper and Oak forests. The high demand for fuel today, as in the past, is satisfied primarily through wood and charcoal.

In the 1980s, the few remaining forested areas were being destroyed to meet the fuel requirements of the major cities, while shrubs and dried herbs met the needs of the rural population. Therefore, substitutes are necessary in order to protect forests and ranges.

The Use of Special Techniques

In most of the mountains and hillsides, small water springs exist throughout the Hindu Kush-Himalayan Region. Most of the forest tree species and all deciduous fruit and nut species could be planted in this region by using drip irrigation systems.

To use the limited moisture more efficiently, deciduous forest and fruit trees can be planted in a micro-catchment system for catchment of rainfall runoff in hilly areas.

In the northern part of Afghanistan, melons and watermelons are planted in the cuts and longitudinally sectioned stumps of the deep-rooted camel thorn plants (*Alhagi camelorum*). As a result, the melon and watermelon plants use the water that is absorbed by the camel thorn plant from deeper parts of the soil.

To reduce surface runoff, which is usually in the form of sheet flow; developing vegetative cover; preventing overgrazing; inducing high-value grasses, land bounding, terracing, land grading, and levelling; increasing water infiltration by deep ploughing before the rains; and, developing dust mulch after the rains, improving the soils' water-holding capacity, are recommended.

Providing water storage structures, such as farm ponds, from which water can be used during critical periods, using mulches on the water surface of these ponds to reduce evaporation is one strategy.

Checkdams (made from local materials) across the streams at selected intervals are recommended in order to reduce heavier flows and induce infiltration of runoff, which may ultimately increase groundwater recharge.

To provide effective conveyance of irrigation water from tube wells, a cement pipe network is considered practical. The main pipeline could be 300mm in diameter and lateral lines 200mm in diameter.

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Bangladesh

Hon'ble Dr. Mahat
Hon'ble Chairman of the ICIMOD Board of Governors
Chairman, ICIMOD Support Group
Distinguished Delegates from Member Countries
Outgoing and Incoming Director Generals of ICIMOD
Ladies and Gentlemen

At the outset, let me express our gratitude, both on behalf of the Government of Bangladesh and on behalf of the Bangladesh delegation, to the Rt. Hon'ble Prime Minister of Nepal, Mr. G. P. Koirala, for opening this 10th Anniversary Symposium on "Mountain Environment and Development: Constraints and Opportunities" and to the Government and the hospitable people of the Kingdom of Nepal for hosting this 10th Anniversary in this beautiful city of Kathmandu. The opening address of the Hon'ble Prime Minister, outlining the prospects of success in and the consequences of failure in having a sustainable and environmentally-friendly development, indeed sets the tone for the Symposium.

I would also like to congratulate ICIMOD and the Support Group for organising this very timely and appropriate topic for a Symposium during the celebration of the decade of its development and accomplishments. Coming at the heels of the Earth Summit in Rio de Janeiro last year, the Symposium could not have been better orchestrated to match the mood and the opportunities for a fruitful discussion and dialogue. However, the success of the outcome will depend on the seriousness and sincerity of commitment of the nations involved in the task of building a better future for the HKH people and for mankind at large. For, if we lose this opportunity, as with the Stockholm Conference on Human Environment 20 years back, we may not have another opportunity to redeem ourselves.

Mr. Chairman

We all are aware that the threat posed to the survival of mankind by the degradation of the environment, caused by the wanton actions of men, is of unparalleled magnitude. It encompasses the whole universe and can only be tackled through collective understanding and efforts. It is now well established that there is an organic relationship between environment and development and not necessarily a conflicting one at that. However, the nature and the degree of this interrelationship are complex and varied. To convert this conflict into consistency calls for deep analysis and understanding of the biodiversity, the impact of resource depletion, and the ecological balance. Nowhere is it more apparent than in the mountain regions. The people in the HKH Region, like any other mountain people, had known this tenuous balance for centuries and tried to order their lives so as not to disturb the balance. Careless modernisation in the name of development, greed and exploitation in the name of a market economy, and the application of development models suited to the plains without understanding this organic relationship of men, mountains, and nature have disturbed the natural balance of resources and consequently disturbed the environment in such a manner as to threaten this globe with disasters; natural and man-made, e.g., floods, droughts, desertification, and global warming and ozone depletion. Due to lack of access and infrastructures,

Statement by

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knowledge, and technology to manage such disasters, the people living in the mountains of the HKH Region have become more vulnerable than others. ICIMOD, being a pioneering organisation specialising in this area, will have to take a lead in the quest for a development strategy that is compatible with the environment.

Mr Chairman,

Approximately a third to half of the population in the HKH countries live below poverty level, the magnitude is even greater in the mountain regions. Provision for basic minimum needs, viz., food, clothing and shelter, education, and health, are urgent. They cannot be postponed any further. To substantially reduce this poverty in the SAARC countries, five of which are represented in this forum, according to the recommendation of the Independent Commission on Poverty Alleviation in the SAARC Region, would call for at least a doubling of the per capita income within the next 10 years, requiring an average annual investment of 27 per cent of the GDP, a nine per cent annual growth rate, and significant redirection of resources from the existing pattern of allocations to the pro-poor activities of employment generation and human resource development. This would also call for enormous mobilisation and strengthening of institutional capability.

In view of the urgency of the matter, the SAARC heads of State/Government, at the 7th SAARC Summit in Dhaka in April 1993, accepted the recommendation of the Commission and decided that each country would prepare a pro-poor action plan based on the conditions of each country and exchange information regarding this in the next summit. While there are some success stories of poverty alleviation in the SAARC countries, upon which such an action plan can be built, and while the experience of China over the last decade, during which it has made enormous progress in poverty reduction, could be utilised, yet to sustain this level of development and to accelerate the process would call for a systematic integration of environmental with developmental concerns. How do you do it? This is a great challenge. This challenge is even more daunting in the case of the development of mountain regions which are handicapped further by the relatively higher growth rate in population, lack of infrastructures, and an increasingly deteriorating ecosystem. Evolving environmentally-friendly models of development and their management is the biggest challenge of the next decade.

There is a considerable amount of literature on the effects of various activities, developmental and non-developmental, on the pollution levels and other determinants of the ecological balance. However what is important to know is how do you make development sustainable and how do you take into account the environmental concerns in the existing development models? or how do you formulate projects, particularly in a cost effective manner, that are affordable and implementable by the developing countries in this region, particularly in dealing with mountain issues? What kind of a change in development strategy will it call for and what institutional capability will be necessary? These will probably constitute the biggest challenges to ICIMOD in its future agenda.

