

Title: Disasters, Diversity, Disparity, Discrimination and Vulnerability  
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### **Abstract:**

Disasters bring devastation. Diversity of issues, criterion and priorities bring disparity, discrimination and enhanced vulnerability to the deprived classes of the society, which has a depleting effect on our idea of justice. This paper based on the experiences of the authors; (one a journalist and the editor of an international news network, other an Indian Forest Services officer and two others academicians associated with a large river project) in post disaster scenario of Kedarnath in Uttarakhand on 16<sup>th</sup> June, 2013 and Kashmir floods in September, 2014 presents an account of diversity, disparity, discrimination and vulnerability in the post disaster scenario. The paper points out at the diversity of issues and diversity of impact on diverse kinds of people. The disparity of concerns, implementation levels and approaches of policy brings in discrimination towards relief and rehabilitation and enhances vulnerability amongst the most vulnerable, which causes irreversible mobility of masses. While highlighting the central aspect of diversity, disparity and discrimination during and post-disasters of Uttarakhand and Kashmir through a narrative based on observations and interviews of the affected people the paper proposes for:

- a) A right to compensation;
- b) A policy for identification of the processes and methodology to compensate during and post-disasters and
- c) Accounting of workers and vulnerable people in disaster prone areas.

The paper resorts to 'Capability' Approach to address the right to compensation and the related policy structure especially with reference to the disasters in post disaster scenario.

A narrative on the role of the officials and the community to avoid the role of human beings in disasters is also presented alongwith a detailed account of the involvement of policy structure through the excerpts of a report of the standing committee on water resources (2015-2016), Ministry of water resources, River Development and Ganga Rejuvenation.

## **A Brief Account:**

The devastating floods in Jammu and Kashmir in September, 2014 exposed the fault lines in this strategically important border State's disaster relief and response mechanism and also highlighted the weaknesses inherent in India's disaster management strategy at the larger level. Considered the worst in more than a hundred years in the State, impact of this deluge was felt in 5,642 villages. It destroyed 2,54,000 houses, made millions homeless and severely affected paddy, fruit, maize and other vegetable crops in around 6,51,000 hectares of cropped area [1].

Though the scale at which the relief and rescue operations were launched marked a paradigm shift in Indian State's response mechanism to a natural disaster, but, the weaknesses in the reconstruction and rehabilitation measures initiated in the aftermath of these floods have not received the requisite attention it deserved. Tens of Thousands of flood victims in Jammu and Kashmir continue to struggle to reconstruct their lives as they are yet to receive any viable compensation package to rebuild their houses and create new sources of livelihood. The struggle of these flood victims to seek compensation from the State leads us to an important question: Should there be a rights based paradigm to address the issue of relief and compensation to disaster victims?

It is ironic that despite a high degree of vulnerability to disasters, for almost six decades after independence, India's disaster response strategy was 'reactive' and 'relief-centric' in approach. The enactment of the Disaster Management (DM) Act in 2005 was the first serious effort to restructure India's disaster response strategy from a 'relief-centric' approach to a more proactive "prevention, mitigation and preparedness driven" approach.

### **Worst Floods since 1902:**

In terms of scale of devastation, the floods in Jammu and Kashmir are considered the worst in more than a hundred years. The Parliamentary Standing Committee on Home Affairs in its Report tabled in Parliament in December, 2014 argued that such a flood situation in Jammu and Kashmir, particularly in Srinagar, had not been witnessed since 1902.

A Home Ministry note reveals that the volume of rainfall was recorded highest in Shopian district which received an unprecedented 2953% above normal rainfall while Srinagar district received 1410% above normal rainfall [2].

### **Costliest Natural Disaster in 2014:**

The Annual Disaster Statistical Review 2014 conducted by CRED, IRSS and the Université catholique de Louvain in Brussels argued after assessing the economic damage caused by disasters in different parts of the world that: "The costliest natural disaster in 2014 was the flood in the Jammu and Kashmir region, in India, which cost US\$ 16 billion" [3].

### **Uttarakhand Disaster of 2013:**

Uttarakhand is primarily a mountainous State with a total of about 65% area covered as forest. Kedarnath is situated at a height of about 3,583 meters near Chorabari glacier, the head of river Mandakini, in Rudraprayag district of Uttarakhand State. It is located near the confluence of river Mandakini and river Saraswati on a plateau surrounded by snow clad mountains and glaciers and at a distance of about 2 kms downstream from Gandhi Sarovar lake which, is a snow melt and rain-fed lake 400 m long, 200 m wide and 15-20 m deep at a height of 3,960 m [4].

