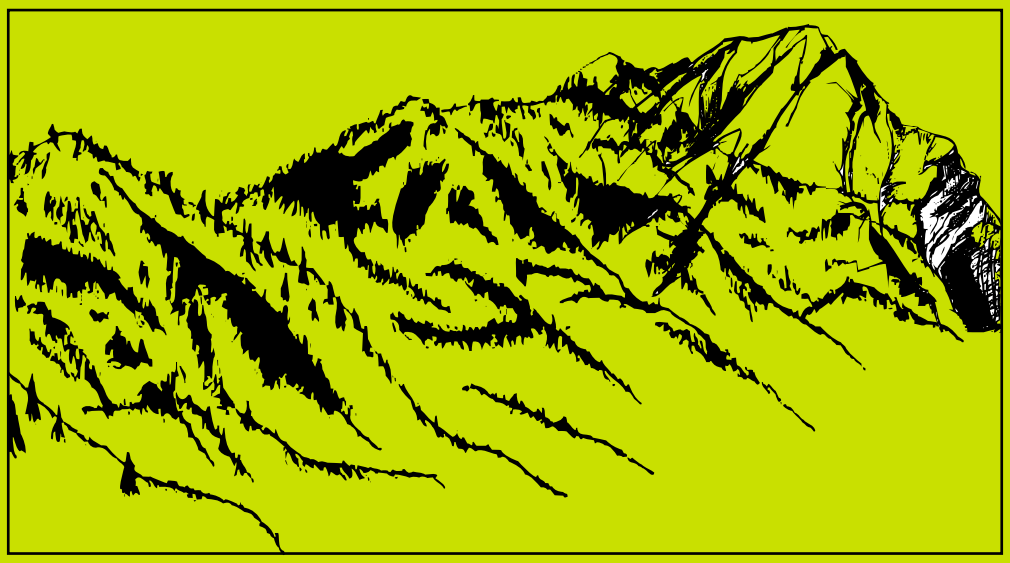
The Indian Mountain Initiative

An **I**ndian **I**nitiative bringing **M**ountain concerns centre-stage



National Policies to Grass-roots Practices

R. S. Tolia
Chairman, CHEA

Central Himalayan Environment Association (CHEA)
Uttarakhand, INDIA

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Indian Mountain Initiative

In the 21st century humankind will increasingly depend on mountain resources such as water, bio-diversity, and recreation.

Arnold Koller

The Central Himalayan Environment Association, CHEA in short, was founded on October 2, 1981, on a day which has special significance for India, being the birth-day of the Father of the Nation, Mohandas Karamchand Gandhi. The society was registered soon afterwards in May, 1982. Arguably CHEA is one of the earliest societies founded in Northern India which had *'the environment in the Himalayas'* as its core concern.

Just two years later in October 1983 more than 150 people from India and abroad, including scientists, administrators, social workers, and practitioners of the environmental regeneration programmes, participated in a Seminar which had the following major objectives : (i) *to quantify the status and to identify the causes of degradation in the Himalayan environment*, (ii) *to contribute towards evolving strategies for the regeneration of the impaired environment*, and (iii) *to suggest the value systems for the overall development of the mountains*. The proceedings of this path-breaking conclave was brought out by CHEA, as ***Environmental Regeneration in Himalaya, Concepts and Strategies, in 1985***. Its recommendations in four broad rubrics consisted of 6 for Geological aspects, 6 for Land-use planning, 9 for Human resources and 15 for Agricultural, Horticultural, Animal Husbandry and Forest resources. It goes without saying that these 36 Specific Recommendations distilled after two days of intensive interaction in the Seminar, have their seminal significance; as above everything these recommendations pre-date most of the recommendations which have ever been made in India over issues and concerns so central to the mountains.

Much water has flown in the great Himalayan rivers and the Indian Himalayas have since been witness to much distress, conflict, degradation, demographic dynamics, political restructuring and impacts of various global revolutions and their regional and local impacts. CHEA has since espoused many mountain causes, engaged itself actively in scores of action-researches and livelihood - related projects and continues to be so involved to this day.

Since the *Rio Earth Summit in 1992* with the inclusion of Chapter 13- 'Managing Fragile Ecosystems : Sustainable Mountain Development' in the UN Conference on Environment and Development (UNCED) the importance of mountain social-ecological systems have been acknowledged for the first time on a global scale. Establishment of CHEA, let it be recalled, pre-dated the Rio Summit by more than a full decade. Certainly the perceptions of October 1983 CHEA Seminar have to be re-evaluated in context of the insights the world at large and the Indian sub-continent in particular has gained and this has called for a re-alignment of CHEA's strategy for the 21st century, both in context of local and global priorities.

Like the Concepts and Strategies which were published in 1985, as result of the Seminar held on 24-26 October 1983 a *Strategy Paper* has been prepared and has been titled as the *Indian Mountain Initiative*, or ***In MI*** in short. This Strategy Paper recounts the Global, Regional and Indian Mountain Scenarios which have evolved since the very beginning, at each level. In a way it allows CHEA, its members or verily every mountain-person to know where precisely the 'mountain-development', and thus mountains themselves, stand in time and space. Its and ours, present co-ordinates, if you like.

The *Indian Mountain Initiative*, the ***InMI***, proposes to repeat again, with some significant modifications, what the first Seminar held by CHEA in October 1983 obviously attempted to do a quarter century again, namely a pioneering a move to catalyze and galvanize *all scientists, administrators, social workers and development practitioners to come together* once more and collectively reflect again not only just on de-generation of environment but also on its intrinsic relationship with development. The Sustainable Mountain Development Agenda, the legacy of the Earth Summit of 1992, has now to be discussed much more horizontally and vertically, and much more frequently than a few stand-alone Seminars and Workshops. This collective reflection has to be undertaken in a much more *Open and Continuous manner*, as has also been recommended by the latest Task Force set up by the Government of India, on the mountain issues and concerns.

The ***Indian Mountain Initiative***, as resolved by the CHEA Council and endorsed by its General Body, proposes to undertake this *Open and Continuous Dialogue* on mountain concerns, (i) through ***Annual Thematic Summits*** *at Naini Tal, on a few selected themes, year after year* , and (ii) *by encouraging* ***establishments of various Thematic Networks*** *spread –over the Indian mountain states on various '* ***mountain – themes and concerns'.***

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Global Mountain Scenario

'In the 21st century humankind will increasingly depend on mountain resources such as water, biodiversity, and recreation.'

Arnold Koller[1]

Rio to Copenhagen

It was with the inclusion of Chapter 13 – 'Managing Fragile Ecosystems : Sustainable Mountain Development' into Agenda 21 in 1992 at the United Nations Conference on Environment and Development (UNCED), or 'Earth Summit', in Rio de Janeiro, that the importance of mountain social-ecological systems was acknowledged for the first time on a global scale.

Chapter 13 of Agenda 21 focused on the following two Programme Areas :

a. Generating and strengthening knowledge about the ecology and sustainable development of mountain ecosystems, and

b. Promoting integrated watershed development and livelihood opportunities.

Agenda 21 of the Rio Declaration on Environment and Development has 40 Chapters in all, which of which has a salience, some more some less.

Chapter I : Preamble

- Humanity stands at a defining moment in history. We are confronted with a perpetuation of disparities between and within nations, a worsening of poverty, hunger, ill health and illiteracy, and the continuing deterioration of the ecosystems on which we depend for our well being. However, integration of environment and development concerns and greater attention to them will lead to the fulfillment of basic needs, improved living

standards for all, better protected and managed ecosystems and a safer, more prosperous future. No nation can achieve this on its own ; but together we can – in a global partnership for sustainable development.

- This global partnership must build on the premises of General Assembly resolution 44 / 228 of 22 December 1989, which was adopted when the nations of the world called for the United Nations Conference on Environment and Development, and on the acceptance of the need to take a balanced and integrated approach to environment and development questions.

- Agenda 21 addresses the pressing problems of today and also aims at preparing the world for challenges of the next century. It reflects a global consensus and political commitment at the highest level on the development and environment cooperation. Its successful implementation is first and foremost the responsibility of Government. National strategies, plans, policies and processes are crucial in achieving this. International cooperation should support and supplement such national efforts. In this context, the United Nations system has a key role to play. Other international, regional and sub-regional organizations are also called upon to contribute to this effort. The broadest public participation and the active involvement of non-governmental organizations and other groups should also be encouraged.

- The developmental and environmental objectives of Agenda 21 will require a substantial flow of new and additional financial resources to developing countries, in order to cover the incremental costs for the actions they have to undertake to deal with global environmental problems and to accelerate sustainable development. Financial resources are also required for strengthening the capacity of international institutions for the implementation of Agenda 21.

Agenda 21 has 40 Chapters, including Chapter I as its Preamble, and the remaining 39 Chapters are as follows. Chapter 13, the Mountain Agenda, has some Chapters which have relevance for mountains. These remaining 39 Chapters are divided in the following four Sections:

Chapter 1 Preamble

(Agenda 21 Chapters with relevance to mountains)

Chapter 26 ***Strengthening the Role of Indigenous People***
Chapter 27 ***Partnerships with NGOs***
Chapter 28 ***Local Authorities***
Chapter 29 Trade Unions
Chapter 30 Business & Industry
Chapter 31 ***Scientific and Technological Community***
Chapter 32 ***Strengthening the Role of Farmers***

Section IV. Means of Implementation

Chapter 33 ***Financing Sustainable Development***
Chapter 34 ***Technology Transfer***
Chapter 35 ***Science for Sustainable Development***
Chapter 36 ***Education, Public Awareness and Training***
Chapter 37 ***Creating Capacity for Sustainable Development***
Chapter 38 International Institutions
Chapter 39 ***International Law***
Chapter 40 ***Information and Decision Making***

FAO, 1994

The Food and Agriculture Organization (FAO) of the UN was given the role of Task Manager for Chapter 13 with a mandate to facilitate and report on the implementation of these two programme areas. In 1994, FAO convened a Task Force including NGOs (non-governmental organisations), development organisations, and UN agencies to coordinate the implementation of Chapter 13.

During the decade following the Earth Summit, many specific initiatives by the governments, international institutions, NGOs and scientific organisations emerged from Chapter 13.

Mountain Forum, 1995

One important initiative was the establishment of Mountain Forum in 1995; a global network for information exchange, mutual support, and advocacy towards equitable and ecologically sustainable mountain development and conservation.