Mr. Chairman,

Water is the most vital natural resource in the life support system on earth. Knowledge and understanding of water resources and their behaviour are basic to all human endeavours. The HKH Region is the longest reservoir of water and a source of innumerable rivers, including some of the mightiest river systems such as the Indus, the Ganges, the Brahmaputra, and the Mekong, and they are perennial sources of water supply in the mountains as well as in the plains in the lower reaches of these mountains. Water management in the upper riparian regions can therefore have very widespread effects on availability and on river-based activities in the lower riparian area.

The natural storage of water in the HKH Region is in the form of snow and ice at higher elevations and as groundwater in the lower watersheds. Depletion of forests on the mountain slopes can again affect the infiltration rate of falling precipitation and affect groundwater recharge. Upland deforestation; affecting surface runoff, loss of topsoils, an increased sedimentation in the rivers, leading to downstream flooding and general degradation of the environment in the HKH Region; is again an issue that is of great concern.

Bangladesh is a typical case of a country that suffers both from the consequences of depleting vegetation cover upland and watershed management in the upper reaches of some of the major rivers flowing from the Himalayas.

Gaps in reliable information, regarding the factors determining water recharge, knowledge, and techniques of efficient water resource management, again can throw meaningful light on mitigation of such situations among member countries, and ICIMOD could possibly play [an] important role in carrying out regional research in this area to find ways that may lead to compatible solutions for all affected countries.

Mr. Chairman,

Bangladesh is a densely-populated country of approximately 110 million people, packed into an area of about 149,000 square kilometres with a forest area of less

than seven per cent. The hilly region of Bangladesh, known as the Chittagong Hill Tracts, covers about 10 per cent of the land area with about one per cent of the population, consisting primarily of tribal people with rich cultural traditions. Five per cent of the land in the Hill Tracts is cultivable and the people primarily earn their living from farm cultivation, popularly known as *jhoom* (shifting cultivation). But indiscriminate felling of trees since colonial days has reduced the forest resources, leading to degradation of soil and reduction of cultivable land.

The Govt. of Bangladesh, to accelerate the economic development of the Hill Tracts, created the Chittagong Hill Tracts Board early in 1976. The main functions of the Board included rehabilitation of the landless tribal peasants and construction of physical and social infrastructures such as dams and other irrigation facilities; roads, bridges and culverts; health complexes; educational institutions for vocational and skill training; scholarships for higher studies; provision of seed capital for income-generating activities; and cottage and small industries.

Careful about the preservation of the rights and culture of the tribal people and to promote local participation in decision making, the Government of Bangladesh, under the Local Govt. Councils' Act 1989, strong local government councils, headed by the elected tribal representatives with wide powers, [both] administrative and financial, over both regulatory and development activities have been established in the three hill districts of Bangladesh. Further, in 1990, the Government created a separate ministry, the Ministry of Special Affairs (now the Special Affairs' Division), to look after the affairs of the people of the three hill districts and other areas. This Division now has been placed under the Prime Minister. This has led to definite qualitative changes both in administration and development works in the Chittagong Hill Tracts' region.

However, with relatively higher population growth rates in the tribal areas and poor sustainability of the base land, more productive farming practices, diversification of crop and non-crop agriculture, and generation of off-farm activities, which are environmentally-friendly, need to be explored. The Bangladesh Govt., in cooperation with ICIMOD, has undertaken programmes for the establishment of GIS, MENRIS, to collect/update geographic and environmental information and has undertaken a pilot project (SALT) for improved cultivation on the slopes of the hills to help improve the economic conditions of the area.

However, time is crucial and the HKH countries will be looking towards ICIMOD to conduct research and studies to develop more productive farm practices and more ecologically compatible technologies to build infrastructures, including energy resources that are ecologically compatible.

Mr. Chairman,

It is said that "poverty is the greatest polluter". While it may be a good slogan for action, I do not agree with the contention. What, however, is true is that poverty is the greatest curse and, given the state of technology, and the gross global production possibility, it is untenable. Hence, ways have to be found to uplift the fate of the poor, particularly those of the HKH Region. This would call for sincere commitment by the World Community at large and the ICIMOD members in particular.

With these words, I wish the Symposium great success, so that it can be mentioned while celebrating the next decade of development of ICIMOD in the 21st Century, that this has been the most fruitful decade in human history.

Thankyou all, ladies & gentlemen.

Bhutan

Honourable Minister
Distinguished Delegates
Ladies and Gentlemen

Representing the Kingdom of Bhutan, I have the honour to convey the warm greetings of the Royal Government of Bhutan to ICIMOD on the auspicious occasion of its 10th Anniversary.

May I also take this opportunity to express the deep appreciation of my delegation to the Chairman of the ICIMOD Board of Governors, Dr. Upadhyay; the Chairman of the ICIMOD Support Group, Dr. Maag; and the Director General of ICIMOD, Dr. Tacke, for the excellent arrangements made for this gathering. I have every confidence that the 10th Anniversary Ceremony will be a great success and that our meetings thereafter will prove very fruitful to all the participants.

Let me also express the gratitude of the Royal Government of Bhutan to all the former Director Generals, and to Dr. Tacke, for the leadership and invaluable services they have rendered to ICIMOD during the past decade. I understand that Dr. Tacke is leaving our organisation shortly on successful completion of his tenure. While expressing our appreciation for his services to ICIMOD, I wish him every success in his future endeavors. At the same time, my delegation wishes to welcome the Director General Designate, Mr. Pelinck of the Netherlands. With his wealth of knowledge and experience, we look forward to working closely with him in the years ahead. I also wish to congratulate ICIMOD for being able to render many valuable services to its developing member countries in spite of several constraints in its initial years of existence. Bhutan has been one of the beneficiaries: a number of young Bhutanese officials benefitted from the technical training courses provided by ICIMOD; and access to ICIMOD publications has proved very useful for our planners, researchers, and rural workers, particularly in the renewable natural resources' sector consisting of the agriculture, forestry, and livestock sub-sectors. We are particularly grateful to Dr. Verma of ICIMOD for his valuable contribution to our fledgling beekeeping and honey industry, which appears to be very promising for enhancing rural income. It is needless to mention that all these beneficial programmes would not have been possible without the active support and generous assistance of all the donor countries.

Mr. Chairman, please allow me to present a brief background of Bhutan before I touch on some environmental and development issues pertinent to our mountains.

Presented By

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The Kingdom of Bhutan, with an area of 46,500 sq.km. and a population of approximately 600,000, is situated in the eastern Himalayas. Approximately 60 per cent of the country is covered with forests, ranging from humid tropical species in the South to temperate mountain and sub-alpine conifers in the North. While agriculture is the mainstay of the people, only 16 per cent of the kingdom's total land area is available for cultivation.

