

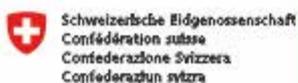


August 2013

# **Policies to Mainstream Adaptation to Climate Change and for Sustainable Development in the Himalayas**

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The Role of the Indian Himalayas Climate Adaptation Programme



Swiss Agency for Development  
and Cooperation SDC

**IHCAP** Indian Himalayas  
Climate Adaptation  
Programme



## Executive Summary

This report looks at the interventions that the Indian Himalayas Climate Adaptation programme can make in the policy sphere to advance the cause of adaptations to climate change effects and sustainable development in the Himalayas.

The principal findings of this preliminary report are two:

1. There are policy prescriptions at the Government of India and State Government levels that advance these goals, but there are existing policies, mainly at the State Government and Municipality/Panchayat levels that are not in consonance with these policy prescriptions
2. There are significant implementation gaps even when policies at the Central, State and local Government levels are in consonance

Based on these findings, this report makes three recommendations for the IHCAP programme:

1. To carry out a detailed policy analysis in key areas such as water, urbanization, transport, tourism etc. so that the exact points of policy dissonance and implementation gaps can be identified.
2. After doing this detailed policy analysis, to use the findings to carry out capacity building workshops at State, Municipality and Panchayat levels for lawmakers, bureaucrats, members of the civil society and the media, so that they are made aware of these points of dissonance and implementation gaps and can take or advocate corrective steps
3. To supplement existing activities such as building environmental awareness, through activities in educational institutions and with the help of the media

Following discussions with officials in the Government of India for this report, it is recommended that the Ministry of Environment and Forests be the coordinating agency for the policy aspect of the IHCAP programme, and that the IHCAP works closely with this ministry while implementing the programme in the field.

## Background

The Indian Himalayan Region (IHR) spreads across 0.53 million square kilometres, comprising 16.2% of India's geographical area. It controls the climate of South Asia by forming a barrier to the annual monsoon winds from the Indian Ocean, feeds the sub-continent's perennial rivers and is a rich reservoir of biodiversity. Sustainable development of the IHR in the face of climate change and threats to biodiversity is critical for South Asia.

The Government of India (GoI) has developed a holistic plan for this purpose, called the National Mission for Sustaining the Himalayan Ecosystem (NMSHE). The mission plans to address the important issues concerning the effects of climate change on Himalayan glaciers and associated hydrological consequences downstream; biodiversity conservation and protection; ensuring livelihoods and improving the standard of living of people who live in the IHR; and community-based planning and management that will sustain this ecosystem.

With the effects of climate change already making themselves felt in this region, as elsewhere, and with these effects projected to accelerate in the coming years, adaptation to these effects is an integral part of the NMSHE plan. While the Ministry of Science and Technology, GoI, is the nodal ministry for the NMSHE, plans for adaptation are also being coordinated by the Ministry of Environment and Forests (MoE&F) and are to be implemented by the state governments in the IHR. Many of the adaptation plans also require the active involvement of the civil society and individuals.

Recognizing the enormous challenge of climate change for the IHR, the Division of Climate Change and Development, Embassy of Switzerland in India, is developing a new programme called the Indian Himalayas Climate Adaptation Programme (IHCAP). The IHCAP is under the Global Programme of Climate Change supported by Swiss Agency for Development and Cooperation (SDC). The outline of the programme is being developed in consultation and with inputs from several organisations including GoI and some State Governments in the IHR.

The IHCAP plans to build on capacity and knowledge enhancement related to three pillars:

1. Scientific and technical knowledge cooperation between Indian and Swiss scientific institutions for long-term research in the field of glaciology, hydrology and climatology; and short-term research in the field of science based adaptation;
2. Adaptation measures and risk reduction for vulnerable communities
3. Mainstreaming adaptation policies for improved action in the IHR by linking grassroots voices with science and policy.

This report deals with the third pillar – the policy issues. It is based on consultations with relevant officials in the Ministry of Science and technology, MoE&F, and the State Governments of Himachal Pradesh and Sikkim, two states in the IHR. These consultations, in turn, were based on a study of

- The NMSHE plan;
- The Shimla Declaration on Sustainable Himalayan Development that was issued after a conclave of chief ministers from the IHR states on October 30, 2009;

- Governance for Sustaining the Himalayan Ecosystem: Guidelines and Best Practices – a publication of the MoE&F and the GB Pant Institute of Himalayan Environment and Development (GBPIHED);
- The report of a Task Force set up by the Planning Commission of India to look into problems of hill states and hill areas;
- The draft state action plans for climate change developed by the two State Governments; and
- Some of the existing policies at Central, State, Municipality and Panchayat levels that affect or may affect the mainstreaming of adaptation and other NMSHE goals