Over the years, however, it became quite apparent that Chapter 13, although being a good starting point, did not adequately address many key issues related to sustainable mountain development, including water resources, biological diversity, cultural diversity

and heritage, adequate infrastructural development for mountain people (access to health services, markets and so on), appropriate recognition and valuation of services and benefits deriving from mountains, the importance of mountains for people's livelihoods and the recreational and spiritual significance of mountains.[2]

To this long list has recently been added yet another aspect–that of 'mountain – governance' both at the macro and meso levels - which now assumes much greater significance when mountain countries jostle for attention and priority in international negotiations related to Climate Change. There are countries which are mountainous and countries which have 'sizeable areas and populations with mountain eco-systems', the latter themselves deserving attention, resources and appropriate governance mechanisms and models. Climate Change dialogues have further highlighted the issue of 'mountain governance' especially within the non-mountainous countries with substantial geographical area and populations subsisting in mountain –ecosystems.[3]

International Year of Mountains (IYM), 2002

In 1998, the United Nations General Assembly designated 2002 as the International Year of Mountains (IYM) through a resolution which was supported by 130 States. It was also agreed to the request made by the Kyrgyz Republic to host a 'Bishkek Global Mountain Summit' in the same year. The International Year of Mountains was an excellent occasion to raise awareness about the importance of mountains to life at a global scale, and to promote action. With the Year, the Mountain Agenda gained new momentum and many new initiatives materialised, including the Adelboden Group out of which the SARD-M (Sustainable Agriculture and Rural Development in Mountains) project emerged, GLOCHAMORE (Global Change in Mountain Regions), and the Mountain Research Initiative (MRI). Also in 2002, the Mountain Partnership was launched at the World Summit on Sustainable Development in Johannesburg to promote and facilitate closer collaboration between governments, civil society, intergovernment organisations, and the private sector towards achieving sustainable mountain development. [4]

As India was the host country to COP discussions in 2002 and the IYM celebrations coincided with the timings of the latter India was represented at the IYM by the Minister of State for Tourism and not the Minister for Environment and Forests, the nodal Ministry. It was illustrative of a situation where when any other subject matter, 'mountain development' in this case, is in contest with the main subject matter of the nodal ministry, 'environment or

Climate Change' in this case, as COP consultations epitomized it here, it is the main subject matter of the nodal Ministry which would receive a higher priority. To reiterate, the Ministry of Environment, gave a higher priority to COP discussions over attending the International Year of Mountains Summit at Bishkek in 2002. Had the subject of 'mountain development or mountains' been the responsibility of any other Ministry that Ministry would have naturally accorded top most priority to the issues under discussions in the Bishkek Summit, besides taking keen interest in the Asian Summit, held at Kathmandu that year, as a run up to the Bishkek Mountain Summit. In the Indian context thus the very anchoring of the subject 'mountain development' in a relevant Ministry today has assumed an importance which earlier had not received the attention due to it. As a matter of fact some of the major issues related to mountain development now stands divided between two central Ministries i.e. Ministry of Environment and Forests and the Ministry of Tribal Affairs; and besides these two a third Ministry, namely the Ministry for Development of North Eastern Region (DONER), now effectively looks after the over-all development of as many as eight Mountain States of India which are located in the North Eastern part of India. More on this aspect of mountain –governance, later, when in the Indian context we discuss appropriate governance mechanism for Indian mountains.

It is an interesting fact that the Asian Summit at Kathmandu and the Bishkek Mountain Summit went totally unrepresented by the nodal Ministry in India, the Ministry of Environment and Forests. This writer attended both the events as a special invitee of ICIMOD. There were a few officers of forest department from Himachal Pradesh who were able to attend the Bishkek Summit as participants sponsored by an internationally funded project. It is therefore not surprising that post IYM 2002 there have been hardly any significant measures which could be said to have been taken as a follow up of IYM 2002.

The institutions, research and development projects, conferences, workshops and others which developed from Chapter 13 and the International Year of the Mountains effectively raised awareness of the importance of mountain systems and some of them initiated and supported successful interventions promoting sustainable mountain development. Nevertheless, despite all these vital initiatives and the UN General Assembly regularly restating the importance of mountain areas, mountain systems have never received the expected attention in the international development agenda. Other priorities tended to dominate the sustainable development agenda such as the Millennium Development Goals

(MDGs) and the Poverty Reduction Strategy Papers (PRSPs), which were largely implemented as national schemes, not considering specific eco-regions such as mountains.

Mountains Gaining Importance

With global climate change and the expected impacts on mountain people and mountain ecosystems, as well as the goods and services they provide to more than half of mankind, mountains are gaining a new importance from national, regional and global perspectives. However, the concrete measures and policy proposals proposed in the form of United Nations Framework Convention on Climate Change (UNFCCC) still lack a mountain perspective, largely because of substantial knowledge gaps from the scientific point of view and an uncoordinated approach by the countries that are most affected by climate change in their mountains.

In Chapter 13, mountain systems across the world were treated uniformly; no distinction was made regarding their socio-cultural and economic roles, which vary significantly from one region to another. In mountains in tropical and subtropical zones –in contrast to most mountains in the developed world –populations are generally growing and mountain systems remain centres of livelihoods for hundred of millions of people. Climate change in general, and related changes in precipitation patterns and the frequency of extreme events in particular, are expected to directly affect crop yields and livestock and have immediate repercussions on the livelihoods of mountain people. Hence, climate change places mountain systems in developing countries and their growing socio-economic vulnerability at the centre of attention. In addition, growing demands for water and hydro energy and other ecosystem services deriving from mountains have led to recognition of the need for more integrated visions addressing upstream-downstream interdependencies, as well as integrated basin-wide management approaches.

In addition, the urgency of adaptation to climate change has redefined the globalising development agenda in terms of calling for eco-region specific development agendas. Finally, mountain systems have suddenly gained global attention because of receding glaciers and growing glacial lakes, which create new vulnerabilities and are, at the same time, the most spectacular indicators of climate change. Creating a more solid knowledge base on the under - researched cryosphere of developing countries will not only serve mountain systems and their people; it will also create highly relevant indicators to assess the efficiency of greenhouse gas emission reduction measures.[5]

Emerging Concerns

Mountain regions are home to many of the world's most sensitive ecosystems and these are vulnerable owing t their high relief, steep slopes, shallow soils, adverse climatic conditions and geological variability. Globalisation, economic policies and ever increasing pressure on land and mountain resources due to economic growth and changes in population and lifestyle are constantly impacting on mountain eco-systems and people and the global climate change has emerged as an additional stressor expected to further exacerbate the impacts of other drivers of change. It is also acknowledged that the exact impacts of climate change on mountain systems and its inter linkages with other drivers of change are yet to be understood fully and large knowledge gaps exist which need to be addressed urgently.

Notwithstanding this high degree of uncertainty it is already clear that the biophysical fragility of mountain ecosystems has direct consequences for the socioeconomic vulnerability of mountain people, estimated at 720 million at 12% of the total world population. Of this nearly 90% - 663 million people –live in developing or transition countries; of these half live in Asia Pacific region and one third in China. About 30% of all mountain people are urban and the vast majority live in rural settings. Mountain areas are ethno-culturally very diverse, with a high diversity of languages and culture. The proportion of indigenous people is also high. These people often guard a vast body of traditional ecological knowledge on how to sustainably manage the land in a challenging mountain environment. Their traditional land management practices (e.g. trenching, terracing and irrigation systems) are still crucial today for low-intensity production systems at high altitude.

Fragility and vulnerability to climate change and other drivers of change, along with growing scarcity of fresh water and energy as a basis of economic growth have created not only new challenges but also new opportunities and possibilities for mountain regions.

Biophysical Fragility

Temperature, Cryosphere, Hydrology, Biodiversity, extreme events and natural hazards are some of those biophysical parameters, considered more relevant in context of mountain eco-systems, which are being monitored very closely by the international scientific community and insights thus gained are being fed into the successive Assessment Reports.

The average warming projected in mountain areas across the globe by 2055 ranges from 2.1^{O} C to 3.2^{O} C, depending on the emissions scenario. The high-latitude mountains of

Asia are expected to experience the greatest changes in temperature.

Alterations observed in the cryosphere are reportedly leading to changes in land surface characteristics and drainage systems and are very likely to have significant repercussions on water availability for mountain and down stream communities. Changes in perennial snow and glacial melt induced by climate change could affect half a billion people in the Himalayan region and a quarter of a billion people in China, who all depend to some extent on melt water supply.

Mountain systems support about half of the world's biological diversity and nearly half of the world's biodiversity hot spots. With rising temperatures upwards shifts of vegetation belts to higher elevations and northward advances in the geographical ranges of species in the northern hemisphere are expected. These processes should not only be regarded as negative, however, they may also bring new opportunities. Mountain species are in the privileged position of being able to migrate upwards into cooler areas, whereas lowland species usually have no other option than to adopt to higher temperatures which is much more difficult. Thus mountain can serve as refuges for species which can no longer be grown in the lowlands and which need to climb to cooler areas.

Frequency and magnitude of extreme events, including floods, windstorms, and droughts will increase, especially in the tropics and higher altitudes where an increase in overall precipitation is expected; more intense precipitation events could trigger flash floods and landslides in mountainous terrains – al these will have significant implications for fragile mountain eco-systems as well as mountain livelihoods and infrastructure.

Socioeconomic Vulnerability

Disproportionate poverty rates, high prevalence of food insecurity and poor health, high dependency on natural resources, marginalisation and limited livelihood diversity are some of the driving forces of mountain people's vulnerability and these are expected to be further aggravated by climate change.

Mountain specificities, specially those defining the constraints part, also are the causative factors which climate change is likely to aggravate further. Poverty –trap, as it exists in the mountainous regions suggest an altogether different approach, rather a basket of approaches, for addressing mountain poverty and marginalisation of mountain people. This in turn suggests an altogether approach for tackling these issues, including an altogether

different administrative structure to administer these regions. Various population-base norms for infrastructure development and development interventions are also called for. Overall 78% of the land surface of the world's mountain areas has been classified by FAO as not suitable or only marginally suitable for agriculture.[6]

An important potential contribution of organically managed systems to climate change mitigation is identified in the careful management of nutrients and, hence, the reduction of N_2O emissions from soils. Another high mitigation potential of organic agriculture lies in carbon sequestration in soils. In a first estimate, the emission reduction potential by abstention from mineral fertilizers is calculated to be about 20% and the compensation potential by carbon sequestration to be about 40-72 % of the world's current annual greenhouse gas (GHG) emissions, but further research is needed to consolidate these numbers. On the adaptation side, organic agriculture systems have a strong potential for building resilient food systems in the face of uncertainties, through farm diversification and building soil fertility with organic matter. Additionally, organic agriculture offers alternatives to energy-intensive production inputs such as synthetic fertilizers which are likely to be further limited for poor rural populations by rising energy prices. In the developing countries, organic agriculture systems achieve equal or even higher yields, as compared to the current conventional practices, which translate into a potentially important option for food security and sustainable livelihoods for the rural poor in times of climate change. Certified organic products cater for higher income options for farmers and, therefore, can serve as promoters for climate-friendly farming practices worldwide.[7]

Livelihood options of mountain communities besides agriculture are often restricted, mainly due to the poor accessibility of the areas in which they live.

Tourism is appearing as a major livelihood strategy in mountain areas in both the developed and the developing world; Out-migration, especially of young household members has also become a vital livelihood strategy which reduces the dependence of mountain communities on natural resources. However, migration can place significant burdens on those left behind, especially women, children and the elderly. Innovative and out of box initiatives converging on skill-centric options, rural-tourism, concepts like 'viability-gap assistance', public private partnership (PPP), organic farming, community-based natural resource based income generating activities will have to be tried out to generate micro-business opportunities catering to local consumption needs. Forest based and small animal

based e.g. backyard poultry rearing livelihood options simultaneously addressing nutritional deficiency and unemployment require to be tried out de novo. [8]

Upstream-Downstream Linkages : Mountains as Vital Providers of Resources and Services

Mountain support many different ecosystems and provide key resources and services for human activities well beyond their natural boundaries. Whereas most of the goods and services provided by mountains have their origins in the headwaters the consumers of these goods and services are mostly in the lowlands. Highland and lowland systems are thus highly interdependent in terms of ecology and economy as well as in social and political terms. The goods and services provided by mountain ecosystems can be divided into three major groups : provisioning services, regulating and supporting services, and cultural services.

