



## SUSTAINABLE DEVELOPMENT OF KEDARNATH AREA THROUGH PROPER PLANNING INTERVENTIONS

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### ABSTRACT

*The mountainous region of Uttarakhand is a fragile region which has witnessed frequent disasters in the form of earthquakes, landslides, cloudbursts, floods, etc. These disasters have taken a heavy toll on life, property, livelihoods and severe damage to environment and ecology. Uttarakhand tragedy 2013 has been one of the most horrible calamities of the recent times in the region.*

**KEYWORDS :** Sustainable Development , Proper Planning Interventions , property, livelihoods.

### INTRODUCTION

A huge component of the state was exaggerated by floods owing to extensive and unnecessary rain in the higher reaches of the Himalaya which coincide with the amount of landslides, glacial lake outburst flood, and possibly high snowmelt runoff. Approximately 580 human lives were lost; over 5,400 people were reported as missing; 4,200 villages were devastated, 9,200 Cattle/livestock lost, and 3,220 houses were fully damaged. In calculation, many of the community buildings, roads, power and telecommunication infrastructure, and other installations together with agriculture and raw materials were brutally damaged. The whole State of Uttarakhand falls within Zone-IV and Zone-V (Zone-V represents the maximum level of seismicity) of the tremor Zoning Map of India. Seismic Zone-V covers the northern parts of the state covering the districts of Bageshwar, Chamoli, Pithoragarh, Rudrapur, and Uttarkashi, while Zone-IV covers the left over districts lying south. In the recent past, the State has witnessed two major earthquakes (Uttarkashi 1991 and Chamoli 1999) causing casualty and demolition due to ground shaking and earthquake-triggered landslides. The speedy rate of developmental activities without a large amount of scientific planning in this weak mountain belt has put a lot of pressure on the sustainability of the natural resources, ecology and usual landscape processes, especially in the light of climate changing (*India Disaster Report 2013*).

As far as the environment and eco-friendly sustainable development in Uttarakhand is concerned, the state follows almost the same development approach and strategy as are being elsewhere in India i.e. providing special incentives to the industries and increasing the growth of service sector including aggressive promotion of tourism and adventure sports to capitalize upon the Char Dham, natural scenic beauty of this Himalayan State. Harnessing the water resources for power generation, so much emphasized has also become a focal point of national debate for perceived and genuine environmental concern (*G. Kumar 2005*). Most often these deficiencies are a result of the lack of appropriate methodologies and their inadequate use in planning and policy-making. In the light of above issues, this makes a strong case for adoption of specifically focused approaches for identification of problems, development, and execution of suitable planning model in a highly ecologically fragile and environmentally sensitive region like Kedarnath area.

Despite its rich natural and cultural resources, the Kedarnath area is underdeveloped. The region is fragile from both ecological and geological point of view. Because of extremely active geodynamic condition this Himalayan region, even minor tempering with the geo-ecological balance can initiate environmental changes that may eventually reach to the alarming proportion (*Valdiya, 2002*). The threat of major disaster and earthquake as per prediction of geologist and seismologist is looming large. This Himalaya region is still very young and falls under the category of the high seismic zone. In the Himalayan region, for a number of reasons, economic development cannot be understood and measured independent of ecological wealth. The problems in the region are complex having intricate linkages between social, economic and ecological concern. The present paradigm of development has been accused as the root cause of several natural calamities and disaster (*Bhatt, Pandya, & Goh, 2013; Bandyopadhyay, 2013*). The solutions, therefore, cannot be addressed in isolation. It is in this context, the proposed paper attempts to raise various issues and come up with the integration of environmentally oriented development planning with an alternative model of development based on mountain characteristics, avoiding short-term gains and the even temptation of high growth rate. Lessons from the earlier experiences such as mixture in living strategies, financial marginalization, remoteness, difficult topography, cultural diversity and ecological fragility were taken into account indentifying prospective resources and options for livelihood improvement and income generation through appropriate and suitable planning interventions.