There have been three more important inputs to this report: (i) The National Workshop on Sharing of Lessons and Wise Practices for Sustaining Himalayan Ecosystem, organized by GBPIHED at its Almora headquarters on August 10-11, 2011; (ii) The inputs received via the Solutions Exchange coordinated by the United Nations Development Programme (UNDP) to the query posted by the Swiss Embassy on planning for the IHCAP, which will be a five-year programme starting in January 2012; and (iii) the consultation for IHCAP planning organized by the Swiss Embassy and UNDP in New Delhi on August 30, 2011

Based on these inputs, this report identifies key areas where policy intervention and/or implementation is necessary to mainstream adaptation and to attain other NMSHE goals, and then recommends how the IHCAP could play a constructive and complementary role in this important sphere.

## The Policy Issues

For purposes of brevity, the plans laid out in the NMSHE, and the associated plans of the Central and State Governments will be jointly referred to as NMSHE plans henceforth in this report. The NMSHE plans are clear on the need for mainstreaming adaptation and sustainable development in the IHR and have laid down detailed guidelines on the policies needed to achieve this. However, there are two major obstacles in the way: (i) Those policies of the Central, State, Local Governments (municipalities and Panchayats) that are not in consonance with the NMSHE plans; and (ii) The implementation of the NMSHE plans

The four basic questions posed while preparing this report were

1. What are the policies of Central, State and Local Governments that lead to better adaptation to climate change?
2. What are the policies that hinder this?
3. Are there any policy conflicts? If so, how can they be resolved?
4. What can be done to improve implementation of policies that promote better adaptation to climate change and therefore sustainable development?

This report will take a brief look at the policy dissonance in some key areas before recommending the role that IHCAP can play in resolving these issues to achieve the goal of mainstreaming adaptation and sustainable development in the IHR. The areas examined in this report are illustrative and not exhaustive. The policies examined in each area have also been chosen for the purpose of illustration,

and are not exhaustive. A more comprehensive analysis of these policies at every level is necessary before the actual intervention by IHCAP.

## **Water**

In this critical area, a key NMSHE policy prescription is to rejuvenate springs, make inventories of mountain springs and do detailed geological mapping to identify the spring recharge zones. While the Himachal Pradesh Government follows the same policy prescription, there is considerable concern that large-scale hydroelectric projects in the state are interfering with water recharge in the springs. Hydroelectricity planners have tried to minimize such impacts by shifting to run of the river projects from dam projects. But run of the river projects above a certain size have to channel water through tunnels, and there is anecdotal evidence from residents and civil society representatives that this channelling is interfering with natural percolation of groundwater and therefore spring rejuvenation. It also has effects on the silt carrying capacity of the stream as well as biodiversity downstream. While the need for electricity cannot be ignored and run of the river projects are among the cleanest forms of electricity generation known so far, there is still a dissonance between these projects and the NMSHE policy prescription. In Sikkim, as in Himachal Pradesh, spring and stream rejuvenation and local water storage area already major components of Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) works. The State Government is very keen do detailed inventory of surface and groundwater and seeks collaboration for this. But there are major hydroelectricity projects ongoing in Sikkim, in the Teesta basin. And though the MoE&F has given clearance to these projects only after studying the carrying capacity of the basin, the study has not taken into account underground water percolation upstream in the small tributaries or spring rejuvenation.

Another example is the NMSHE policy prescription to protect high-altitude lakes through law and by prohibiting construction activities on/around them. Both Himachal Pradesh and Sikkim Governments have guidelines in consonance with this policy prescription, but officials in both State Governments agreed that apart from some showcase exceptions, these guidelines were not being implemented, nor had they really percolated either to officials in the tourism departments or to local government authorities.

## **Urbanization**

The NMSHE policy prescription says: Do not permit unplanned growth of new settlements; consolidate existing settlements and govern them through land-use planning incorporated in a municipal master plan. Provide these settlements with basic facilities such as water supply, waste disposal and power, before permitting further growth. State authorities have been asked to prescribe regulations, taking into account the particularities of the local ecosystem, including seismic vulnerability, the need to respect local aesthetics and harmony with Nature, and the optimum population load the settlement can sustain, given the availability of water and power. Specifically, the NMSHE says, municipal bylaws should be amended, wherever required, to prohibit construction activity in areas falling in hazard zones or across alignments of natural springs, water sources and watersheds near urban settlements. There will be strict enforcement of these bye-laws, including through imposition of heavy penalties and compulsory demolition of illegal structures. Construction activity will be prohibited in source-catchment areas of

cities, including along mountain lakes and other water bodies. Their feeder channels will also be kept free of building activity.