Mountain forests (28% of the world's forests are situated in mountains) are highly relevant for protection against natural hazards, ensuring slope stability and preventing or educing erosions, landslides, and avalanches.

Mountain regions within some nations have successfully leveraged their eco system services for receiving additional resources for the maintenance of their natural resources, like forests and the principle of mountain and forests rendering various eco-system services has recently been acknowledged in providing additional resources for the maintenance of uplands and even as opportunity costs. Ecosystem services as classified by the Millennium Ecosystem Assessment (2003) includes services like Aesthetic –cultural (all biodiversity), Ecosystem goods (diverse species), UV protection (biogeochemical cycles), Flood and drought mitigation (vegetation), Climate stability (vegetation), Pollinations (insects, birds, mammals), Pest control (invertebrate, parasitoids and predators), Purification of water (vegetations, soil microorganisms, aquatic microorganisms, aquatic invertebrates), Detoxification and decomposition of wastes (leaf litter and soil invertebrates, soil microorganisms), Soil generation and soil fertility, Seed dispersal, Colonization of bare sites and succession etc.[9]

Implications of Environmental Change for Mountain and Downstream Communities

The weakening of mountain ecosystem services due to climate change and other drivers of change will affect the lives and livelihoods of hundred and millions of people in mountains

and a much higher number in downstream communities. This is particularly true in the case of water. It has been estimated that the reduction of water supplies during the dry season associated with increasing glacier retreat and loss of mountain snow will affect up to one sixth of the world's population (over one billion people), predominantly in the Indian sub continent, parts of China (over a quarter of a billion people), and the Andes (up to 50 million people). The Ganges alone provides water to about 500 million people. Decreasing flows of water from mountains will be inextricably linked to a decline in agricultural productivity, with serious implications for the food security of mountain and downstream communities.

Mountain Systems as Global Early Warning Systems

Mountain systems, particularly the cryosphere, serve as important early warning systems for global climate change impacts. Because of their high sensitivity, environmental changes become visible earlier or are more pronounced in mountains than in the lowlands. Data on higher temperatures in the mountains resulting from increasing concentrations of greenhouse gases and aerosols in the atmosphere – for example as a result of the impact of black carbon and brown cloud over Asia on the Himalayas – culd help in understanding changes in climate parameters and assessing the efficiencies of global mitigation efforts. Reducing the knowledge gaps with regard to changes of different climatic change and the consequences of the associated changes.

Emerging Opportunities

Globalisation and various revolutions like democratic governance systems, decentralisation in governance, information technology and communication have set in motion changes and various other drivers of change have sensitized mountain communities as never before. Emerging economies, particularly in Asia have also impacted on the constraints with which mountain regions used to suffer and increased flow of resources have while accelerated the pace of growth at the same time it has widened the existing economic disparities. Mountain regions which have from very inception remained backward have started demanding increased share in national resources and in countries where they had remained neglected or marginalized have started demanding their share in the fruits of development and growth.

As natural resources become scarce and central to the process of growth the regional disparities are addressed through various centralized, both developmental and maintenance.

Backward regions are provided various relief packages, changing national policies, strategies and even major structural administrative mechanisms.

Climate change enhances further growing awareness of the importance of mountain ecosystem goods and services and calls for the specific attention of the global community and creates new opportunities for mountain people which need to be seized. The emerging opportunities for sustainable development in mountains include the increasing demand demands for mountains as places for recreation, for high value mountain products, and for fresh water as a scarce resource, as well as the recognition of the potential of mountain as carbon sequestration, as a refuge for species which can no longer survive or be grown in the lowlands and for the generation of hydro-power. The financial and social remittances from labour migration flowing back to mountain areas offer further opportunities.

Framework Conditions Conducive for Sustainable Mountain Development

For the first time since the Rio Earth Summit we are experiencing an emergence of awareness of the importance of mountain system for the sustainability of the mountain ecosystem goods and services. In addition, both the conviction that adaptation calls for tailored packages that are specific to different eco-regions, and the availability of potential funds for help to mobilize the required resources for adaptation and mitigation initiatives, are further attracting global attention to mountain systems.

The Adaptation Fund of the Kyoto Protocol, for example, includes a specific clause to favour project or programme proposal submitted by developing countries which include fragile mountain ecosystems that are particularly vulnerable to the adverse effects of climate change (Adaptation Fund Board 2010).

REDD (Reducing Emissions from Deforestation and Degradation) or REDD-plus (enhancement of carbon stocks) are other important mechanisms under the United Nations Framework Convention on Climate Change (UNFCCC) which offer incentives for developing countries to reduce emissions from forested lands and invest in low carbon paths to sustainable development (UN-REDD 2010). Given that 28% of the world's forests are situated in the mountain area (IPCC 2007 a,b), mountains bear a huge potential for carbon storage and sequestration and are therefore in a privileged position to attract such funds for climate change mitigation.

Countries who pro-actively brought 'forest and environment' into their priority list in terms

of national priority setting and created National Parks, Bio-diversity Parks and took strong legislative measures to protect their forests and promote community-based forestry for the first time stand to gain from this global concern for deteriorating forest cover and fragile eco-systems, including mountain eco-systems, can now make full use of the services these forests and mountain eco-systems are providing and which are now eligible for carbon funds under UNFCC Conventions. Forests are no more a constraint for development and now it is for such nations to make judicious use of the funds available under the Framework.

Countries and sub-national entities which took special measures to promote the so called 'green initiatives' like organic farming, forest-centric rural development initiatives like Bamboo Mission, Bio-fuel Mission, Eco-tourism, micro and small hydro-power generation stand to gain from the funds available for climate change mitigation and adaptation.[10]

Climate Change thus is an opportunity for mountain ecosystems and mountain people. Regardless of the lack of information on detailed impact scenario it is clear that mountain systems will be essential building blocks for long term sustainable global development. Now it is entirely up to the mountainous countries and those countries with sizeable areas under mountain eco-system to build and improve their respective individual capacities to take up the challenge to collaborate in order to benefit from these historic and unprecedented opportunities.

Existing Mountain Conventions and New Initiatives

Mountain systems are usually home to several independent countries. These countries usually begin to cooperative regionally because they experience common constraints and must overcome common challenges for sustainable development. One example of this process is the Alpine Convention, which led to Carpathian Convention, both legally binding agreements. These Conventions have a high significance for science and policy in mountain areas, and also for development and cooperation.

UNEP is supporting new initiatives in mountain regions where there are many ongoing conflicts like the Caucasus, the Balkans, and Central Asia. The road to a solution to these conflicts is long and difficult but no sustainable or long term development is possible without a certain degree of cooperation. The goodwill of the local population is going to be very important and this will grow with the engagement of the scientific community and the

political authorities and will depend on the improvement of the system supporting their lives.

Strengthening mountain partnerships through legally binding agreements

(UNEP, FAO, Mountain Partnership, EU)

Alpine Convention (1991) 1995, 2002

Carpathian Convention (2001), 2006

Initiative for the Caucasus

Initiative for South-east Europe

Initiative for the Central Asian mountains

Consortium for Sustainable Development of the

Andean Region (CONDESAN)

International Centre for Integrated Mountain Development

(ICIMOD) in the Himalayas, 1983

Adapted in 1991, the Alpine Convention brought together al the Alpine countries and the European Community to collaborate on mountain development and protection, and has provided much inspiration in this regard, particularly in Europe, Asia, Latin America, and Africa. Following this, the International Year of Mountains 2002, also had a very positive effect on new initiatives.

The Carpathian Convention entered into force in 2006, only five years after the first initiative by the government of the Ukraine. Collaborative arrangements such as the Alpine and the Carpathian Conventions have proven themselves to be useful approaches and powerful

incentives for mountain related action and support (UNEP 2007). In relation to the successful political cooperation, focusing on a river basin could be of great interest in the HKH region. The International Commission for the Protection of the Rhine (ICPR 2008) is a good example of such riparian cooperation. Under the umbrella of this Commission, there are nine states - one river basin. For the benefit of the Rhine and of all its tributaries, the members of the ICPR Switzerland, France, Germany, Luxemburg, Netherlands and the European Commission successfully cooperate with Liechtenstein, Austria, Belgium and Italy. Focal points of this cooperation are the sustainable development of the Rhine, its floodplains, and the good state of all waters in its watershed. In 2003, a new convention for the Rhine entered into force. Currently the Commission is focused on the chemical and ecological state of the river, holistic flood prevention and flood protection, and the implementation of the European regulations and directives. Progress since 2003 is quite impressive - water quality and the biological state of the river have improved, animal and plant species have increased, flood retention areas have been created and since 2006, salmon and other fish are again migrating upstream from the North Sea.

Another example is the 1995 Agreement on Cooperation for the Sustainable Development of the Mekong River Basin. Water sharing is discussed between the four lower riparian states, Thailand, Vietnam, Laos PDR, and Cambodia ; however, China and Myanmar are not yet fully participating (UNU 2008). After two decades of work by the international law commission, an international convention has not yet entered into force. Mountain conventions or river conventions not only point the way to the future but also show the political difficulties in reaching the goal. Climate Change and scarce water resource are going to produce conducive conditions for avoiding conflict and finding peaceful solutions.[11]

2

H K H Region Mountain Scenario

ICIMOD, 1983 - 2010

The International Centre for Integrated Mountain Development, ICIMOD (at Kathmandu, Nepal), the most important inter-governmental organization in the Hindu Kush Himalayan (HKH) region, has not received the attention which was due to it in India, more particularly by the Indian mountain states. Established in 1983 with the dual mandate of reducing poverty and conserving the environment in the Hindu Kush-Himalayan (HKH) region-an area that stretches from Afghanistan in the west to Myanmar in the east, and from the Tibetan plateau of China in the north to Ganges Basin of India in the south ICIMOD together with its national and international partners is stated to have been working to develop and provide integrated and innovative solutions for a multitude of problems encountered by the people of the region. From a small documentation and training centre it is now grown into a well recognized 'mountain knowledge and learning centre'.

Twenty five years ago the HKH represented just an isolated barrier dividing the Asian continent but today primarily thanks to the enormous growth of the economies of China, India, Pakistan and Bangladesh this very mountain chain is considered a system with corridors for exchange of goods and services. The passes and valleys are either being used for road construction and railway projects or are perceived as such for the near future. The geo-political situation within Asia has lead to India following a policy of 'Looking East' for its North Western states and China and India have taken substantial steps to link their internal communication links to their bordering neighbours. While China has nearly brought its roads to the Indian borders India is about to connect its own border-roads to these motor heads. The geo-political situation within Asia has changed dramatically. Communication links between Nepal-India and India-Bangladesh-Mynamar are also up for a major make over.