The eastern Himalayas are considered by scientists to be one of the 10 global "HOT SPOTS'. Bhutan, being located in this region, is one of the richest and most fertile regions in the Himalayas. The forest resources in Bhutan are unique in the entire Himalayan areas, constituting a reservoir of genetic material, the value of which is still largely unknown and which can never be replaced once it is gone. Bhutan's diverse fauna and flora include an estimated 700 bird species and at least 5,000 species of vascular plants. More than 60 per cent of the species endemic to the eastern Himalayas are found in Bhutan and plant endemism is believed to be particularly high, with more than 50 species of rhododendron. Therefore, despite its small size, the Kingdom of Bhutan is rightfully recognised as one of the most important areas for the conservation of biological resources. Thus, our environment is still largely intact.

However, this does not mean that we can afford to be complacent. Already, some environmental problems are emerging and I shall now deal briefly with some of these issues.

Bhutan's population is growing rapidly at 2.2 per cent annually. This growth rate, although modest by regional standards, is high vis-a-vis arable land. Due to geographical limitations, there is little room for expanding acreage under agricultural production. Scarce agricultural land has led to slash and burn and shifting cultivation. Approximately over 200,000 acres of land are under this shifting cultivation practice, which is environmentally hazardous - causing forest fires, soil erosion, and landslides. Additional demands for fuel, fodder, building materials, and non-wood forest products are taking their toll on the forests.

Growing **industrialisation** in the fragile Himalayan ecosystem endangers the environment. Environmental control over existing industries is wanting, largely due to the lack of trained personnel and financial resources to enforce industrial pollution control and introduce expensive environmentally-friendly technologies.

While a good **road network** is a prerequisite for the socioeconomic development of a land-locked mountainous country like Bhutan, it causes severe landslides and thereby causes considerable environmental damage in the fragile Himalayan ecology. The environmental costs associated with road construction are considerable.

Like in other developing countries, the development of urban settlements has resulted in some rural to urban migration. This shift in population has two adverse effects. Firstly, the loss of young people from the rural areas leads to decline in farm productivity and, secondly, the urban settlements are burdened with unpredicted problems concerning housing, sanitation, water supply, waste disposal, disease control, etc.

While the Government has achieved significant success in livestock development activities; such as the introduction of improved breeds of livestock, feed and fodder development, and veterinary health coverage; this has resulted in a substantial increase in livestock population and not necessarily the envisaged increase in productivity. This is because culling of unproductive animals is generally not carried out for religious reasons. Hence, there is increased pressure on the limited grazing lands and [on] forests for fodder.

Mr. Chairman, I have just briefly enumerated some of the emerging environmental issues that call for timely remedial measures through an integrated approach of environmental conservation and sustainable development. In this context, I am pleased to inform you that the guiding principles of Bhutan's 7th Five Year Plan (1992-97) are sustainability of development, self reliance, efficiency and development of the private sector, decentralisation and people's participation, human resource development, and regionally balanced development. We believe that we have wisely adopted a policy of an appropriate pace of development, consistent with our capacity and needs. We are fortunate to be in a unique position when it comes to ecological conservation and the implementation of sustainable development programmes. The country entered the development process very late, just about three decades ago, after many years of self-imposed isolation. We are thus approaching development programmes cautiously and with every intention of learning from the lessons and experiences of other countries. The Royal Government of Bhutan is committed to sustainable development, and this goal is reflected in the day-to-day policies and practices.

To cite an example, we are in the process of launching a new development strategy for the Renewable Natural Resources' Sector which integrates and consolidates the functions of the Departments of Agriculture, Forestry, and Animal Husbandry. A sustainable development strategy must, of course, be more than a collection of isolated programmes to protect forests, sustain agriculture, or develop renewable energy sources. It must also be geared towards better meeting the needs of rural populations who, in their subsistence farming systems, depend on all these resources. Their interdependence on these resources is

such that one component cannot be sustained without the support of the other; for example, cattle provide draught power and manure to support crop production and forests supply fodder to support livestock. Therefore, the emphasis now is to improve the productivity and output of the farming units in an integrated manner which is environmentally sound and sustainable. The new approach is aimed at increasing output by intensifying the use of existing land through irrigation, improved varieties of crops and livestock, and rational use of chemicals, while minimising environmental damage by curbing shifting cultivation and open grazing, introducing community and social forestry schemes, and limiting tourism.

A key feature of our new strategy is increasing community involvement and broad-based participation. For instance, our women have always enjoyed equal if not more opportunities and have always played an important role in our society. With good access to education and higher learning, our women are assuming even greater responsibilities through their participation in decision-making as well as in implementation of development activities at various levels from simple peasants to public administrators.

Mr. Chairman, I am happy to note that our efforts in these directions are very much in line with those of ICIMOD and that there is a good degree of convergence in our thinking.

While the Kingdom of Bhutan is no doubt in a healthy situation to launch its environmental conservation and development programmes, due to our relative advantages of still having a pristine environment, of being a late starter on the path of development, of having congenial policies and guidelines; we also share many of the emerging problems and issues with our fellow member countries in the region. Increasing population with concurrent pressure on the land for food, shelter, fuel, and fodder; increasing urbanisation and corresponding demands on municipal facilities; growing industrialisation; and infrastructural requirements with apparent side effects on the environment are just a few examples. We hope that ICIMOD, as the "Global Voice" of the mountain people, will make significant contributions to our efforts to tackle some of these common issues. We in Bhutan are determined to ensure that socioeconomic development is based on the growth of those sectors with the least negative impacts on our social and physical environments -such as the development of our hydropower resources which are comparatively more environmentally friendly than other heavy industries while bringing in substantial revenue. With such programmes in place, Bhutan is confident that it will be able to provide, in the long run, the necessary resources and technical personnel to ensure the conservation of our pristine mountain environment and at the same time to ensure a sustainable development process.

In conclusion, may I once again express the appreciation of my delegation to all those involved in the organisation of the Tenth Anniversary of ICIMOD. I wish ICIMOD all success in its future endeavors towards creating a better future for all the mountain dwellers in the Hindu Kush-Himalayan Region.

Thankyou.

China

Mr. Chairman, Mr. Director General
Ladies and Gentlemen

On the occasion of the 10th anniversary of the founding of the International Centre for Integrated Mountain Development (ICIMOD), please allow me, on behalf of the Chinese government and the Chinese Academy of Sciences, to extend our cordial congratulations, and also to take this opportunity to express our appreciation of the cooperation with ICIMOD over the past decade.

We are very pleased to see that ICIMOD has gained a respected position for mountain development in the scientific world. This significant event represents ten years of hard work of the centre under the leadership of Director Dr. K.C. Rosser and the present Director General, Dr. E.F. Tacke. In the past ten years, ICIMOD has obtained a number of scientific achievements for mountain development, and some of its research results have already been applied with the joint efforts of its member states in the Hindu Kush-Himalayan Region, and great social and economic benefits have been achieved.