The Himachal Pradesh State Environment Master Plan follows this policy prescription and its authors have carried out a detailed vulnerability assessment by Tehsil, which can be very useful for all micro-level planning, including urban planning. The Master Plan also has detailed guidelines by sector, and the blueprint for a query based software that will enable a local official to decide whether to permit an activity that will lead towards urbanization, for example. But bureaucrats in the state's urban planning and housing departments appear largely unfamiliar with these developments. Officials in the Shimla Municipal Corporation said they had not been informed about these new norms, and thought their colleagues in other municipalities would not have been informed either. The local level officials said they would need substantial capacity building before they were able to implement such norms in urban planning. These officials were aware of norms laid down for earthquake-resistant buildings, an important consideration since the entire IHR is in a high-vulnerability seismic zone. But they pointed out that these norms were not mandatory except in Government buildings, so they had no means of implementing them in private buildings. There were no punitive laws at all, nor were they aware of any plan to have such laws.

In Sikkim, the State Strategic Urban Plan looks at developing a total of 16 urban centres by 2040, which includes the current 9 centres. The long term urban growth of Sikkim is proposed to be guided by the structure of "Moderated Multiple Nuclei Structure". While that has some points in common with NMSHE norms, there are important points of divergence that need to be reconciled.

### **Solid Waste Management**

The NMSHE plan says: Ban plastic bags, provide certified potable water, amend municipal by-laws to make waste segregation and composting mandatory, tax plastic and non-biodegradable packaging.

While plastic bags have been banned in both Himachal Pradesh and Sikkim, officials admit to lack of enforcement when it comes to tourists who come from outside these states. Neither state has taken any serious step to provide local certified potable water, which could obviate the need for bottled water. There is however, a well-known model for such water supply in Leh, which has the added benefit of providing significant local employment. In Himachal Pradesh and Sikkim, while waste segregation is encouraged, it is not mandatory in any of the municipalities or Panchayats in either state, nor is there any tax on plastic or non-biodegradable packaging. Officials in both states said these steps would require the passage of laws in the state legislatures, and there may be considerable opposition from the tourism industry.

### **Tourism**

Many places in IHR are very popular pilgrimage sites visited by thousands every year. The NMSHE policy prescription says: Analyze carrying capacity of each pilgrimage site and restrict numbers accordingly; create 10-km radius no-road/no-vehicle buffer zone around protected pilgrimage sites; give larger stake to local community to manage and benefit from tourism, both religious and secular; promote audited

homestead tourism and discourage 3 to 5 star variety; impose tourism tax, raise parking fees, make town centres vehicle-free.

The carrying capacities of major pilgrimage sites have been analyzed in the state action plans, but as yet there is no move to restrict numbers accordingly. Officials in both Himachal Pradesh and Sikkim said such a move may be politically risky, and therefore may be opposed by legislators. For the same reason, and more so because many of the pilgrims are elderly and/or infirm, there has been no move to create a vehicle-free buffer zone around any pilgrimage site. The Uttarakhand Government has, however, restricted the number of pilgrims to the Gangotri glacier and more recently on the famous Char Dham Yatra. That, according to officials in the state's Disaster Management Department, has brought down the number of road accidents on the pilgrimage route as well.

The Forest Department in Uttarakhand also has an example from the Valley of Flowers of providing a larger stake in tourism to the local community, in the process also helping solid waste management in the popular tourist area. While these are models of best practice that can be emulated throughout the IHR, and while all state government in the region are promoting homestead based tourism, the problem is that there is no apparent move to discourage any 3 to 5 star variety of tourism, nor of any move to impose any special tourism tax or raise parking fees. However, the centres of some towns have been made vehicle free.

In Sikkim, where tourism is the mainstay of the state's economy, the SAPCC plans to (i) introduce enhanced licensing norms for hotels and home-stays to incorporate high level of energy efficiency, water harvesting and water re-cycling norms; (ii) provide renewable energy to all tourism and trekking camps and high-altitude and remote monasteries; Kanchenjunga National Park is to also have battery operated patrol and visitor vehicles.