Quinquennial Review & Strategic Shift (2006)

ICIMOD fielded a review mission in May/June 2006, its fourth five yearly exercise,

reviewing the advancement of the work of the Centre and proposing possible future reorientation. The Fourth Quinquennial Review (QQR-4) focused its analysis on the implementation of decision by the Board based on QQR -3, particularly the Mid term Action Plan (MTAP). The Review Panel mission comprised of two regional members Professor Linxiu Zhang, Ph.D. from China and Dr. R.S. Tolia from India and two non-regional members, Dr. Guenter Schmidt from Germany and Dr. Andreas Schild from Switzerland.

The QQR Panel in its recommendations identified the (i) Areas for Continuity – Knowledge Pooling and packaging, exchange of information and experiences among member countries, Capacity building of member country institutions, (ii) Areas needing more efforts and (iii) Areas needing innovation and change. ICIMOD, the Panel felt, had to become more meaningful for the HKH region, had reposition itself by taking up relevant development issues aimed at reducing poverty and improving the livelihood of the people; it also had to grow out of its image of being donor-driven and project-defined organization; redefine operational priorities –by including the dimensions relevant for change and poverty reduction through multidisciplinary approach, redefine core competencies and offering strategic problem-solving services in mountain development to regional governments and stakeholders and changing its corporate philosophy from one of programme/project implementation to that of service provider and problem-solving institution. A strategic change implied not only raising contributions of the RMCs but also greater ownership and responsibility by the members. The Panel also expected the donors to confirm their long-term commitments conditioning their commitment to compliance with the recommended policy orientation that could be verified by an external evaluation after three years.

Poverty alleviation and mountain development, was identified as an area where ICIMOD was required to acquire core competence in analysis and trends in poverty and policy and investment of governments and donors for reducing poverty. The Centre was found in a situation where it could establish links with other mountain areas which it would have to do making poverty reduction a common denominator guiding its activities.

Water resources, Environmental Services and Impacts of Climate Change in the context of Clean Development Mechanism (CDM) and the vulnerability of the HKH region to climate change, Disaster mitigation and management, Deforestation and loss of bio-diversity, Land use and management, Migration and Drudgery of women were identified

by the Panel as possible thematic thrusts for the Centre. In the final analysis the Panel made recommendations for raising more funds and diversification of sources, improvement in economic and operational efficiency and as regards alignment of human resource development needs to the strategic challenges before the Centre. Concluding, the Review Panel remarked, that addressing strategic development issues of the HKH region will be a prerequisite enhancing the meaning of ICIMOD. This was going to be a condition for sustainable financing of the institution and also increased regional ownership. Panel clarified that continuing and improving on the existing strengths will just not be sufficient for ICIMOD's future development. The need to change was being recommended, the Panel said, not just for the sake of sustainability but because it was considered a question of very survival of the institution. ICIMOD had no option but to become more meaningful, otherwise the donors will discontinue funding and the RMC will not adopt the institution. [12]

New Strategic Framework, 2008

Two years down the line the Strategic Framework of ICIMOD speak of Three Strategic Programmes which serve as a framework for meeting challenges posed by Globalisation and climate change in the coming years. These consist of, (i) Integrated Water and Hazard Management, (ii) Environmental Change and Ecosystem Services and (iii) Sustainable Livelihoods and Poverty Reduction. Integrated Knowledge Management plays a crosscutting role as ICIMOD essentially is a knowledge, learning and enabling centre where information and knowledge are developed and exchanged, and where innovation, technology transfer, and effective communication are used to empower its regional member countries.

With climate change and the accompanying increase in temperatures and irregularity of precipitation the Himalayas have become of central concern in terms of availability of water and the provision of ecosystem services. The products of mountain ecosystem not only impact on the livelihoods of the 2000 million mountain inhabitants but also directly affect the food security and economic development of the 1.3 billion people living downstream.

These factors have substantially changed the conditions for ICIMOD –whereas 25 years ago the initiative was taken by international institutions and the donor community, today the regional member countries of ICIMOD have taken an initiative in a context in which

FAO, IUCN and UNEP. The Government of India has accepted the National Action Plan for Climate Change with a special Mission on the Himalayan Ecosystems; the National Planning Commission has prepared a state of art report on the mountain states on the direction of the National Development Council and the Ministry of Environment and Forest has created an advisory committee on mountain development.

Additionally the Department for Development of North Eastern States, all mountain states or states with mountain ecosystem, has been upgraded to a Ministry level, underscoring importance accorded to the mountains. Similarly, for the first time in history, the Government of PR of China has organized a high level conference in Beijing on a strategy for sustainable mountain development. In all these development a clear footprint for ICIMOD is discernible. In a recent exercise of self - assessment ICIMOD has enlisted the following processes :

1. Mountains have now moved from periphery to a central concern–the mountains have become a subject of international declarations without substantial change of investment priorities, changes in livelihoods systems and economies have made it evident that mountain areas merit special attention as highly fragile systems and reserves of freshwater, mountain issues are now achieving high international political and scientific visibility,

2. As the idea of establishing ICIMOD has come from a few scientists and development practitioners, the programmes and projects were largely conceived and designed following the initiative of the international community and scientists at ICIMOD, resulting in low level of participation from the RMCs, with weak sense of ownership- this operating principle has changed significantly in recent years, regional countries have now built institutions of their own and funding of the same is taking place; ICIMOD programmes and projects are now prepared through consultation with relevant partner organizations in the RMCs, the RMCs have developed their own missions, vision and activities, RMCS have increased their contributions to ICIMOD, in addition there are a growing number of programmes in the frame of ICIMOD vision and these are funded by the national governments directly,

3. There is now a shift from technological solutions to policy options,

4. From direct implementation to facilitation-the Centre is now becoming more of a learning and facilitating platform-scaling up responsibilities is primarily with the RMCs.

Based on 25 years of experience and taking the regional and international stakeholders' perspective into account ICIMOD now perceives the following prospective role for itself in near future :

1. Promoting the mountain agenda – the relevant international organizations have not yet set priorities in support of mountains (neither have the various multilateral funding agencies e.g. World Bank, IFAD, ADB and so on) – ICIMOD can play a critical role in raising awareness and drawing public attention to the Himalayan Ecosystem and environment in order to enhance regional and global commitment and action to support adaptation processes in the mountains and strengthen upstream-downstream relationship,

2. Facilitating regional co-operation – while the need for transboundary regional cooperation has now been realized, implementation is a real challenge given the geo-political situation- ICIMOD as a non-political regional organization is in a unique position to support and facilitate regional dialogue and cooperation among the RMCs through provision of relevant data, knowledge, and understanding, as well as serving as a platform for exchange of ideas,

3. Facilitating information and knowledge sharing for disaster risk reduction- reducing the risk of natural disaster is critical for poverty alleviation and sustaining development efforts- ICIMOD can play the role of a catalyst in sharing information and real-time data in order to reduce such risks and vulnerability,

4. Filling the missing link and reducing scientific uncertainties – because of the dearth of consistent scientific data, the IPCC report (2007) categorized the HKH region as a 'white spot' on the global climatic map –ICIMOD can play a role in reducing the scientific uncertainties, creation of regional data base on different aspects of the mountain regions and strengthening regional cooperation for timely sharing of data and information,

5. Valuing mountain ecosystem services-help in estimation of economic value for these services-enhancing the livelihoods of the poor mountain communities,

6. Facilitating cross-country learning in adopting and mitigating climate change effects-much valuable knowledge is being generated by the HKH institutions, mostly limited to their own country territory-documentation and dissemination amongst RMCs,

7. Adopting global knowledge for the HKH region- knowledge, experience and wisdom generated in Alps, the Andes, and the Rocky mountains for the HKH region through customization, as a bridge between global and regional knowledge centres, and

8. Building closer strategic partnerships within and beyond the region.[13]

Mountain Initiative on Climate Change

Supporting regional initiatives, proposed by RMCs, on climate change is yet another proof of ICIMOD fulfilling its commitment towards the objective of its establishment. Realizing the need for mountainous countries and countries with mountain ecosystems to reinforce the mountain agenda into ongoing UNFCCC processes by developing a common initiative on Mountains to address the growing problems of climate and global changes. It is foreseen that a concrete decision may not emerge at the 16th meeting of the Conference of Parties (COP-16) to be held in Cancun, Mexico in December 2010. This has created an opportunity for the mountain countries to collectively discuss common concerns and ideas and emphasize the need to strategically align the Mountain Initiative aimed at integrating the mountain agenda in the negotiations which are to follow at Cancun. This is likely to pave the way for advocating the agenda of sustainable mountain development (SMD) in a more coordinated and concrete manner at the Climate as ell as preparatory meetings for the Rio + 20, including the COP 17 in 2011.

The Mountain Initiative taken by the Government of Nepal was kicked off with a two – day International Expert Consultation during 23-24 September held at ICIMOD headquarters. It was planned to be a preparatory meeting for a Ministerial Conference of mountain countries (scheduled for spring 2011) and the activities during COP 16 related meetings in Cancun. The technical documents generated under the Mountain Initiative along with the outputs of the International Expert Consultation as well as the Ministerial Conference were proposed to be fed into the UNFCC related meetings in 2011.

The timings was also considered significant in the light of the Rio + 20 Summit planned for 2012, wherein the progress of Mountain Agenda is expected to be assessed and discussed both the climate change and sustainable development perspectives, creating an opportunity for the Mountain Initiative to capitalize on synergies between climate response action and sustainable development objectives. The Mountain Initiative is therefore seen embedded in a broader strategic agenda which makes the activities led by the Government of Nepal meaningful and long-term oriented.

Conclusions and Recommendations

Recognizing that there is an urgent need for mountainous countries and countries with mountain ecosystems of the world to reinforce the mountain agenda in response to global change, into ongoing multilateral environmental negotiation processes notably the upcoming UNFCCC meetings and the Rio_20 conference, by developing a common vision, strategy, knowledge base and approaches, an International Expert Consultation Meeting on Mountain Initiative on Climate Change was organized jointly by the Ministry of Environment, Government of Nepal and the International Centre for Integrated Mountain Development (ICIMOD) in Kathmandu on 23-24 September 2010.

The main purpose of the meeting was to start a process of global and regional consultation involving the concerned climate change experts for charting out the future roadmap for the Mountain Initiative (MI) with a long term strategy reiterating the global mountain agenda in the UNFCCC and the Rio +20 process and beyond. The Mountain Initiative was launched by Government of Nepal in response to the call made by Prime Minister of Nepal during the COP 15 summit asking all the mountain countries and stakeholders to come together and form a common platform to better advocate mountain issues in climate change negotiations so as to ensure that mountain concerns get due attention in the climate change agreements and related decisions.

The meeting was attended by high level policy and decision makers, national experts involved in UNFCCC process and representative from academia, international organizations, and development partners. Experts from Afghanistan, Bangladesh, Bhutan, Canada, China, Columbia, India, Italy, Kazhakistan, Lao PDR, Nepal, Peru, Tadjikistan, Switzerland, Experts from ICIMOD, Mountain Partnership Secretariat (FAO), World Bank, UNEP, UNDP, DFID, ADB, DANIDA, FINNDA and others participated in the meeting. Observers also joined from academia, research centres, networks, and in individual capacity.