The mountain areas of China constitute two-thirds of its total land area, two-fifths of its cultivated land, and one-third of the country's population. China's mountains contain many unique ecosystems and rare fauna and flora. Her mountain's also generate significant effects on the adjacent lowlands. Problems concerning mountain development in China are mainly rapid population growth, forest and land degradation, lower productivity of farming lands, natural disasters, and rural poverty. Different levels of Government have put great efforts into the mountain development of China in the past years, emphasising the integrated development of the mountain economy and environments through research and development activities aimed at reducing pressures on the fragile mountain ecosystems, while promoting agriculture, forestry, animal husbandry, mountain infrastructures, and rural industry to relieve mountain poverty. Progress in this respect has been so far encouraging, however, there is still a long way to go for us to achieve sustainable development of the mountain economy and environment in China. Of course, we cannot talk about ICIMOD's accomplishments without saluting the outstanding contributions made by its Board Members, as well as its staff members, to the nurturing of the organisation and the growth of its programme of activities for mountain development in the Hindu Kush-Himalayan Region.

Since the establishment of ICIMOD, the People's Republic of China, as a member state of this organisation, has actively participated in ICIMOD's various activities; especially the Chinese Academy of Sciences, the national contact organisation for ICIMOD, which has more than one hundred research institutes, of which over 10 have projects related to mountain development. They have closely cooperated with ICIMOD in relevant fields such as watershed management, Seabuckthorn utilisation, Sloping Agricultural Land Technology, Geographical Information Systems (GIS), Rural Energy, and natural resource management, etc.

Address delivered by

PROF. XU ZHIHONG
Vice President
Chinese Academy of Sciences
Beijing

I have been informed that, over the past decade, a good number of Chinese scientists as well as policy-makers have cultivated friendly relations and intensified academic exchanges with ICIMOD. Up to now, there have been 12 cooperative projects with ICIMOD and three jointly-organised international symposia and workshops. In addition, a number of Chinese scientific personnel have been sent to visit ICIMOD, or to attend training courses organised by ICIMOD. At the same time, we have received a number of ICIMOD staff members to conduct field work or short scientific visits in China. Some cooperative projects are quite successful, e.g., Sloping Agricultural Land Technology, the Seabuckthorn Project, and the International Forum on Development of Poor Mountain Areas.

I would like here particularly to mention that we very much appreciate the founding objective of ICIMOD, which is to promote the progressive and effective development of mountain communities through policies and programmes which integrate essential modern development technologies with effective and sustainable resource management of the highly vulnerable mountain ecosystem.

While looking back on the path ICIMOD has trodden over the last ten years, we are satisfied with the achievements that ICIMOD has made. However, lessons of both successes and failures can be learned. ICIMOD's experience deserves systematic analysis and assessment. While it goes without saying that it is highly unimaginable for any international organisation to be 100 per cent perfect in its nascent days, of greater importance, as we see it, is the timely adjustment of ICIMOD's strategies and orientations in line with the needs of the Hindu Kush-Himalayan Region and the international community as well. We sincerely hope that this 10th anniversary celebration itself will coincide with a key step towards self-improvement for ICIMOD, and that it will develop new programmes to meet the challenges of environmental, economic, and social sustainability in mountain communities. We are deeply convinced that more contributions can be made by and [that] greater potentials for mountain development can be tapped from ICIMOD in a wide range of areas in the future.

ICIMOD is a specialised organisation which may follow up and involve itself in the solution of problems having global implications, ultimately linking global issues concerning environment, development, and population to regional considerations of the Hindu Kush-Himalayan area - with its specific geographic location and topographic characteristics that determine that its environment and socioeconomic development not only constitute an integral part of the whole world, but also exert a certain reciprocal influence. In recognition of the above, dealing with regional issues from a global perspective and with global challenges from a regional viewpoint will help ICIMOD to clarify and realise its status, functions, and arduous tasks.

We firmly believe that, with its sound facilities, abundant pool of talents, and various other advantages, ICIMOD is well-positioned to play a bigger role in offering consultative services and in facilitating the transfer of appropriate technologies to mountain areas, as well as in training technical and managerial personnel for development not only in the Hindu Kush-Himalayan Region but also in mountain areas in the world as a whole.

Finally, I wish that ICIMOD will have even greater success and turn a new leaf in the history of mountain development in the years ahead.

Thankyou for your attention.

India

Mountains have grandeur, beauty, and spiritual importance, but they are also a repository of natural resources such as water, energy, minerals, biological diversity, ancient human cultures, and traditions. As we firmly know in India, mountains play an important role in regulating the climate and meteorological conditions of a country.

It is estimated that 10 per cent of the world's population depends on mountain resources. The hill areas of India, particularly the Himalayan and the Western Ghats' regions, constitute about 21 per cent of the total area and support about nine per cent of the total population of the country. The Hindu Kush-Himalayas (which extend over a distance of 3,500km from Myanmar in the east to Afghanistan in the west, and range from the Tibetan Plateau of China in the north to the Ganges of India in the south) contain approximately 120 million people. Our concern for the mountains arises not only from concern for the people living there but also for the survival of the societies in the valleys and plains which depend on mountain resources, especially water resources. The security of the plains also depends upon the ecological security of the mountains and hills.

The Himalayan region covers a distance of about 2,500km from east to west, with a width range of 250-300 km. From these lofty mountains originate the perennial river systems of the Indus, Ganges, and the Brahmaputra, the tributaries and waters of which have brought down fertile soils that have sustained civilisations in the plains. They protect the country from the arid cold winds of the central Asian land mass and play a crucial role in the monsoon rains.

The Himalayan mountains are the youngest mountains and are tectonically very active, leading to frequent earthquakes. More than a dozen earthquakes equal to or exceeding a magnitude of 7.5 have occurred during the past 100 years. For geological, topographical, and anthropogenic reasons, the Himalayan ecosystems are ecologically fragile. They are also banks of tremendous biodiversity. Large-scale human activities in the region, mainly in the past few decades; particularly extensive deforestation, intensive farming on steep slopes, heavy human and livestock pressure on soil, water, and biological resources, and the adverse impacts of roads and mining; have resulted in overall environmental degradation and depletion of life-support systems.

The major environmental problems of the hills are deforestation and soil erosion - both leading to drying-up of water resources; flash floods; and decline in yield of food and cash crops, fodder, fuel, and other minor forest products. Poverty in the hills is directly due to the shortage of materials for basic subsistence, especially where, under traditional land and water management systems, the population-supporting capacity of the land has already been exceeded. The richness of biodiversity has been falling due to overexploitation. The present alarming scenario calls for appropriate action to halt the degradation and, if possible, to reverse it and ensure sustainable development based on ecological principles.