## **Transport**

The top demand from the majority of residents in the IHR is for reliable paved roads and transport services to their villages. At the same time, poorly-planned roads have often been held responsible for landslides that block the same roads, as well as for causing major damage to the ecosystem. Taking this into account, the NMSHE policy prescription is: Mandatory EIA for all roads longer than 5 km; align roads along ridges rather than river valleys; cost estimates for road construction to include mandatory treatment of hill slope instabilities resulting from road-cutting, cross drainage works and culverts, disposal of debris at suitable and identified locations; norms for hot mix plant sites; all hill roads to provide adequate roadside drains and, wherever possible, be connected to the natural drainage system; alignment of proposed roads to avoid fault zones and landslide prone zones wherever possible; explore alternative forms of mass transport like railways and ropeways; enforce fuel quality standards and clean filters, especially for diesel vehicles

While there is mention of such green road-building norms in the Himachal Pradesh SAPCC, officials in the state Public Works Department professed ignorance about them. There is no such mention at all in the Sikkim SAPCC. A bigger problem pointed by senior officials in both State Governments is that the construction and maintenance of major roads are not under their jurisdiction, but under that of the

Border Roads Organization (BRO), a department of the central Ministry of Defence. BRO officials in the Sikkim capital Gangtok said they were unaware of any such green road-building norms. Officials in Sikkim were keen to discuss with their Swiss counterparts various mass transport options such as sky train or fast ropeway.

## **The Findings**

The literature review and consultations with officials at Central, State and Municipal government levels made it clear that while there are some policies at all levels that foster adaptation to climate change effects and sustainable development in the IHR, there are others that hinder this. There is a telling example in Uttarakhand: while both the NMSHE and the state government officially promote organic farming in the state and discourage the use of chemical fertilizers and pesticides, the agriculture department of the same state government continues to provide subsidies to farmers to buy chemical fertilizers and pesticides.

There are similar policy conflicts in other key areas such as water supply, energy generation, transport, tourism and others. While some conflicts have been outlined in this report, a detailed policy analysis will provide a more comprehensive list. While such an analysis was beyond the scope of this preliminary report, it is necessary before effective intervention of IHCAP in the policy space.

It was also found that there are sometimes significant gaps in implementing sustainable development policies, though these policies have been endorsed at all levels of government. A common example is that of the failure to fully implement the ban on plastic bags.

## **The Recommendations**

Officials in the GoI as well as the state governments agreed that such policy dissonances needed to be reconciled in order to mainstream adaptation to climate change and advance sustainable development in the IHR. They suggested that the best way to do this would be to build the capacity of various stakeholder groups to make/support policies that will further NMSHE goals. Key groups are

1. Legislators at State, Municipality and Panchayat levels
2. Bureaucrats, especially from departments other than environment
3. Civil Society - NGOs, CBOs, Media, Academics, Students

## **Suggested Activities**

It was suggested by the officials that in the policy sphere, this is where the IHCAP can play a very useful role, by holding capacity building workshops at state, district, municipality and Panchayat levels that would enable the legislators to formulate policies to mainstream adaptation to climate change and advance sustainable development. Knowledge of potential consequences of non-implementation of such policies will also help enable the bureaucrats to implement these policies, for example to stop illegal riverbed mining for construction material, or for maintaining the rainwater harvesting systems that are now mandatory in government buildings but which often lie neglected. Holding such capacity building workshops at dispersed levels would have the additional benefit of spreading knowledge and awareness of NMSHE goals throughout the IHR.

However, as mentioned earlier in this report, such a set of activities should be preceded by a more detailed sector by sector policy analysis to identify the exact laws and/or policies that are in dissonance. The sectors to be analyzed should include

- Water
- Agriculture
- Transport
- Tourism – both religious and secular
- Solid Waste Management
- Urbanization
- Industrialization
- Energy generation
- Air pollution

### **Coordinating Agency**

Another issue examined for this report was whether IHCAP should in any way help implement the decision taken by the 2009 Chief Ministers' Conclave to establish a Himalayan Sustainable Development Forum. This was conceived as a forum through which IHR states could jointly make their case to the GoI on issues related to climate change adaptation and sustainable development. However, the forum has not really got off the ground yet, and the annual summit of IHR state chief ministers planned under this umbrella has not taken place even once. Senior officials in the GoI, Himachal Pradesh and Sikkim all felt the reason was political – that some IHR states felt others would obtain undue advantage from such a forum, and therefore did not want to take part. Apart from this, the Prime Minister's Office has already initiated a coordination mechanism for ensuring planned implementation of NMSHE goals. Though that has not yet got off the ground, the mechanism involves the Chief Ministers of all IHR states. Given this situation, this report is not making any recommendation on the IHCAP attempting to play any role in the revival of the Himalayan Sustainable Development Forum.

The scientific and technical cooperation for IHCAP is being coordinated with the Ministry of Science and Technology (MST) in GoI. This is also the nodal ministry to implement NMSHE. However, officials in the MST felt they were not the best coordinating agency through which IHCAP could address the policy issues. Officials in the Ministry of Environment and Forests (MoE&F), who have far more experience in coordinating activities of this kind, said they were willing to act as the coordinating agency for IHCAP in the policy sphere. This report therefore recommends that the MoE&F be the coordinating agency for the policy aspects of IHCAP.