The International Expert Consultation Meeting agreed to the following conclusion :

1. Commends and supports the Mountain Initiative of the Government of Nepal and recommends sharing the conclusion and recommendation of this International Expert Meeting in future forums including the proposed Ministerial Conference.

2. Establishment of the **Contact Group** based on the membership of the participating countries in the expert meeting to disseminate the conclusions of the meeting as well as

to raise awareness of the key stakeholders and policy and decision makers in their respective countries and the UNFCCC COP meetings,

3. Establishment of a **Technical Working Group** comprising of Dr. Dinesh Devkota (Nepal), Mr. Douglas McGuire (Mountain Partnership), Ms Laura Madalengoitia Ugarte (Peru), Ms Gulmira Sergazina (Kazakhistan), Ms Lorena Santamaria Rojas (Columbia). Dr. R.S. Tolia and Mr John Drexhage will be independent members and the Ministry of Environment, Nepal and ICIMOD will be represented by Dr. Ganesh Raj Joshi, Secretary and Dr. Madhav Karki respectively. A draft of the Terms of Reference for the Technical Working Group will be developed and shared within a month of the finalization of the document.

4. All the invited Countries will be requested to nominate a Focal Institution and/or Focal Person for future communication for improved and effective coordination.

5. Advocacy activities, especially by improving knowledge management and communication capacity of the participating countries will be planned and implemented to promote the inclusion of a mountain specific funding priority within the UNFCCC financing framework, this will require proactive and coordinated effort in the COP 16 meeting and beyond, which Nepal and ICIMOD should lead and seek support of mountain countries and stakeholders.

6. Conclusion of the Expert meeting will be used to plan and organize regional consultation meetings in the year 2011 so as to better prepare for the ministerial level meeting as planned by the Government of Nepal in 2011; the Ministerial Meeting is expected to endorse a clear structure and road map for the Mountain Initiative.

7. The Meeting further opined that while specifying the scope of the Mountain Agenda, it is important to give cognizance of the respective positions of countries in the UNFCCC negotiations such that Mountain Initiative (MI) is in line with key national and regional positions.

8. Regarding the membership, the meeting recommends that mountainous countries as well as countries having mountain ecosystems priority from both the developed and the developing countries will be encouraged to join the MI.9. In order to make the MI more effective and garner international support for it, the meeting set the objective to mobilize more countries notably from Africa and Latin America reflecting the lack of

representation from Africa and only two representatives from Latin America in this International Expert Consultation Meeting.

10. The meeting highlighted the need for initiating knowledge development, capacity building and communication related activities in future under the MI in all the regions.

11. The Experts also emphasized the need to launch more effective capacity building, training and advocacy related activities, regionally and globally, using the recommendations of this Expert Group meeting so as to enable mountain countries to advocate for the inclusion of a mountain specific issue and funding priority within the UNFCCC process starting from the preparatory meeting of the Parties to China and COP meeting in Cancun, Mexico.

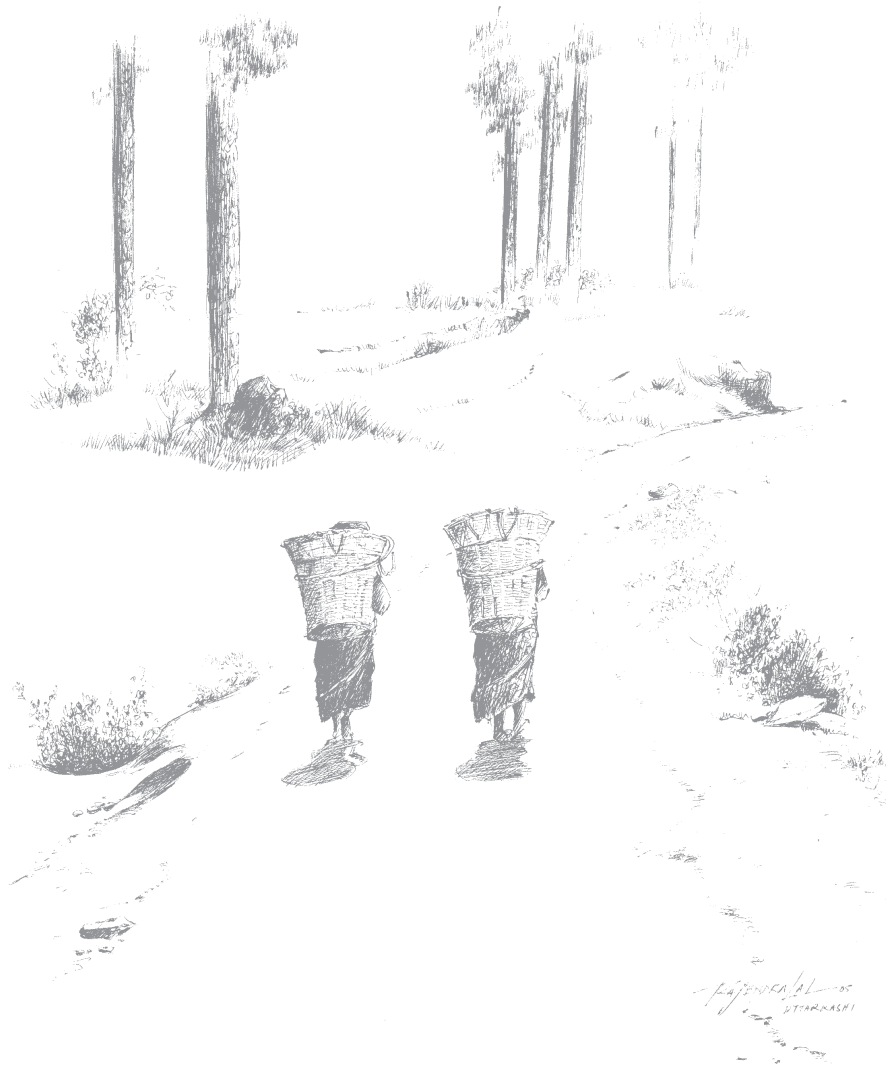
12. The meeting also recommended to the Ministry of Environment, Nepal to prepare for the international Ministerial Conference by organizing regional consultation meetings in different regions and building capacity of the mountain country teams including that of the MI secretariat at the MoE Nepal for raising coordinated and stronger voice at future international climate meetings especially, COP 16 at Cancun and beyond including Rio + 20 preparatory meeting in Switzerland.

For moving forward Government of Nepal in collaboration with ICIMOD had prepared the following two publications, which were found useful by the participants :

1. Framework Paper on Mountain Initiatives, and

2. Funding Instruments, mechanisms and opportunities; how to make them more supportive to mountain ecosystems.

Based on the consultations MI secretariat has already circulated the first draft of Mountain Initiative Status Paper for COP 16, Cancun and the participants and the Experts have been requested to send in their comments and observations. The process in presently on.[14]



3

Indian Mountain Scenario

The Indian Himalayan Region (IHR), including the Himalaya proper and the north-eastern hill states, lies between 21 ^{O} 57' and 37 ^{O} 5 N latitudes and 72 ^{O} 40' and 97 ^{O} 25' E longitudes covering an area of 5,33,000 km^2 (16.2% of the total geographical area of the country). It stretches over 2,500 km from Jammu & Kashmir in the west to Arunachal Pradesh in the east, covering partially/fully twelve states of India, but its width varies from 150 km to 600 km at different places.

The IHR is home to four crore (40 million) people (3.8% of the total population of the country). Historically the region had been controlled by different principalities / tribal coalitions / monastic orders, and then came the colonial regime that lasted till the independence of the country. Since independence, the system of democratic governance ushered in new institutional arrangements with some specific arrangements to protect and maintain socio-cultural identities of the mountain societies in the IHR. More than 170 of the total 701 scheduled tribes of India inhabit IHR.

Broadly divided into eastern Himalaya and the western Himalaya, each region has its unique culture and cultural diversity. Ethnic mosaic of western Himalaya differs conspicuously from that of the east. A wide spectrum of biophysical gradients when superimposed with socio-cultural diversity make the IHR all the more heterogeneous, necessitating formulation of location specific developmental plans as well as finding solutions to the local problems. There is a distinct social awareness on conservation and natural resource management as reflected by the origin of world famous environmental movement Chipko and the existence of a number of traditional institutions like Dzumsa, Mangma, and Dwichi in the IHR. Much less publicized is the fact that even during the colonial period it was in the western Himalayan region that the concept of community-forestry, as Van Panchayats, has come about and the colonial administration had to withdraw its centralizing tendencies i.e. reserving forests under governmental control those forest tracts which had traditionally been perceived by the villagers as their own. The concept of Van Panchayats is far more legally sustainable,

as it takes its birth from the Indian Forest Act itself, when compared to the joint forest management concept which was legally mainstreamed in 1990s. [15]

Hill Area Development projects

Up to the Fifth Five Year Plan (1974 -79) the approach to development of the country was uniform and there existed no appreciation of the unique problems which the mountain regions experienced. This was the period when the rural extension (National Extension Service) mechanism of the country was stabilized, development blocks were established, and the main challenge was to become self- sufficient in country's food requirements. It was during the Fifth Five Year Plan that the problems of hill areas was recognized. Accordingly, a Special Hill Areas Development (HADP) was initiated during this period. A project, called Hill Area Development Project, was sanctioned for the Barasyuin Tahsil of Pauri and one for Nugba Block in Manipur. Thus, Hill Area Development Agency of Pauri became the first beneficiary of this new intervention, the very first in the country. In Almora, during the same period, IGADA (Indo German Area Development Agency) project was under implementation.[16]

HADA, Pauri (1974–76) experimented with potato development, apple -cultivation, vegetable marketing, piggery and other animal husbandry schemes whereas IGADA mainly concentrated on improved hill- agricultural extension. These were first generation area development programme both in the country as well as in any hill region. Nungba project was short-lived as the law and order situation in Manipur did not prove conducive to development activities. These pioneer projects commenced a differential understanding related to development in mountains and these perspectives have since informed all subsequent development efforts.[17]

As these area development projects, which in the mountains gave rise to the watershed development approach, could not make much head way, and in their present manifestation all development efforts tend to address environment concerns as well. The fact that the various development approaches followed in the country so far have not had the desired impact is borne by the observation made by the Working Group constituted during the Eighth Five Year Plan (1992-97), which said : "**The hill areas of the country are faced with certain peculiar problems inhibiting the process of development. On account of the difficult terrain, variable agro-climatic conditions, distinct socio-cultural features, the hill areas have remained backward."**

Progressive Appreciation of Mountain-perspective

The fact that as late as in the year 2008 Prime Minister of India was compelled to make an observation in the 54th Meeting of the National Development Council about the relative backwardness of the mountainous regions of the country and Planning Commission of India, in response, set up a Task Force "**for analyzing the problems of hill States and hill areas and for preparation of a proposal for comprehensive development of these States and areas, over the next three to four years,**" proves how serious is the apex planning body of the country itself about the phenomenon of relative backwardness of the mountainous regions of India. Perhaps, a conscientious reader of this Task Force Report might be tempted to concur with the observation this latest Task Force has made about the fate of all Reports preceding this one. This Task Force mentions that "the feedback from those Task Force members, who (all) are deeply rooted in the IHR is that most of these recommendations (made by all previous Task Forces / Working Groups / Committees) have remained unimplemented."[18]

As described in the preceding Global and Regional Mountain Scenarios the Mountain Agenda would be seen as a major conceptual product of the Rio Earth Summit, 1992. It would thus be apparent that any Task Force or Working Group which was constituted in India prior to 1992 could have suggested a well-rounded concept akin to Mountain Development, leave aside a Sustainable Mountain Development, would indeed be quite presumptuous and extremely optimistic.