The Government of India has taken several initiatives in the last four decades to restore the ecological balance in the Himalayan region. Among the major recent initiatives was the establishment of the G.B. Pant Institute of Himalayan Environment and Development, in 1988, to evolve strategies for and gain knowledge in sustainable development of the mountain and hill areas and to improve the living standards of the people in these regions. The four core areas identified by the Institute for in-depth research are:

- land and water resources' management,
- sustainable development of rural ecosystems,
- ecological economies and environmental impact analysis, and
- conservation of biological diversity.

The Institute functions through a system of networking with the existing institutions located in the Himalayan region. It also collaborates with ICIMOD.

Statement by

MR. R. RAJAMANI
Secretary
Ministry of Environment and Forests
Government of India
New Delhi

Other Institutions

Apart from this Institute, 15 agricultural and conventional universities in the Himalayan region are contributing to the improvement of knowledge and skills for sustainable development of the region. The Wadia Institute of Himalayan Geology, Dehradun, set up in 1968, is a premier institution for studying overall geology with specific reference to the role of glaciers and glacierised zones in the Himalayas. Its role further extends to civil engineering and environmental management in the hills.

The National Geophysical Research Institute at Hyderabad has an advanced seismological observatory which maintains a complete record of the earthquakes occurring on any part of the earth. The work of this laboratory is highly relevant to the Himalayan region, which has experienced several tremors in the past.

The Wildlife Institute of India, Dehradun, conducts research and organises training and educational programmes in wildlife management.

The Indian Council of Forestry Research and Education (ICFRE) in Dehradun conducts, facilitates, and coordinates forestry research, education, training, and extension. As a National Council, ICFRE is promoting and funding research in the field of forestry.

The Council for Scientific and Industrial Research has set up a regional research institute at Jorhat (Assam) and a laboratory at Palampur (Himachal Pradesh) to carry out scientific research on various aspects related to mountain regions.

Emphasis is being given to the promotion of problem-oriented and location-specific research through a special scheme of action-oriented research programmes for the Himalayan region and for the eastern and western ghats funded by the Ministry of Environment and Forests.

Apart from building up institutional capacities, several programmes are being carried out for the conservation of natural resources and sustainable development of mountain and hill areas. The Himalayan region, particularly the north-east, is very rich in plant and animal diversity. To protect and conserve it for posterity, four biosphere reserves have been identified, namely, Nanda Devi, Manas, Kaziranga, and Namdapha. (This is in addition to the maintenance of several protected areas such as wildlife sanctuaries and national parks.) The Planning Commission of the Government of India started the Hill Area Development Programme (HADP) in 1975. The programme aims at economically and environmentally sound development of the hill areas. The approach includes adoption of sustainable and more productive farming with emphasis on improved soil and water management practices, generation of off-farm employment opportunities, afforestation through government and non-government agencies, reduction of the use of wood for packing horticultural produce, development of area-specific marketing structures, promotion of eco-tourism, adequate environmental assessment of major engineering projects, innovative approaches for family planning and welfare to contain population growth at sustainable levels, promotion of the role and status of women in the hills to make development holistic, and so on.

Major efforts for the improvement of the ecology of the Himalayas are being carried out through afforestation and soil conservation programmes being carried out by the National Wasteland Development Board and the National Afforestation and Eco-development Board. Two Eco-Task Forces of ex-servicemen, in addition to other agencies, are deployed for the eco-regeneration of degraded lands in Uttar Pradesh and Jammu and Kashmir. Field demonstration projects, for integrated, ecological improvement with the active participation of non- government organisations, have been initiated. Thus, in India, we have built up the expertise and capacity to manage the natural resources of the Himalayas and the hilly regions of the country, while also engaging in direct efforts aimed at conservation and a sustainable increase in productivity.

All the major issues related to mountain ecosystems as laid down in Chapter 13 of Agenda 21 of UNCED are receiving adequate attention under the various programmes initiated by India.

We feel that the objectives of ICIMOD are very relevant to India. We also recognise that, in spite of the separate political identities of the States of the Hindu Kush-Himalayas, there is tremendous scope for the exchange of information, technology transfer, and exchange of experiences for protection and conservation of natural resources and biodiversity. External donor agencies have an important role to play in encouraging regional cooperation programmes.

While recognising this, we would like to stress that an institution like ICIMOD can go forward to fulfill its objectives for the betterment of the lives of the people of this region only if it is guided by and works closely with the governments and institutions of the regional member countries. We are happy that a beginning has been made in this, which augurs well for the future of this institution when it is poised to enter a second decade of its existence. Our compliments go to all those in the institution as well as to the member and the donor countries who have striven to build up this institution. Our gratitude also goes to the Government of Nepal for the significant role it has been playing in the evolution of this institution.

Myanmar

Mr. Chairman, Members of the Board of Governors, Esteemed Invitees, Observers, Ladies and Gentlemen.

May I first of all express my gratitude at having the opportunity to attend the 10th Anniversary of the Founding of ICIMOD and the Symposium to be held during the ensuing days.

As I am a newcomer to this family of ICIMOD board members, I would like to give you a short 'Overview of the Mountain Areas in Myanmar' where development activities are being carried out in the spirit of ICIMOD's principles.

The whole stretch of Myanmar's northern territory, to an appreciable extent, is the mountainous lands that are the headwaters of the second longest river-Ayeyarwady- out of the three main river systems in the country. Mynamar, therefore, appropriately opted to become one of the regional member countries of ICIMOD as of 1991, due to the extensive mountainous areas in the country.

The mountainous watershed of the Ayeyarwady River is an important region not only because of the topography, but also because the river itself is the lifeline that supports the economy. Although the area is sparsely populated, it is not without issues and problems of its own. The region is the least developed area in the country, due to its remoteness and geographical natural barriers that cut it off from the rest of the developing lowlands. The population is sparse and its inhabitants mostly ethnic races; the people, being in isolation, are living in subsistence conditions and are most backward socioeconomically. The development of this region is one of the tasks of a central nature for Myanmar, which is in line with the objective of ICIMOD; namely, 'development of an economically and environmentally sound mountain ecosystem and the improvement of the living standards of the mountain dwellers.'

Having subscribed to the objectives of ICIMOD and with a strategy to help with the upliftment of the social well-being and improvement of the economic situations of the hill dwellers, the Government has now established "A Work Committee for the Development of Border Areas and National Races" headed by a Director General within a separate Ministry for the Development of the Border Areas and National Races.

The remote areas, besides being isolated, also have similar problems in all alike areas in the region; the local populace practise unwholesome activities which the government is combating and endeavouring to substitute with the means to earn a decent livelihood by supplementing their income. In order that the stated objectives might materialise, it has become imperative to launch an integrated mountain area development initiative with the concerned line agencies in Myanmar.

Recounting the "Work Committee" terms of reference, it has been charged with the task of the development of the border areas which encompass five States and two Divisions.