Policies that advance mainstreaming of adaptation practices and sustainable development naturally come from indigenous knowledge as well as new scientific knowledge. Since a separate report on community involvement in IHCAP is being prepared, this report will not go into details in that sphere, except to recommend that IHCAP may provide an effective platform for more fruitful interactions between the civil society and policymakers. This will have the additional benefit of bringing knowledge institutions and community based organizations closer to one another for mutual benefit in reaching the goal of sustainable development. The NMSHE plan includes the establishment of such a platform to be

coordinated by the Prime Minister’s Office. Again, the details have not been worked out yet, but when that is done, the IHCAP can play a useful catalytic role.

Apart from helping reconcile the policy dissonances, the IHCAP can also play a complementary role in areas where there is policy consonance. An example is the building of environmental awareness. The NMSHE has a list of potential activities for this purpose, for example by holding awareness camps in schools and colleges, and by providing information to the media on steps being taken to advance adaptation to climate change effects. All State Governments in the IHR carry out these activities to a greater or lesser extent. But there is always scope for improvement, and the IHCAP can play a role in this by providing both content and trainers.

## Annexure

### The officials consulted for the preparation of this report

Many of the officials consulted for this report at Central, State and local government levels spoke on the condition of anonymity, because they felt they could not speak freely on this issue if they were going to be identified.

Here is a partial list of officials consulted for this report. It contains names of officials willing to be identified. It also contains names of academics and civil society members consulted for this report.

Name	Organization
B.M.S. Rathore	Ministry of Environment and Forests, Government of India
Akhilesh Gupta	Ministry of Science and Technology, Government of India
Sandeep Tambe	Government of Sikkim
Nagin Nanda	Government of Himachal Pradesh
L M S Palni	G. B. Pant Institute of Himalayan Environment and Development
Kireet Kumar	G. B. Pant Institute of Himalayan Environment and Development
Sejuti Basu	Pragya
Mahendra Lama	University of Sikkim
Mukul Sharma	LEAD India
Prabjhot Sodhi	Centre for Environment Education
Gurpriya Kapoor	Himachal Institute of Public Administration
Kashi Nath Vajpai	Climate Himalaya Initiative
Shalini Misra	G. B. Pant Institute of Himalayan Environment and Development
RS Tolia	CHEA
Kiran Sharma	Development Alternatives
Vinay Tandon	Government of Himachal Pradesh (retired)
Arup Banerji	Government of Uttarakhand
JS Rawat	IUCN India
Sachidanand Bharti	State Planning Commission, Uttarakhand
VRS Rawat	Indian Council for Forestry Research & Education

## About Indian Himalayas Climate Adaptation Programme (IHCAP)

Recognizing the enormous challenge of climate change for the IHR, there is an urgent need to build institutional and individual capacities. National policy frameworks such as the National Action Plan on Climate Change (NAPCC), the National Mission on Sustainable Himalayan Ecosystem (NMSHE) and the 'Shimla Declaration on Climate Change Actions', focuses on a range of measures for adaptation and mitigation, including scientific collaboration and establishing a Himalayan Sustainable Development Forum.

Climate Change and Development (CCD), Embassy of Switzerland in India, under the **Global Programme of Climate Change** supported by Swiss Agency for Development and Cooperation (SDC) in collaboration with the Department of Science & Technology, Government of India has initiated the **Indian Himalayas Climate Adaptation Programme (IHCAP)**. The IHCAP builds on capacity and knowledge enhancement related to three pillars: (a) scientific and **technical knowledge cooperation** between Indian and Swiss scientific institutions; (b) **adaptation measures** for vulnerable communities; and (c) main streaming adaptation policies for improved action in the Indian Himalayan Region.

The goal of the Indian Himalaya Climate Adaptation Programme is that the “resilience of vulnerable communities in the Himalayas is strengthened and knowledge and capacities of research institutions, communities and decision-makers are connected and enhanced”. IHCAP focuses on three areas:

- **Strengthening institutional capacities at the State level in Himachal Pradesh** of the different levels of stakeholders in the government on climate adaptation planning and implementation.
- **Science capacity building on glaciology and related areas** to enhance the understanding of the scientific dimension of climate change dynamics and scenarios on snow, glaciers and water flows.
- **Facilitate dialogue between Himalayan States** so that they can review, integrate and mainstream climate change aspects in their development policies, plans, and action.

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