In hind-sight, therefore, the recommendations of the National Commission on Development of Backward Areas (B. Shivaraman, 1981), Task Force on Eco-development in the Himalayan Region (M.S. Swaminathan, 1982), Working Group on Hill Area Development (1985) and even the Action Plan for Himalaya (1992) and Expert Group on National Policy on Integrated Development of Himalaya (Dr S.Z. Qasim, 1993) would appear quite relevant and appropriate, even as purely theoretical contributions on conceptualization of sustainable mountain development. The Action Plan for Himalaya, primarily a product of the G.B. Pant Himalayan Institute of Environment & Development and the Qasim Report, in a way also reflect a collation of all concepts and perceptions converging on development of mountain development. It is all the more creditable in the sense that the various streams of thoughts e.g. complimentarily of the hills and plains (present day upstream-downstream linkages), sub-watersheds, women's participation, agro-forestry and pasture development

(ideas of 1981 vintage), focus on soil, forests and water as principal resources and forming core strategy, correct land-use (of 1982 vintage), areas with average slopes of 30o and above to be designated as hill areas, similarly designation of hill blocks/talukas, special mechanisms for fund-flows for new categories of Himalayan Hill areas, re-emphasis on upstream-downstream linkages, mainstreaming several consolidated concepts, adoption of integrated view of ecological, economic and sociological aspects of hill areas, emphasis on active participation of hill women in the fulfillment of their basic needs of food, fuel and fodder, identification of problems related to shifting cultivation, fuel policy and restricting growth of towns in hill areas (of 1985 vintage) are some concepts and impressions which all were certainly ahead of time and were gradually becoming what may be called the 'given wisdom' of the day. One could see, with little effort, that most of these concepts ultimately found their way into the 40 Chapters which in their totality became the Agenda 21, and Chapter 13, the mountains themselves, an embryonic sustainable mountain development.

In sum, a close examination of the conceptual contributions made by the National Backward Areas Commission (1981), Task Force on the Eco-development (1982), the Working Group on Hill Area Development (1985) and even the Action Plan (1992) and the Expert Group on the National Policy on Integrated Development of Himalaya (1993) have not gone without acknowledgement as majority of these have got reflected in refined and extended form as various Chapters of the Agenda 21 of the Rio Earth Summit.

Recognizing the fact that all preceding seminal cerebral efforts had apparently failed to leave any discernible foot-prints, either as a programme or tangible project, or an implementing agency or administrative mechanism, led the Expert Group on National Policy on Integrated Development of Himalaya recommend establishment of a Himalayan Development Authority a corpus which it called National Himalayan and Environment Development Fund. While other recommendations of this Expert Group were more or less re-iteration of most of the previous recommendations or paraphrasing of the previous concepts, the clear focus in 1993 converged on (i) an Institution, and (ii) a Corpus, for implementing recommendations on development of the Himalayan region. It was a most logical evolution of all previous rounds of brain-storming by experts on the phenomenon called the mountains. The Qasim Committee Expert Group Report raised very high expectations and nothing tangible materialized it resulted in a sense of great frustration all over the Himalayan region.

Not very surprisingly the Planning Commission of India was perceived, in almost all informed circles, as the main villain which had cleverly shelved the first tangible manifestation of rising Himalayan voice, long overdue for attention at the highest level. The Expert Committee consisted of renowned experts on mountain issues and shelving of Qasim Committee recommendations by constituting various Committees/Groups within the Planning Commission fooled no one. By so delaying an overdue intervention the Government of India and Planning Commission were only help aggravate a situation from going bad to worse. The North Eastern India, which manifested almost everything wrong in the Indian Himalayas started showing signs of unrest, which bordered on cessation. Historically, the North Eastern States, almost entirely mountainous represent all 'mountain specificities'. Being predominantly tribal and animist in their ethnic composition the mainstream religion has been Christianity. Unlike the western Himalayan states, most of the states are dominantly tribal, which is a major distinction of the North East from the western Himalayas, where they are a very small minority. Besides being a minority, the tribes of western Himalayas have been either Hinduized considerably or are of Buddhist persuasion. The tribes of western Himalaya have never been known to be violent or anti-state. The belligerent nature of the western Himalayan tribes coupled with long over-all neglect precipitated a situation which could have been avoided had the Government of India and the Planning Commission taken the advise tendered by the Expert Group headed by Qasim.

Finally an Authority and a Corpus Fund for Mountains

The recommendations made in 1993, it would seem, did not after all go unheeded altogether and it was simply not possible to put the clock back. Within a period of just four years there was a High Level Commission Report on Transforming the North-East Region, arguably a region which had suffered the most in terms of economic development, which now threatened to even tear the region asunder from the Indian body-politic. So it was the Indian Prime Minister's economic package and offer of unconditional talks announced on his visit to the north-eastern region in 1995 that again aroused great expectations of the mountain people. The Commission appointed under S.P. Shukla to recommend measures to create good infrastructural facilities and bridge Basic Minimum Service Gap to bring the North East at par with the rest of the country. Recommendations covered various infrastructural requirements, nearly a separate plan for the entire backward mountain region, and additional mechanism for resource mobilization and creation of North Eastern Development Council. The North East Council, is in effect the Himalayan development

Authority for a part of the Himalayan region, the eastern Himalayas and the various additional resources provided for, no less than the Corpus which the Qasim Expert Group had recommended. It would thus be seen that not only Qasim Expert Group's two recommendations now stand implemented but they have first been conceded for the region which deserved it the most, namely the North East Region, which had become so backward that it nearly came to a situation where the mountain people had started demanding total autonomy, even independence from the Union.

Ministry of DoNER is today seen as a catalyst in mobilizing focus and efforts in accelerating development in the Region and it was this mandate that the Government of India had decided to establish a Ministry dedicated solely for the development of the North East. The Non Lapsable Central Pool of Resources (NLCPR) fund was put in place so that the financial resources meant for the North East (10% of the GBS of Central Ministries) remain committed to he Region. Ministry of DoNER has not limited its functions as merely a funding agency but it is expected to function as an Ambassador of the North East in Delhi. It perceives itself as an agency to ensure a comprehensive development of the North East, which means that it should "be intimately involved with all aspects of development of the Region".

Even a cursory perusal of the Annual Report of the Ministry of DoNER would show how through Special Sectoral Summits held for Power, Road, Commodity Boards, Flood Control, Inland Water Transport, Tourism, Air Connectivity, Rail Connectivity, IT and Telecommunication, Education, Arts, Sports and Culture, Agriculture and Allied Sectors, Banking, Industries and Credit Issues the Ministry has been able to fast-forward various actions between the States and the related central Ministries on the one hand and gain extremely valuable insights and learnings from within the region. Operations of the Non Lapsable Fund mechanism has ensured quality expenditure and reduced wasteful expenditures. A Vision 2020 has acted as a Road Map and the Look East Policy has provided to the region an outlet for the want of which the Region had felt depressed for long. India's trade with ASEAN nations has risen from US $ 2.4 billion in 1990 to US $ 23 billion in 2005. Promotion of border trade with China is an important outcome of India's Look East Policy. The Look East Policy relates to initiating, resuming dialogue and trade with China, Bangladesh and Myanmar.[19]

Ministry of Mountain Development : Coverage of all 11 Himalayan States

It was only logical now that a recommendation for extending the special administrative

mechanism and funding dispensations would be made and it it came by way of recommendations of the Task Force on the Mountain Eco-Systems for the 11th Five Year Plan, which in one dedicated Chapter has demanded inclusion of the remaining three mountain states of western Himalaya with the Ministry for Development of NER, renaming it as Ministry for Mountain Development and all special dispensations extended to the eight states of the eastern Himalayas. It has laid stress that these additions are. And must not be, at the cost of the eight mountain states of the eastern Himalaya. This Task Force constituted for the Forestry Sector has also suggested shifting the subject "mountain development" to a Ministry like the Ministry for Development of NER, which has a comprehensive view of mountain development and anchoring of "mountain development" subject in the proposed Ministry of Mountain development, after addition of three western Himalayan states with the existing eight states of the eastern Himalaya.

Logically the Task Force on Mountain Eco-systems incorporates in its recommendations the entire range of issues which have been raised world-wide in context of the Climate Change discourse. The recommendations made by this Task Force fully reflects the urgency attached to the various issues which are germane to the UNFCCC and climate change consultations.

Thus, even the recommendations of latest Task Force underscore the fact that India's mountains continue to be under scanner and through various Task Forces and Working Group recommendations all major issues are being highlighted and these get taken note of and addressed suitably by he concerned agencies.[20]

Looking back, and to sum up, from 1981 to 1993, in just within a period of 12 years the consciousness about mountains have deepened, the Earth Summit at Rio soon informed every body that not only in these parts but the world over the mountains are also perceived as a physical phenomenon, which quite like the oceans around us, impact on climate and livelihood issues in a substantial sense. The Sustainable Mountain Development Agenda, in brief called the Mountain Agenda also spread over all the continents. In 1997 a Department for Development of the North Eastern Regions and a Council for its over all planning are established. As the immensity of task becomes apparent and the neglected mountain regions of the east become impatient with the pace of development of a much delayed intervention the Department is upgraded to a full-fledged Ministry. Not only the status of the administrative mechanism is upgraded the various investment flows are also

strengthened and made irreversible. All Central Ministries are also directed to chip in with their individual special efforts.

Uttarakhand and National Action Plan on Climate Change (NAPCC)

After establishment of the Ministry for DoNER the most important political development as regards mountains are concerned is certainly creation of the 10th Himalayan and 27th Indian state, Uttaranchal to be later renamed Uttarakhand 2006. Uttarakhand, also a long neglected mountain region, was conceded along with other two most backward regions, Jharkhand and Chattisgarh, when situation started taking turn for the worst. Uttarakhand also had to follow a course of agitation and unfortunate treatment of agitationists at the hands of UP administration. November 2000 ultimately saw arguably the last of the mountain region taking shape as a political and administrative entity. Even though it received the status of a Special Category state, a Special Industrial Package for development of industries, relatively liberal annual plan outlays and Central Finance Commission awards its development has not been smooth or without obstacles. Forest Conservation Act, 1980, judicial pronouncements of the Supreme Court, particularly Gowdaburman ruling which triggered a GO of UP government pronouncing all former civil and soyam land as coming under the definition of 'forests' and a particularly patronizing attitude of the forest bureaucracy has come to be perceived by the mountain people as the main obstacle to its speedy development. Hydro-power generation, long perceived as a major resource for this mountain state has also met reservations of environmental activists, both from within and outside. Recent withdrawal of NOCs given to three major hydro-power projects on the Bhagirathi and a few elsewhere have brought the various environmental issues to the fore and it has every potential of seriously disturbing a decade old relative political peace.