### OBJECTIVES

- To analyze the existing development interventions and assess potentialities of economic development of Kedarnath region of Uttarakhand state.
- Finally, the study proposed proper planning interventions for sustainable development of the study area.

### METHODOLOGY

Both primary and secondary data have been collected for this study. The source of the secondary data is the census and other published reports of the district Rudraprayag and Ukhimath block. Secondary data was also collected from journals, handbooks, books, government publications, articles, different website etc. The Data also collected from the block office of district Rudraprayag and block Ukhimath.

The primary data has been collected through socio-economic survey and through participatory rural appraisal techniques (PRA). Primary data based on socio-economic surveys collected through village schedule, settlement schedule, listing schedule and household schedule.

### STUDY AREA

Uttarakhand State, a newly Himalayan State spread over between  $28^{\circ}-43'$  to  $31^{\circ}-27'$  North latitude to  $77^{\circ}-24'$  to  $81^{\circ}-02'$  East longitude is among the ninth Himalayan state of the Indian Republics. Situated on the southern slopes of the Himalayas, the northern part of the state is in greater Himalayan ranges and the southern part is in the foothills. The state is administratively organized into 13 districts, among which 11 districts, accounting for about 93 percent of the total area of the state, are mountainous. The modest attempt has been made in this study by selecting the district as planning unit. Therefore, district Rudraprayag has been purposely selected. It is pertinent to note district Rudraprayag is highly sensitive to ecology, as well as climate variability, is a concern. The recent disaster affects most of the part of the district and damage infrastructure, agriculture land, government and private property and human lives. Apart from this the Kedarnath area which is highly sensitive also lies in the district Rudraprayag. Therefore for integrated planning purpose district Rudraprayag is the idle representation of climate-sensitive mountain area.

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### AGRICULTURAL DEVELOPMENT

Due to physiographic constraints, arable land and irrigation are the scarce inputs. In Ukhimath block 4506 hectares have been reported as net sown area (8.94 percent of the total reported area). Out of which 68 hectares about 2 percent of the net sown area is irrigated. It is pertinent to note here that the availability of aforesaid two inputs in arable land and irrigation declines with an increase in altitude. A large number of marginal farmers, about 94 percent of the total arable land, dominate the land distribution pattern. This rash nature of agricultural activities draws many non-farm workers in the field during peak season, while during the slack season even the regular farm workers have to sit idle. This idleness or seasonal unemployment is enforced and inevitable feature of vacation and arises mainly because of the inelastic time pattern of the primary sector. Mostly there are marginal farmers (above 39.23 percent) in the region, whose land holding usually ranges from 0.02 to 0.5 hectare in block Ukhimath and about 47 percent in District Rudraprayag. Then follow the Small landholders possessing 1.0 to 2.0 hectare of agricultural land represents about 29 percent in block Ukhimath and about 23 percent in the district. While the big farmers having the landholding between 4.0 and 10.0 hectare constitutes only 1.04 percent of the farming community in a block and about 0.67 percent in the district. There are only 0.01 percent of farmers holding land above 10 hectares in a block as compared to 0.03 percent of farmers possessing above 10 hectares of land in district Rudraprayag. The region is facing the negative impacts of climate-induced changes that are already visible in form of shorter and relatively cold winters, unseasonal and irregular rainfall, unusual and scanty snow-fall, extremely hot summer, excess of frost, reduction in soil moisture, increasing cloudbursts, erosion of agricultural land and local warming.

### EDUCATIONAL DEVELOPMENT

For long education has been identified with progress and prosperity of a society. In fact, the spread of education is treated as an effective solution to the problems of economic decline, hunger human poverty and elimination of unfreedom. In the district, at the primary level, there are 544 governments or 'parishadya' schools, 7 model primary schools and 83 recognized and aided primary schools. At the upper primary level, there are 98 government or 'parishadya' and 37 recognized or aided schools. Besides these, there are 151 high schools, 135 intermediate and 6-degree colleges. There is also a Jawahar Navodaya Vidhyalaya in the district, which is conducted by the MHRD, Government of India. There is also a Government Post Graduate college at Agustyamuni. There are two Industrial Training Institutes (ITIs) also in the district.

