

Recommendations of the National Seminar on “Uttarakhand Disaster: Contemporary Issues of Climate Change and Development with a Holistic Approach”

A National Seminar on “Uttarakhand Disaster: Contemporary Issues of Climate Change and Development with a Holistic Approach” was held from 25-27 October, 2013 at Sri Dev Suman Uttarakhand University, Badshahithaul, Tehri Garhwal. The seminar was attended by over 220 delegates from the premium Universities and Institutes of the country. There were serious deliberations on the theme of the seminar by leading experts in various disciplines and also paramilitary officials who were actually responsible for rescues operations during disaster. The seminar provided a unique platform for interaction between the leading academics and the grass root workers from NGO’s, and Community Leaders who contributed through their practical knowledge and traditional wisdom.

The salient recommendations are summarized below:

1. An urgent need was felt for a **State Act for Disaster Management** that would entrust responsibility on a particular body/department for disaster management and related issues that would act as the nodal agency for coordinating the activities of various departments with clear allocation of responsibilities and budgetary provisions. This should be done with a caveat that the Government of India Act may not be simply lifted and applied to Uttarakhand because in view of the mountainous country and area specific needs the State needs a well thought out Act of its own.

The major issues that need to be immediately tackled are enlisted below:

A. Pre- disaster measures :

- (i) **Development of all-weather warning system** that would issue warnings for different areas of the State on the basis of hazard assessment carried out on a routine basis. The warning mechanism may involve two steps (1) Issuance of yellow alert on a preliminary assessment of the impending disaster before 24 hours of the expected event, and (2) this yellow alert could be seriously evaluated for the possibility of the disaster in case the probability is more than 50% the red alert may be issued, or else if the probability decreases significantly the yellow alert may be withdrawn.
- (ii) Development of an effective individual warning system that may begin by a mandatory permanent registration of all the existing mobile phone numbers

in Uttarakhand and a mandatory temporary registration of all the mobile phones entering Uttarakhand temporarily and dissemination of the possible information to all these mobile numbers regarding impending disaster anywhere within the State. The registration process has to be electronic one, employing software by all the service providers that would disable any unregistered phone within Uttarakhand, which may start by a simple user friendly registration by the mobile phone itself.

- (iii) Identification and delineation of the threatened disaster prone areas for various types of disasters viz. glacial disasters and landslides disasters etc.
- (iv) Detailed mapping of landslides and their potential threats, mapping of glacial, proglacial and periglacial threats for their disaster potential, close to regions of habitation, pilgrim/tourist centers and roads.
- (v) Regulating the number of pilgrim/tourists according to the carrying capacity and resources of the pilgrim/tourists centers.
- (vi) Turnkey search and rescue measures as well as evacuation plans for areas that may be at risk from a recurring disaster must be in place.
- (vii) Identification and creation of safe shelters close to large pilgrimage centers and tourist towns.
- (viii) Formulation of viable plans to meet above mentioned exigency.
- (ix) For construction of new roads and identifying habitable regions in the river valley and maintenance of the existing roads in Uttarakhand, the Government may consider mandatory association between the State PWD (DGBR, for roads under their control) and the Geological Survey of India for geotechnical investigations.
- (x) Identification and construction of alternative emergency tracks for connecting the crucial locations during emergency.
- (xi) The administration may seriously consider the involvement of local people at all tiers of disaster management.
- (xii) All the above information should be accessible on the internet and additionally should also be available at Panchayat Centers through GIS. It may be mentioned that the state of the art expertise on GIS at NRDMS Centre at Kumaun University, Almora may come in very handy for the purpose.
- (xiii) The advice and important findings of the institutes with specific mandates such as the Wadia Institute of Himalayan Geology, Forest Research Institute, Wildlife Institute of India, IIT, Roorkee, GBPIHED, Almora, Geological Survey of India, USAC, Dehradun, National Remote Sensing Institute, Dehradun and

various State and Central Universities in the State should be considered by the Government as a part of pre-disaster measures.

- (xiv) The Government may also seriously consider that for disaster mitigation, the settlements and habitation in the disaster prone areas viz. those located in the flood way of the rivers (i.e. the course taken by the river last 100 years), in the landslides hazards prone zones and the like may be shifted to safer areas. This might involve amendment of the constitution of the State Assembly/fresh Act.
- (xv) There should be provision of training at four levels for sensitization and capacity building of the concerned trainees: Level 1 – Policymakers/decision makers/Administrators; Level 2 – The Geologists Involved, Engineers, Physical planners, trainers, researchers;(level 1 and Level 2 will have to work in close cooperation with a clear cut understanding that technical considerations would be exclusively decided by Level 2, while Level 1 should work to find administrative ways and means to implement the advice) Level 3 – NGOs' Religious Organizations, NSS, NCC, Individual Groups, Volunteers; Level 4 – Community Groups, Community Leaders, School Teachers, Students and General masses.
- (xvi) In addition to the disasters discussed above the Uttarakhand is facing two major crises which are now almost on the verge of becoming potential disasters :
 - (a) Drying water resources are increasingly threatening the drinking water and agriculture in Uttarakhand. To ensure perennial water supply in the springs and rivers of Uttarakhand augmentation of water resources is imperative. In addition to headwater management of rivers the time tested measures like cutting small trenches, parallel to the hill slopes and building of small dams on rivers and gadheras for increasing infiltration of water into the ground for recharge and generation of electricity by micro-hydel projects employing these dams may be considered.
 - (b) The above mentioned problems are compounded by troupes of hostile monkeys devouring and destroying anything and everything in the villages and towns of Uttarakhand making agriculture and horticulture practically impossible. In addition herds of other wild animals attacking the crops in the villages are forcing people to abandon agriculture, horticulture and migrate. The Government may seriously consider neutering and/or removal of monkeys and directing forest department to find ways and means to ensure that the wild animals do not enter the villages.