During the last decade yet another major development affecting the mountains has been the National Action Plan on Climate Change. Recognizing that climate change is a global challenge India has decided to engage actively in multilateral negotiations in the UN Framework Conventions on climate change (UNFCCC). The overall objective of the Indian climate change initiative is to establish 'and effective, cooperative and equitable global approach based on the principle of common but differentiated responsibilities and respective capabilities, enshrined in the United Nations Framework Convention on Climate Change (UNFCCC)".

The Indian Action Plan assumes that not only sustainable production processes are to be

promoted but equally sustainable lifestyles across the globe. The Indian approach has also to be compatible with its role as a responsible and enlightened member of the international community, ready to make its own contribution to the solution of a global challenge, which impacts on humanity as a whole. The success of the Indian national efforts would be significantly enhanced if the developed countries affirm their responsibility for accumulated greenhouse gas emissions and they fulfill their commitments under the UNFCC, to transfer new and additional financial resources and climate friendly technologies to support both adaptation and mitigation in developing countries. It is the principle of equity that must underlie the global approach must allow each inhabitant of the earth an equal entitlement to the global atmospheric resource. India has strongly reaffirmed that its own per capita greenhouse gas emissions will at no point exceed that of developed countries even as it pursue its own development objectives.

For the Indian mountain states, these are the basic principles which they have to adhere to, when they pursue their own demand of due share within the overall national pie, when they seek additional resources to catch up with the development within the Indian Union itself and as they look forward to the Climate Change discourse with a mountain perspective. It has to be realized that if the mountain perspective has the potential to allow additional climate finance on that basis then the Indian stand must allow bat for those additional resources, as the mountain states deserve every possible resource to address the mountain deficit of resource, mechanisms, suitable national and global policies, which favour an equitable treatment to the mountain people just as the developing nations demand a similar treatment from the developed nations. Requirements of the mountain regions, within the nations which have mountain eco-systems have to be given due priority and every effort that would ensure this must receive their full support in all international parleys. Indian stand has to simultaneously ensure that in the climate change negotiations the mountain eco-systems receive their full attention as the gains of the world's mountain nations are equally to flow to the mountain eco-systems which are situate in non-mountain nations like India. This stream of thought and action must be incorporated in the over all Indian stand in all climate change negotiations. It is in this context that an Indian Mountain Initiative on climate change become highly relevant in a country with sizeable area of mountain eco-systems, like India.

NAPCC, as India's own self imposed domestic effort to follow a sustainable growth model seven guiding principle, as follows:

1. Protecting the poor and vulnerable sections of society through an inclusive and sustainable development strategy, sensitive to climate change,
2. Achieving national growth objectives through a qualitative change in direction that enhances ecological sustainability, leading to further mitigation of greenhouse gases,
3. Devising efficient and cost effective strategies for end use Demand Side Management,
4. Deploying appropriate technologies for both adaptation and mitigation of greenhouse gas emissions extensively as well as at an accelerated pace,
5. Engineering new and innovative forms of market, regulatory and voluntary mechanisms to promote sustainable development,
6. Effecting implementation of programmes through unique linkages, including with civil society and local government institutions and through public-private –partnership, and
7. Welcoming international cooperation for research, development, sharing of transfer of technologies enabled by additional funding and a global IPR regime that facilitates technology transfer to developing countries under the UNFCCC.

Eight National Missions

Eight National Missions constitute the core of the National Action Plan representing multi-pronged, long –term and integrated strategies for achieving key goals in the context of climate change. Several of these programmes are in fact already part of India's current actions but they may need a change in direction, enhancement of scope and effectiveness and accelerated implementation of time bound plans. These are:

1. National Solar Mission,
2. National Mission for Enhanced Energy Efficiency,
3. National Mission on Sustainable Habitat,
4. National Water Mission,
5. **National Mission for Sustaining the Himalayan Eco-systems,**
6. National Mission for Green India,
7. National Mission for Sustainable Agriculture, and

8. National Mission on Strategic Knowledge for Climate Change.

Just as several chapters of Agenda 21 were relevant for chapter 13 i.e. Sustainable Mountain Development, similarly the remaining seven National Missions of the NAPCC have relevance to the Fifth National Mission, namely National Mission for Sustaining the Himalayan Eco-systems, The National Mission for SHE is to the NAPCC what Chapter 13 is to Agenda 21 as applicable to India.

National Mission for Sustaining the Himalayan Eco-system

Significantly, NMSHE acknowledges the central importance of "an observational and monitoring network for the Himalayan environment" which is proposed to be established to assess freshwater resources and health of the ecosystem." The Indian Mountain Initiative (InMI) will have the opportunity and Indian mandate to supplement and complement the global Mountain Initiative as under NMSHE it has been stated that "Cooperation with neighbouring countries will be sought to make the network comprehensive in its coverage. It goes on to stress the requirement of regional co-operation when it adds that (there will be a) "need to exchange information with the South Asia countries and countries sharing the Himalayan ecology". [21]

The Himalayan ecosystem has 51 million people who practice hill agriculture and whose vulnerability is expected to increase on account of climate change. Community-based management of these ecosystems will have to be promoted with incentives to community organizations and panchayats for protection of and enhancement of forested lands. In mountainous regions, the aim will be to main two-thirds of the area under forest cover in order to prevent erosion and land degradation and ensure the stability of the fragile ecosystem.

The NMSHE, going by the phrasing of the Mission narrative does seem to factor in mountain agriculture, as distinct from the conventional agriculture, research gaps in study of the cryosphere and mountain hydrology etc and underscores a clear need of joint efforts of climatologists, glaceirologists and other experts" will have to guard against making the Mission a purely scientific mission and ensure that the mountain perspectives which have been gained since the Rio Earth Summit find their fullest expression in the conception, management and implementation. Especially implementation of this Mission, the only one which is region-specific unlike the others which are generic, also results in

a paradigm-shift in the entire governance of the Indian Mountain regions and the unique ecosystem they anchor therein.

Like the Sustainable Mountain Development, chapter 13 of the Agenda 21 envisioning a Sustainable Global Development, the SMD must factor in all possible dimensions of sustainable governance, and therefore it must also primarily address and include what may be termed a Mountain Governance uniquely designed to address these specific demands based on gained insights and perspectives. While the mountain countries will have to reflect on a paradigm shift in their entire governance system, the nations with sizeable area under mountain ecosystems will have to reflect and put in place mountain governance mechanism which do not represent a replica copy of what obtains for the low-lands of their dominant land mass. 'Mountain –governance', factoring-in 'mountain specificities' and 'mountain perspective' have to be different and distinct from just 'governance', as we have known it so far for the low-lands. Just as every discipline seems to change its entire characteristics as soon as a prefix of 'mountain' is affixed to it, similarly it follows that the 'mountain-governance' has to be different and distinct from just 'governance' of the low-lands. 'How' and 'what' aspects of this 'mountain-governance' have to be thoroughly fleshed out and designed in parallel to implementation of the Mountain Agenda in the 21st century.

Mountain Agenda for the 21st Century

Rio + 5 review had identified *Special status of mountain areas*[1], *Legal and institutional mechanisms*[2], *Investment in mountain development and conservation*[3], *Resource flows*[4], *Status of women and children*[5], *Cultural integrity and biological diversity*[6], *Monitoring progress*[7], *Exchange of experience and information collection and dissemination* [8] and *Food security*[9] *and Mountain forests*[10], as some of "key priorities for which activities for conservation and development" could be intensified .

It was also anticipated that "institutional arrangements for the implementation of Chapter 13" would continue to evolve over the next few years, at all levels. Even though consensus had been reached on any important issues in terms of what needs to be done the real challenge was expected to be to find :sustained political will and financial means" to actually make it happen. Seven prerequisites for a 21st Century Agenda were also identified, as follows :

1. Mountain perspective,

2. Mountain reciprocity,

3. Mountain devastation,

4. Mountain hazards,

5. Mountain awareness,

6. Mountain knowledge and research, and

7. Mountain policy.

Mountain Policy requires a Mountain Development Ministry

Given the disadvantaged economic and political position that most mountain regions occupy vis-à-vis the low-lands, it was considered absolutely critical that mountain scholars and planners turn their attention to the formulation of workable policies which are informed by the best possible mountain science. Policies will need to be sensitive to the complex trade-offs that will inevitably occur in the process of sustainable development. It has been accepted that global societal interests in ecosystem functioning (hydrological cycles, biodiversity maintenance, clear air) cannot be addressed and paid for by the small holder mountain farmers who are often on the brink of starvation, or at least face severe seasonal food shortages. The global ecosystem solutions are long term (decades) while food shortages and hunger is a short term matter (days and weeks) that demands immediate attention.

The policy implication of this is that the larger society will have to compensate the local mountain people for their efforts to save the mountain environment. But also the mountain communities must also be open to innovations and initiatives for improved management of mountain resources and ecosystems. This is precisely where creativity and mountain perspective are needed. Policies applied in the lowlands, or in the developed countries, will be difficult to implement in places such as the Andes and the Himalaya (for example, regulations are difficult to enforce, taxes and subsidies are costly to administer, hand-outs can be lead to dependencies, and so on).

Two policy directions have been suggested, (i) grass-roots focused and the other 'macro-focused'. These reflect conservation with a small 'c' (locally executed) and Conservation with a large 'C' (global, transnational, national). The first is to design action programmes

buttressed by policy instruments and tools (credit, technologies, infrastructure and so on). These should be provided to complement the indigenous resources (human and biological) since all are required for sustainable mountain development. A mountain perspective approach would appreciate local knowledge. Social capital, and biological resources, which need to be complemented by outside resources and knowledge.

A second policy approach (ii) is to directly compensate mountain people for preserving and enhancing mountain resources that benefit human kind. This approach must be based on an equitably-oriented ecological economics. One radical solution which has already been suggested is to implement a financial 'reverse debt swoop' in which policy favours direct compensation to mountain nations and communities at a rate equivalent to the real economic value of the mountains for global ecosystem functioning and society. [22]

It has been rightly concluded that in order to preserve the mountains, "all stakeholders with access to and interest in mountains –from the smallest landholder to the biggest multinational corporation-must help construct the new map that will lead towards a sustainable future. This premise, and this premise alone, must jointly underscore our Mountain Agenda for the 21st century. The following six components had been highlighted way back in 1997 :

1. political will and public awareness,
2. guarantees of human rights, ancestral claims, and basic needs of mountain populations,
3. appreciation of, and support for, indigenous mountain knowledge and management systems,
4. rejuvenation of a policy-relevant science of montology, monetary compensation and ethical commitments and
5. open and continuing dialogue between stakeholder groups.

4

Indian Mountain Initiative

The Indian Mountain Initiative, or InMI in brief, takes into account the Global Mountain scenario and the Regional Mountain scenario, as narrated in the preceding first two chapters. It particularly takes note of the fact that there exists now a Mountain Initiative of the Government of Nepal technically assisted by the only inter-governmental organisation in the HKH region, which has India as one of the eight Regional Member Countries.