By

U TIN HLA
Deputy Director General
Planning and Statistics Dept.
Ministry of Forestry
Yangon

They are the Kachin State, the Chin State, the Shan State, the Kayah State, and the Rakhine State with the common borders of the respective neighbouring mountainous countries. The two Divisions are the Sagaing Division in central Myanmar with a common border with India and the Tanintharyi Division neighbouring Thailand. In all, the area covers some 47,900 square miles with a total population of 2.97 million, comprised of 30 ethnic groups.

Under the Work Committee there are 13 sub-committees, each of which looks after one of the 13 disciplinary issues and problems. Thus the Work Committee has an integrated interdisciplinary nature to resolve the socioeconomic and work issues for the integrated development of the regions.

The organisational set-up thus consists of a Work Committee above which is the Central Committee, which was established in 1989 by the State, to oversee the Work Committee and its 13 Sub-committees. The Minister for the Development of Border Areas and National Races is the Vice-Chairman to the Work Committee.

The Mountain Ecosystem in the Context of Global Environmental Conservation

As stated in Section 13 of Agenda 21, mountains are not only water catchment areas but also sources of multifarious natural resources.

As energy generated from the waters (that are collected in the catchment areas of the mountains) in the dam basins is the source of a country's development: so are the watersheds of the mountains, which are the source of the waters in the dam. Therefore the catchment areas, water, energy, and development are bound up in the system and must be viewed in a holistic way when contemplating strategy development. Myanmar, therefore, sees the integrated regional development of the mountain areas as one to be viewed in a broader perspective of global environmental conservation strategy.

Mountain ecosystems, when viewed in a proper perspective, are a complexity of many varieties of resources. However, they are rapidly changing with use and misuse, so much so there is no longer time to be complacent about the neglect of the mountain areas' defence. As already stated, 10 per cent of the world's population directly depend on the mountain resources. Moreover, it is known that some 120 million people live in the fragile mountain environmental system of the Hindu Kush Himalayan Region.

In spite of the mountain ecosystem being so fragile, particularly in the tropical clime, it is a deplorable fact that there has been many a loud voice heard for the conservation of the tropical rain forests, the wet lands, the ocean, and the coastlines with the mangrove ecosystems, as stated in " A VISION FOR ICIMOD " by Prof. Rhoades; but hardly anything has been mentioned about the conservation of the mountain ecosystems.

Prof. Rhoades also rightly pointed out that the world citizenry and the politicians must be alerted right now to the fact that mountain environmental conservation should have its rightful place in the Global Environmental Development Agenda. For, according to him, there would be no Amazon without the Andes and no Gangetic Plains, the home of over 500 million people, without the Himalayas. In the same way there will be no rice bowl in Myanmar, for which the deltaic region is aptly known, without the watersheds of the Ayeyarwady.

The Professor is not only vehement about the mountain environment but is also an ardent advocate for the conservation of biodiversity through mountain defence initiatives.

Viewing the context of the VALUES, neglecting mountain environmental conservation is not without social costs; for the degradation of the uplands can have a tremendous cost to society as can be seen in the uncontrollable floods that brought, within their trail, havoc untold and misery to a multitude of people downstream. Water courses of the river systems have been filled up with sedimentation and the spilled over waters destroy the arable fields with tremendous losses in crops and money. Such instances are not unknown all over the world today, as a result of waters not being harnessed effectively.

Even so, the watershed region of the Ayeyarwady is comparatively sparsely populated, and the green mantle of forest cover is still extensively intact. The sediments brought down throughout the water course run into about 299 million tons before the river discharges its load into the Gulf of Mottama. The sediment load carried by the river ranked fifth after the Yellow River, the Ganges, the Amazon, and the Mississippi[1]. Hence the utmost necessity

1. Soil Erosion: Quiet Crisis in the World Economy. Worldwatch. Brown, L.R. and Wolf, E.C. 1984.

to contain and arrest erosion in the mountain system of the northern territories through conservation of the highlands.

Yet another aspect is the socioeconomic upliftment of the peoples in the farflung regions who are matter-of-factly cut off from the developing lowland regions. Being in the remote regions, they are at a disadvantage socially. They are also not on an equal standing economically as the outputs of their productive labour hardly find markets due to poor communications. This calls for a multidisciplinary approach to tackle the upland problems.

In the development strategy of the mountain systems in Myanmar, land-based development works are being looked after by the Agriculture and Forests and Livestock Breeding sub-committees. The committees are charged with the task of substituting poppies with cash crops. Animal farms have been set up and pisciculture has been introduced to encourage more wholesome ways of earning a livelihood instead of unwholesome poppy cultivation. Some 136 *kyat* have been expended on these ventures already.

On the social aspects of health, education, housing, and public relations, four separate sub-committees are responsible for them. Health care is looked after by the 98 health centres. Schooling is provided for in the 197 educational institutions.

Infrastructural development is looked after by the Roads and Transport sub-committee, and Communications, Postal services, etc are undertaken by the Communications' sub-committee.

Two more sub-committees are responsible for trade, mining, and mineral exploration. Yet another two sub-committees see to administrative and financial matters. The total budget spent since the inception of the Central Committee in 1989 has totalled some 1445.85 million *kyat*.

In addition to the joint efforts being undertaken by the various line and support ministries; assistance has been obtained from the UN Agencies and International Organisations for development activities.

So far, the institutional and professional activities involved are being undertaken by the State organisations, while UN Agencies, along with International Agencies, provide the inputs and transfer of technology and also cash and services in kind.

In order to have a more effective delivery of outputs and strengthen institutional and professional capacity-building, on the job training has been given along with fellowships and limited internships abroad. We take it to be a great privilege to have had the opportunity of sending a total of 15 trainees to the Nepal centre, 10 of whom received professional level training while the other five received technical level training. We look forward to the fact that, with a well-built professional capacity, the trained personnel will be better equipped for the jobs assigned to them.

At this instance we would like to take the opportunity to mention that the second cycle of training is scheduled to be held in Myanmar, and a case study area has already been identified in Shan State.

In closing, I would like to thank the Board of Governors and the Director General again for extending the invitation to attend this Symposium. I assure them all that we will go back home better equipped and informed with the knowledge and experience gained at these deliberations.

Thankyou.

Nepal

Statement by

DR. I.P. UPADHYAY
Secretary
Ministry of Education
and Culture
His Majesty's Government
of Nepal
Kathmandu

Introduction

The Kingdom of Nepal, situated on the northern rim of South Asia, covers 147,181 sq.km. and contains a complex maze of mountains and ridges, interspersed by deep valleys and lowlands. The country can be divided into three fairly distinct regions: the *terai*, between 60 and 300 metres above sea level; the hills, between 300 and 3,000 metres; and the mountains, above 3,000 metres. These physiographic extremes have resulted in narrow bioclimatic zonation with tropical, temperate, and tundra vegetation types and climates falling very close to one another. Three major river systems drain most of Nepal: the Kamali, the Gandaki, and the Kosi.