B. During & Post disaster measures

(i) During disaster:

- There should be a proper coordination among the central government, the state government and the local administration for taking quick decisions and rapid actions during a disaster to ensure that the needs and provisions of victims are quickly met to alleviate and minimize the suffering.

(ii) After Disaster

- Emergency relief and rescue work (provision of shelter, water, food and medical care etc.) should be carried out immediately following the occurrence of a disaster with the help of local people, trained personnel and paramilitary forces to meet the needs of victims and other survivors.
- Rehabilitation (Temporary public utilities and housing as interim measures to assist longer term recovery) and reconstruction (replacement of building, infrastructure and life line facilities) activity should be done under single umbrella / nodal agency already made for the purpose and with the proper coordination of various agencies/ departments. Area specific and long term planning should be made on the basis of recommendations of scientist/experts and ground realities.

2. Biodiversity: Bioresource

A. Assessing the impact of extreme events (flash floods) on biodiversity (aquatic and riparian) especially the bio-resources.

B. Development of appropriate options for livelihood enhancement for reconstruction of disaster affected people/ Villages in Uttarakhand

(i) Strengthening and diversification of land and natural resource management (NRM) based livelihood options with use of simple, cost-effective appropriate technologies in different disaster affected villages/areas of Uttarakhand.

(ii) Development of alternative sources of farm/non-farm income and value chain (off-seasonal vegetable, medicinal and aromatic plants cultivation and collection and wild bioresources).

(iii) The Uttarakhand Government should revive the pioneer efforts made in the field of cultivation of medicinal plants in the state some 60 years back, which *inter alia* has the potential of becoming the largest foreign exchange earner for Uttarakhand. These efforts initiated with the country's freedom led to the first cooperative drugs factory(1948/49) in Ranikhet immediately after Indian Industrial Act was passed in 1948. The then visionary garden for medicinal plants, which at one time was successfully growing saffron, although now highly depleted but still survives at Ranikhet and it is in dire need of rejuvenation. Tarikhet, a place near Ranikhet, still houses the assiduously collected largest herbarium of Himalayan medicinal plants in the office of Central Council of Research in Ayurveda and Siddha. It is time to recall that the first pharmaceutical laboratory for standardization of Ayurvedic drugs was started in 1947/48 at Ranikhet in Uttarakhand and serious efforts should be made to wrest that initiative. Although Indian Medicinal Corporation Ltd., a Mini Ratna company, at Mohan -- perhaps the largest supplier of Ayurvedic medicines to the CGHS dispensaries of Govt. of India all over the country, is doing very well but needs to be matched by many such undertakings in the public sector to provide employment and wealth to Uttarakhand.

(iv) Cottage industries-Ringal based (household, community and village level) etc. may be developed

(v) Restoration of damaged landscape/village surrounding through agro-forestry/fast growing multipurpose tree/ and slopping watershed environmental engineering technologies needs to be started urgently

(vi) Increase in the productivity of livestock through improved breeding and health services is highly desirable

(vii) Improvement of health and nutrition status of women and reduction of their drudgery need urgent attention and action

C. Separation of other types of tourism from pilgrimage tourism is necessary. Other tourist spots like PanchKedar, PanchBadri and also other sites for rural tourism, community

based tourism, heritage tourism; eco-tourism, nature tourism etc. need to be developed to reduce pressure on traditional spots.

- D. Carrying capacity assessment of pilgrimage sites/circuits/tourism in relation to accommodation/infrastructure available to tourists in a particular season is highly desirable both for the prevention of disasters and retention of the cultural fabric of the state
3. The Universities may be encouraged and supported to run integrated/masters programmes in (1) Disaster and Mitigation, (2) Himalayan Natural Resource Management/Himalayan Biodiversity and Conservation (Himalayan Aquatic Biodiversity as an add-on course), (3) Ecotourism/Adventure and Water Sports, (4) Master in Social Work (5) Extension Education. There should be financial initiative to the students and the departments to take up M.Sc. project oriented dissertations of practical value e.g. landslide mapping, stability analysis studies close to the roads and threatened habitations, surveys for medicinal plants and others.
 4. The University may be further encouraged and support taking-up sensitization programs regarding disaster management involving NCC and NSS students.