Besides the Mountain Initiative announced in the Copenhagen meeting of COP now there exists a National Action Plan on Climate Change, which has a specific National Mission on Sustainable Himalayan Ecosystem (NM SHE) which expressly speaks of regional co-operation among South Asian countries in context of the climate change, these two major developments in the region suggest there has to be an Initiative to complement the Mountain Initiative in context of the on-going global discussions of climate change.

The Indian Mountain Initiative is being initiated in order to ensure that all Indian Mountain states, who presently have no mechanisms in place where all stakeholders could hold open and informed dialogues, from time to time. could be provided one such forum.

As the latest Task Force on hill states and hill areas has also suggested that "the IHR States must agree to a common essential platform for regular interaction and from therein, decide on a common essential plan for the region." It has recommended establishment of a Himalayan Development Forum for all IHR States. In view of the fact that various similar recommendations of the various Working Groups and Task Forces have not had any tangible manifestation in terms of concrete timely action at the national level, the Central Himalayan Environment Association, CHEA, based at Naini Tal, in Uttarakhand has resolved to take upon itself to follow-up this extremely timely and relevant recommendation of the Task Force and attempt to get all stakeholders involved in the process and create and generate sufficient momentum that through the implementation of the Mountain Agenda, as envisaged in Chapter 13, Agenda 21 of Rio Declaration and the National Mission on Sustainable Himalayan Ecosystems

of the National Action Plan on Climate Change gets implemented, maximizing the over-all gains in favour of the Mountain Ecosystems of the 11 Indian Mountain States. The Indian Mountain Initiative shall also try to harmonize the efforts of the Indian government with those of the Mountain Initiative prepared as a collective of the Mountain nations and nations with mountain ecosystems, which includes India.[23]

Details of the Indian Mountain Initiative are proposed to be worked out in consultation with all stakeholders of the mountain ecosystems in Indian mountain states, including the governments of mountain states and the Ministries of Environment & Forests, Ministry of DoNER and the Ministry of Tribal Affairs, three main Ministries which anchor major subjects related to mountain ecosystems. It also proposes to interact and take support of GBPHIED, Kosi-Katarmal, Almora and ICIMOD, Kathmandu, Nepal in this regard.

5

1. Arnold Koller, President of the Swiss Confederation, in Foreword of Mountains of the World, A Global Priority, Edited by B. Messerli and J.D. Ives, A contribution to Chapter 13 of Agenda 21.
2. Mountains of the World - Ecosystem Services in a Time of Global and Climate Change: Framework Paper for the Mountain Initiative of the Government of Nepal, ICIMOD (2010); p 2.
3. ICIMOD and the Himalayan Region-Responding to Emerging Challenges, (ICIMOD, 2008), The Creation of ICIMOD and its Expected Role in Addressing Regional Environmental and Development Challenges by R. S. Tolia, p 113-121; and Government of India (2006), 'Integrating various sectors for mountain development, Report of the Task Force on the Mountain Ecosystems (November, 2006), Ch 4, pp 41-56, Delhi, Planning Commission. This aspect has received pointed attention of the Task Force set up by the Planning Commission, Government of India, and the Task Force has devoted one Chapter of its Report on this themes. Lately, this aspect has been highlighted and now added as one of the 'five topics calling for special attention', in the draft Mountain Initiative Status Paper for COP Cancun, December 2010 at the International Expert Consultation Meeting on Mountain Initiative ob Climate Change organized by Government of Nepal and ICIMOD in Kathmandu on 23 to 24 September 2010.
4. Mountains of the World (ICIMOD, 2010) - Ecosystem Services in a Time of Global and Climate Change, Seizing Opportunities - Meeting Challenges, p 2 -3.
5. This author had the opportunity of attending the Asian Summit at Kathmandu and later the Bishkek Mountain Summit in Kyrgyzstan, and presented papers on Water theme. It is an unfortunate turn of events that the Ministry of Environment and Forest, the nodal Ministry for 'mountain development', went unrepresented at an international event like the Bishkek Mountain Summit in 2002, and owing to this low priority many an initiatives which could have been taken as a run up to various events in the IYM e.g. the Asian Summit at Kathmandu, the Asian Summit of Voluntary Organisations held at Yuksam, Sikkim and later in Argentina, remained unattended, thus greatly influencing the Indian mountains. It is in this context that it is now being advocated that the subject of 'mountains or mountain development' should be handed over to a Ministry which is

fully dedicated to the development of mountains, or which could take up these themes with a greater sense of priority and has a better understanding of the same e.g. Ministry for Development of NER (Mo DoNER).

6. Mountains of the World _Ecosystem Services in a Time of Global and Climate Change, ICIMOD (2010), p 5-10.
7. Organic agriculture and climate change, in Renewable Agriculture and Food Systems, 25(2); 158-169; Nadia El-Hage Scialabba and Maria Muller-Lindenlauf, Natiral Resource Management and Environment Department, Food and Agriculture Organization of the United Nations (FAO).
8. Bamboo-mission, medicinal and aromatic plants, bio-fuel cultivation in wastelands, backyard Kuroiler poultry, fruit and agro-processing units, organic farm products, floriculture and handicraft products through specially created commodity boards and self help group route suggest potential activities generating livelihood opportunities in the mountain regions. Uttarakhand in India has commenced scores of new livelihood options which hold promise of replication and up scaling in mountain regions.
9. Himalayan Forest Ecosystem Services, Incorporating in national accounting, Surendra P. Singh, Kyoto : Think Global, Act Local, Central Himalayan Environment Association (CHEA), 2007; Introduction by R. S. Tolia.
10. India brought 'forest and environment' to its Concurrent List in the Constitution of India in 1979, thus according a higher priority and enabling the Centre to intervene n matter related to natural resources and environment; Uttarakhand similarly announced its serious intention of preserving its forests and bio-diversity soon after its birth in year 2000; symbolically the designation of its development head, the Agriculture Production Commissioner (APC) was renamed as the Forest & Rural Development Commissioner (FRDC), thus announcing that its strategy for development is henceforth going to be forest-centric, as against being agriculture-centric, as in Uttar Pradesh days. Several developmental initiatives were accordingly launched which reflected this major paradigm shift in its development stance.

    Very significantly, the number of Van Panchayats, a community-based forest management mechanism, which had under 5,000 revenue villages at the time of its creation (2000) now stands at more than 12,000, almost each revenue village in the mountain region has its own Van Panchayat, or Community Forest, managed by its

elected board. Recently a major project has been launched to improve the quality of these forests and making them generators of livelihood opportunities. Food For Thought and Action, Patwari Gharat and Chai and Inside Uttarakhand Today, three books written by R.S. Tolia, recounts several initiatives undertaken in Uttarakhand between 200 to 2005 for promoting forestry, environment and other 'green initiatives.'

11. Professor Bruno Messerli, The Hindu Kush-Himalayan Region: Common Goods or Common Concerns ?, ICIMOD and the Himalayan Region – Responding to Emerging Challenges, pages 79 – 84.

12. Report of the Fourth Quinquennial Panel, International Centre for Integrated Mountain Development, July 2006; pages 8 and 38 – 43.

13. Strategic Framework, ICIMOD's Strategic programmes-responding to the challenges of global change, January 2008; and ICIMOD and the Himalayan Region –Responding to Emerging Challenges, (ICIMOD, 2008), ICIMOD's Future Agenda : A Way Forward, Dr Andreas Schild, p 3 - 11, with additional inputs by this writer.

14. Report of the International Expert Consultation Meeting : Mountain Initiative on Climate Change, Preparing Roadmap for the Ministerial Conference of Mountain Countries and UNFCCC process including Rio+20, 23-24 September 2010, Kathmandu, Nepal, ICIMOD ; and Climate Summit for a Living Himalayas, Bhutan 2011, Report on the High Level consultative meeting on : Sacred Himalayas for Water, Livelihoods, and Bio-cultural Heritage; August 18-20, 2010, Godavari Village Resort, Kathmandu; Meeting Facilitated by ICIMOD; Summit Partners MacArthur Foundation, ICIMOD, WWF.

15. Report of the Task Force, Planning Commission, Government of India, G.B. Pant Institute of Himalayan Environment & Development, 2010, pages 18-19; and The Legacy of Govind Ballabh Pant : Mountain and Rural Development Issues, XV Pt. Govind Ballabh Pant Memorial Lecture, by Dr. R. S. Tolia, September 10, 2009, at Kosi-Katarmal, Almora, Uttarakhand, pages 3-11.

16. The writer of this paper had the privilege of becoming its first Project Director, as ADM (P), and a Project Report was approved by the Ministry of Agriculture. Mr. Qureshi, the then Secretary, Ministry of Agriculture, GoI, came to Pauri to inaugurate the HADA Project Office and his visit was also leveraged to get the SFDA (Small Farmer Development Agency) office at Kotdwara also inaugurated. Mr Qureshi, was

the first Indian District Magistrate of Pauri, after independence in 1947. Thus there was this first generation HADA project, in quick succession SFDA project, which soon was enveloped into the DRDAs, District Rural development Agencies, uniformly all over the country. Incidentally, HADA also commissioned a study through the National Institute of Rural Development (NIRD), Hyderabad which became available after HADA project was over !

17. Project Officer (this writer's) personal memories. Ronniee Chowffin of Pauri was a beneficiary of Yorkshire piggery project, apple cultivation in Kot block, Co-op Vegetable Mkt society in Pauri.

18. Report of the Task Force, "To look into problems of hill states and hill areas and to suggest ways to ensure that these states and areas do not suffer in any way because of their peculiarities", Planning Commission, Government of India, 2010 ; page 22 .

19. Report of the Task Force, ibid, see Annexure II, page 107- 108; and Annual Report, 208-09, Ministry of Development of North Eastern Region, Government of India, pages 1-8, 9-16 and 46-47.

20. Task Force on the Mountain Eco-systems for the 11th Five Year Plan (2006), Planning Commission, Government of India, see Chapter 4, Integrating Various Sectors for Mountain development, pages 41–55.

21. National Action Plan on Climate Change, Government of India, Prime Minister's Council on Climate Change, page 1–49.; particularly see NMSHE, paragraph 4.5, page 4.

22. Sustainable mountain development- Chapter 13 in action; and Agenda for sustainable mountain development , by El Hadji Sene and Douglas McGuire and Jack D. Ives, Bruno Messerli, and Robert E. Rhodes, in Mountains of the World, A Global Priority, edited by B. Messerli and J.D. Ives, 1997, pages 447- 453 and 455 - 466.

23. Report of Task Force – To look into problems of hill states and hill areas and to suggest ways to ensure that these states and areas do not suffer in any way because of their peculiarities; Planning Commission, Government of India, & GBPHIED, 2010, page 92.

Administrative Office

Central Himalayan Environment Association (CHEA),
06 Waldorf Compound Mallital, Nainital-263001
Uttarakhand, India

Telefax: 91-05942-233099
Email: cheaindia@gmail.com, office@cheaindia.org
Web: www.cheaindia.org