About two-thirds of the country are occupied by hills and mountains with steep to very steep slopes. Nepal's lowland *terai* is formed of rich alluvial sediments while the Siwaliks, which stand as a transition between the *terai* and the mountains, are mostly erodible. The nutrient status of soils, as a result, differs from place to place. In Nepal, soil nutrients are also washed away by erosion during the heavy rains. Erosion has been made worse in areas where agriculture is practised, especially on steeper slopes.

Due to its geography and low level of economic development, economic forces and the environment are closely interconnected in Nepal. The experience of the past 30 years of development has clearly shown that neglect of the environment is economically unfeasible in the long run. In many respects, the future economic development potential of Nepal will be greatly facilitated if natural resources and the environment are better managed, but it will be severely constrained if resources and environmental quality are allowed to deteriorate further. The time for improving currently degraded renewable resources is limited. A degrading environment has increased the difficulties of poverty eradication, while the failure to overcome poverty has exacerbated environmental problems. More and more people are finding fewer and fewer easily accessible resources to meet their needs of food, fodder, fuel, and fibre. In the context of meeting the basic needs of a predominantly agricultural population, the importance of the continued availability and diversity of environmental resources, which directly affect soil fertility, water availability, and productivity of farm resources, cannot be overemphasised.

Environmental problems, such as increasing loss of topsoil; deforestation; water shortages; flash floods; and degradation of large tracts of agriculture, forest, and pasture lands; have increased considerably over the years.

Special characteristics of mountain areas, such as fragility; widespread diversity within a very short space; inaccessibility; and a long history of subsistence farming based on extensive linkages between farming, forestry, and livestock sectors; clearly indicate that a sustainable solution to integrated mountain development must be very carefully selected. The development of Nepal has clearly indicated the need for a more carefully integrated area-specific design of development activities which can account for some of these mountain characteristics, comparative advantages, and disadvantages.

Nepal's Development Strategy

The present challenge to development in Nepal is to reconcile the burgeoning demands of a rapidly growing population and its rising expectations with the meagre financial

investment and natural resources available within the economy. This challenge is further accentuated by the erosion and deterioration of the natural resource base and the degradation of the natural environment. The situation is characteristically one which demands high political discipline, severe austerity, and hard economic sacrifices. However, there is also great optimism amongst the general public at large. This represents the basic energy with which the reconstruction of the economy can be initiated.

The Government will now work to assure a minimum standard of living for the poor, particularly those living in rural areas, through the creation of employment opportunities and the provision of basic social services like education, health care services, drinking water, rural roads, and shelter. In the allocation of public outlay, the needs of rural areas and relatively backward regions will be given priority. The proportion of development outlay committed for the benefit of rural areas will be increased to the extent of 70 per cent.

The new planning philosophy will also be reflected in the process and methodology of planning. Development is not just a mechanistic function of capital and technology, it is a social and political process for mobilising and organising people relative to desired consciousness for self-development and fostering civic responsibility and self-reliance in conjunction with development initiatives at the community level. This will be possible only when people themselves are part of the identification, formulation, implementation, and benefit distribution. The Government will, therefore, follow a decentralisation policy in the planning and implementation of development programmes at village and district levels. The necessary decision-making authority to implement this policy will be delegated to the relevant levels.

The main purpose of the Eighth Plan is to give the country a definite direction towards socioeconomic upliftment of its citizens by tackling the problems of economic stagnation and poverty, structural distortions, environmental degradation, and rapid population growth. Although these problems cannot be solved within the span of one five-year plan; definite steps towards solving these problems need to be taken. This is what this plan will strive to do.

The main objective of the Eighth Plan are Sustainable Economic Growth, Poverty Alleviation, and Rural Development and Regional Balance.

Economic prosperity is not possible without achieving a higher, sustainable rate of economic growth. Therefore, one of the main objectives of the Plan will be to achieve a higher rate of sustained economic growth. This will require increased production in all fields. The Plan aims to achieve this objective through the participation of the private sector and through an enhanced rate of participation by people at the community level. It may be noted that there is great complementarity between this objective and equity. The main effort will be oriented towards increasing the productivity of labour and the efficiency of economic investments. Accordingly, areas of high comparative advantages will be identified in agriculture, industry, tourism, and the other sectors. Comparative advantages exist in areas where low cost hydropower and other natural resources can be used in production processes, e.g., energy-intensive industries or irrigated agriculture. The main approach will be based on infusion of improved technology and adoption of institutional innovations.

Sustainable economic growth implies management of available biophysical resources in the most productive manner without depleting or damaging these resources. This means that the demand on biophysical resources should not be greater than their sustainable supply capacity. The present population of the country is already putting a great demand on existing biophysical resources. If the present population growth rate continues, it may not be possible to continue to meet the needs of the population without causing permanent damage to the existing biophysical resource base. Therefore, reduction in population growth rate is essential to achieve the objective of sustainable economic growth.

In spite of previous development efforts, the proportion of the country's population below the poverty line has been increasing. The poor are overwhelmingly concentrated in rural areas. Rural poverty alleviation is the biggest challenge to the Government. Poverty is also the root cause of many of Nepal's current problems, e.g., population growth, environmental degradation, and social ills. Therefore, poverty alleviation will be one of the main objectives of the Plan. The extent of poverty will be assessed and quantitative targets will be set for poverty reduction.

Although poverty is the result of interacting factors, and excessive population on a limited economic base and slow economic growth are its basic causes in Nepal, the weak economic base is the result of natural disadvantages which hinder economic growth: an early stage of development, low productivity, subsistence agriculture, and lack of growth in non-farm activities. The alleviation of poverty demands an integrated and inter-sectoral approach. The fundamental emphasis of this approach will be on the creation of productive employment opportunities; the expansion of social services like health, education, vocational training, and drinking water; conservation; and the efficient management of natural resources. This is what the Plan has emphasised. As part of the planning and implementation process, target-oriented programmes will be implemented to reach those people below the poverty line.

Poverty in Nepal has a spatial dimension. As noted above, despite the policy pronouncement and efforts of previous plans, the disparities between rural and urban areas and among the various regions have grown wider. As a result, there is continuing hill-to-*terai* migration. More recently, there has been accelerated rural-to-urban migration. This trend will continue. These are the main priorities and thrusts of development in the mountain areas of Nepal, and it is in these areas that we look for guidance, cooperation, and collaboration in finding and implementing effective solutions.

ICIMOD and Nepal

Ten years ago at the Inauguration of ICIMOD, Nepal stated that it had the following expectations from ICIMOD.