### TOURISM DEVELOPMENT

The Ukhimath block has high reputation in Garhwal Himalayas, for its tourist and pilgrimage resources. Three important tourist places like Kedarnath, Madmaheshwar, and the Tungnath, out of the famous panch kedars (Panch kedars are the Kedarnath, the Madmaheshwar, the Tungnath, the Rudarnath and the Kalpeshwar) are in the Ukhimath block. The legend of the emergence of these Kedars is associated with Pandavas and their ascend to heaven. These Kedars attract many tourist/ pilgrim visiting the areas.

### REHABILITATION DEVELOPMENT

Although the magnitude of total losses of human lives, livelihoods, private properties, public infrastructure and utilities is difficult to estimate precisely efforts have been made to estimate the losses. Huge losses of houses, hotels, agricultural land, and crops were estimated in survey households of the selected villages of the study area. Damage assessment in detail of affected villages and District administration identified the affected families and compensation provided to damage houses, lives of human and animal disbursed to affected peoples. But the problem of livelihoods still lies to the families who lost their business in the Kedarnath and other places due to the flood.

## CONCLUSIONS AND SUGGESTIONS

Climate-sensitive and disaster-affected Kedarnath region of Uttarakhand state have urgent need of creation of infrastructure and socio-economic development. The region is in the disadvantageous situation in terms of difficult terrain, severe weather conditions, large forest land, dispersed habitations, small and under-developed markets, poor connectivity and inadequate general infrastructure. These acts as constraints in terms of development compared to other regions. Keeping in view all these aspects following recommendations are made in the formulation of sustainable development purpose.

- It is necessary to provide easy access to support services, such as seeds and plants, fertilizers, production techniques, improved agricultural devices and methods and marketing infrastructure in order to minimise the risks involved in the shift from food- centered subsistence production to niche- based commercial production.
- Strengthen weather forecasting and early warning systems and make them local community oriented. It helps in creating people awareness in climate vulnerability, minimizing the losses of disasters and mitigation in climate-related risk.
- An education is an instrument in rationalizing the attitude of people, instrument of new innovation and provides necessary skill to utilize regional resources. More than six decades of planning the region is suffering from the paradox of scarcity of critical manpower, amidst the high incidence of migration among educated male. In short the education policy is yet to be designed according to the regional needs. Besides, increasing the number of institution the facilities available in schools should also be increased and improved. Two- three residential schools need to be established. In addition to expanding educational facilities attempts should be made to established technical educational institutions i.e. Polytechnic and ITI.
- The State authority should propose the development of Tourist Bio-metrics & Regulation software at various entry points for knowing and regulating the numbers tourists. The State government should also conduct the in depth project report on carrying and amalgamation capacities of the higher reaches target and micro planning for the construction of infrastructure in middle reaches destinations
- Enhance the facilities in surrounding towns and villages near the Gateways to major tourist destinations i.e. at Guptkashi, Phatta, Rampur, Gaurikund and Ukhimath.
- The present transport routes neglect many tourist/ pilgrim sites. If the route Gangotri- Tehri- Panwali-Triyuginarayan- Kedarnath is constructed, it will revitalize the tourist activities at Triyuginarayan. Same in the case of Kedarnath- Ukhimath- Gopeshwar- Badrinath route, it will attract pilgrims to visit Tungnath.
- At the village level, there is an urgent need of formation of Village Disaster Management Committee (VDMC) and Nyay Panchayat Disaster Committee (NPDC) at Nyay Panchayat level, so that the pre and post disaster-related activities may be handled at local level.

In the light of above suggestions the development strategy of mountain region like Kedarnath region of Uttarakhand State need specific approaches and technologies that minimize the damage to fragile ecology, environment, and biodiversity. The economic activities need to be planned in such a way that they do not lead to undue pressure on the natural environment. The technologies used in the production of goods and services and building infrastructure are environment-friendly and not destructive to ecology. Livelihoods have to be secured for the local population, but it is necessary to achieve it through approaches, activities, and technologies that ensure both economic and environmental sustainability.

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