- She expected significant help from ICIMOD in bridging the gaps in environmental knowledge and in devising sound management methods for the mountain areas.
- She sought ICIMOD's help in research and development of appropriate technologies for energy and local industry.
- She expected help to identify improved institutional methods for carrying out integrated development at the local as well as at the national level.
- She expected help in overcoming shortage of trained personnel and lack of access to the information and experience gained by other countries, both within and outside the region. Nepal also expected to benefit from frequent contact with international scientists and experts who would participate in ICIMOD's activities.

To what extent have these expectations been realised? What efforts have been made by ICIMOD to help Nepal in fulfilling some or all of these? While the purpose of raising these questions is not to make a utility audit of the Centre, some reflections on these questions would be quite relevant.

It would not be out of place to note that, by being the host country, Nepal has probably benefitted the most from ICIMOD's activities. I would just highlight only the most prominent ones. The mountain perspective framework, developed by ICIMOD under its Mountain Farming Systems' Programme, has been a highly relevant methodology for screening the appropriateness of development activities to mountain areas. The Eighth Plan of Nepal has recognised its utility and the preparation of the Agricultural Perspective Plan has utilised this framework as a practical guideline in identifying plans and programmes for different agroecological zones in the country.

The Risk Engineering Training Programme has played a major role in introducing more appropriate approaches to mountain construction activities, particularly for roads. ICIMOD's pioneering role in promoting these techniques through training and dissemination of training materials has been highly commendable.

ICIMOD has also played an innovative role in developing and promoting the use of GIS planning techniques in Nepal. The potentials of these techniques indicate that it will be one of the most useful practical planning tools for mountain areas. ICIMOD has already trained many trainers and assisted in providing technical support for the establishment and development of GIS capability in the country.

There have been some concerns expressed in the past about ICIMOD being too theoretical and not doing enough on the practical and operational aspects of integrated mountain development. A number of activities being promoted by ICIMOD in the field of beekeeping, seabuckthorn, and the demonstration of Sloping Agricultural Land Technology also demonstrate that ICIMOD has begun to introduce a practical side to its activities. Nepal is following these very closely and the initial progress made in these areas is very encouraging. These must now be integrated with extension services so that a much wider dissemination and access can be developed in the future.

At a time when much of the thinking on Mountain Areas is dominated by problems and dismal scenarios, some of these options identified by ICIMOD appear to be encouraging options for the future. Clearly much more needs to be done urgently through identification, testing, and demonstration of sustainable options. In this context, we are not arguing that ICIMOD should not continue its work in the areas of policy reviews, socioeconomic analysis, evaluation, and information exchange; these are also highly essential.

Ten years ago when we, the countries of the Hindu Kush-Himalayas and others concerned with this region, joined hands to establish ICIMOD, it was done with the objective of creating a development institute that would promote integrated mountain development by facilitating information exchange, be a focal point for problem-solving research and training, and provide expert services. Today, as we assess the activities of ICIMOD, Nepal is very encouraged by the development we see at ICIMOD and looks forward to the future with even greater expectations.

Pakistan

In the Name of Allah, The Most Beneficient, The Merciful

Mr. Chairman
Excellencies
Distinguished Delegates
Ladies and Gentlemen

The delegation of Pakistan is proud to have the privilege of delivering its country statement on the 10th anniversary of the founding and establishment of the International Centre for Integrated Mountain Development in the most gracious and beautiful country of Nepal. On behalf of the Government of the Islamic Republic of Pakistan, and on my own behalf, I sincerely thank His Majesty's Government of Nepal and ICIMOD for their kind invitation to participate in the 10th Anniversary of ICIMOD.

Pakistan, as a founding member of the ICIMOD, is located in the western part of the Hindu Kush-Himalayan Region. The mountainous areas of Pakistan constitute over 35 million ha (40%) of the country. These mountains are important for many reasons, notably as the nation's watersheds for the supply of water to the extensive canal irrigation systems, for forestry and the conservation of wildlife resources, scenic beauty, and, not the least, as a centre for livestock, fruit, and crop production.

Like most other countries of the Hindu Kush-Himalayan Region, Pakistan is facing a serious threat of environmental degradation, retrogression in biological diversity, depletion of forests, loss of soils, deterioration of rangelands, and highly disturbed habitats for wildlife.

Ecologically speaking, there exists a great biotic, physical, cultural, and ethnic diversity. Pakistan positively needs to exploit all sorts of these potentials to meet the ever-increasing demands of 115 million people, with an annual growth rate of 3.1 per cent.

Despite highly diversified agro-ecological, socioeconomic, and cultural varieties, the mountain areas are treated like irrigated plains for policy formulation, development of plans, provision of support services, and infrastructural development, as well as for the provision of basic health, education, and communication services.

Although the Government takes a direct financial interest in the well-being of the mountain inhabitants, in real terms the development activities have primarily concentrated on the irrigated plains and around urban centres.

Pakistan, therefore, needs to embark on a comprehensive programme for integrated mountain development to save fertile lands, pastures, wildlife, flora and fauna, forestry,

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watersheds, cultural heritage, and, above all, to improve the life of mountain people. ICIMOD is the institution to assist in this endeavour.

One major area which has not received due attention from ICIMOD yet is the problem of aridity and desertification, which is degrading the natural resources of mountain areas at an alarming rate. Climatic fluctuation and population pressures are the main factors in accelerating degradation. Millions of hectares of land in China, India, and Pakistan are suffering from the menace of aridity. There is an urgent need to conduct research on land - water - crop management systems, water conservation, horticulture and crop production, rehabilitation and improvement in the agro-pastoral system, promotion of water harvesting techniques in the arid mountain areas, and agroforestry development. These are some of the areas that need attention from ICIMOD and the national institutions in the region to develop programmes and projects for maintaining land quality and productivity in the arid areas of the region.

To ensure the tangible impact of ICIMOD activities in the region, it is advisable to select a suitable area in each country where ICIMOD may demonstrate successful interventions with the collaboration of national agencies. Pakistan would welcome such an arrangement.

Pakistan has ample knowledge and know-how in developing valuable fruit crops, such as apples and citrus fruits, and management of alpine pastures and grazing lands and is ready to share these experiences with other member countries of the region with the coordination of ICIMOD.

We have recently established a Mountain Research Cell in Pakistan Agricultural Research Council to strengthen national and international collaboration for the sustainable development of mountain areas. In this respect, we would appreciate ICIMOD's support in strengthening mountain institutional development.

Last year we had a highly successful meeting of all the national and international agencies involved in mountain development. We also held a National Seminar cum Exhibition in Islamabad to celebrate the 10th Anniversary of the establishment of ICIMOD.

We appreciate the efforts of ICIMOD to promote the sustainable development of mountain areas and assure our full support for any collaborative programme or project in Pakistan.

I once again thank the organisers for giving me an opportunity to address this august gathering.

Thankyou very much. Pakistan Paindabad