Starting with an unusual behaviour of monsoon, on 16<sup>th</sup> June, 2013 at 5:15 p.m. the torrential rains flooded the Saraswati river catchment area, resulting in excessive flow across all the channels. As a result, large volumes of water struck the town which simultaneously picked huge amount of sediments enroute. The voluminous water studded with debris from the surroundings alongwith glacial moraines moved towards Kedarnath town, washing off upper part of the city and led to the biggest devastation ever seen in the region. As per the figures provided by Uttarakhand Government over 5,700 people were presumed dead though the figures by various other organizations indicate around 20,000 to 30,000 casualties in this disaster.

**Fault Lines in Disaster Management Strategy:**

In many ways, the unprecedented floods in Jammu and Kashmir and Kedarnath (Uttarakhand) showed that nine years since the DM Act was enacted by parliament, the mandatory legal provisions enshrined in this law had not been effectively implemented.

**Right to Compensation to Disaster Victims:**

The struggle of the flood affected people in Uttarakhand and Jammu and Kashmir seeking relief and rehabilitation leads us to two important questions:

- a) Should the existing Disaster Management Act be amended to incorporate a legal right to relief and compensation to disaster victims? and
- b) Should there be a fixed timeline in the DM Act for fixing the quantum of compensation to the worst affected disaster victims?

## **Introduction:**

India is one of the most disaster-prone countries in the world. According to the National Policy on Disaster Management, "58.6% of the landmass is prone to earthquakes of moderate to very high intensity; over 40 million hectares (12% of land) is prone to floods and river erosion; of the 7,516 km long coastline, close to 5,700 km is prone to cyclones and tsunamis; 68% of the cultivable area is vulnerable to drought and hilly areas are at risk from landslides and avalanches" [5]. What is more alarming is the fact that India is part of the most disaster-prone region of the world. As the International Federation of Red cross and Red Crescent Societies has argued, "Disasters are a part of everyday life and they are increasing. Nowhere are they increasing faster and with greater ferocity than in Asia Pacific, the world's most disaster-prone region where, on an average, 40 percent of the globe's "natural" catastrophe occurs" [6].

In fact, India has faced the wrath of nature and paid a heavy price in terms of loss of human life and property in last three decades. According to a Home Ministry Report (2011), "India due to its geo-climatic and socio-economic condition is prone to various disasters. During the last thirty year's time span the country has been hit by 431 major disasters resulting into enormous loss to life and property. According to the Prevention Web statistics, 1,43,039 people were killed and about 1.5 Billion were affected by various disasters in the country during these three decades" [7].

A World Bank study has argued that India lost about 2% of its GDP between 1991 and 2005 due to disasters [8]. The Disaster Management (DM) Act 2005, brought upon a paradigm shift in India's approach to disaster management by laying down a legal framework to setup new disaster

risk reduction structures, at both central and the state level, and put in place an institutional response mechanism to deal with disasters. It has been almost ten years since the DM Act was enacted. But serious questions have arisen in recent times about the effective implementation of this legislation, especially in the wake of the devastating floods in Jammu and Kashmir in September, 2014.

### **The Magnitude:**

In terms of scale of devastation, the floods in Jammu and Kashmir are considered the worst to hit the State in more than a hundred years. The crisis was exacerbated by the absence of any actionable warning from the Met Department. Security officials involved in relief and rescue operations were caught off-guard in the absence of any specific early flood warning alert from Met Department [9].

The huge devastation caused by floods was visible everywhere in and around Srinagar: all major hospitals in the capital city were submerged deep in water and had become dysfunctional. As healthcare infrastructure collapsed, the fear of an epidemic loomed large in many places with dead bodies of animals floating in stagnant flood waters. Himanshu Shekhar Mishra saw many dead bodies of animals floating in the canal adjoining the Jawahar Nagar locality a week after the flood waters had entered this part of the Srinagar city. The State government did not seem to have the wherewithal to deal with the serious threat it posed to the hundreds of families living in open make-shift tents along this canal. In fact, mobile towers to power and gas supply stations: most of the critical infrastructure lay submerged in flood waters for many days making it difficult for State agencies to provide basic civic amenities to the flood victims.

### **The Magnitude in terms of the Cost:**

The estimated cost of the Jammu and Kashmir floods is around US\$ 16 billion. Significantly, these floods severely disrupted the income generation in the State. The Jammu and Kashmir Finance Minister Haseeb Drabu said in his Budget Speech in the state assembly on 22<sup>nd</sup> March 2015: “The total income of the State has declined by 1.5 per cent in 2014-15 to a little less than Rupees 880 billion. With this the average per capita income of a common man in J&K has declined from Indian Rupees 59,279 to 58,888. These are advanced estimates. The actual figures which will come out next year will be much worse” [10].

Haseeb Drabu went on to add:

“As a result of the decline in State Domestic Product, the tax and the non-tax collection, the revenue collection of the state too has plummeted. With incomes of people and businesses taking such a massive hit, it is but natural that revenues of the State government would also have suffered. The total receipts of the State decreased by Rupees 41 billion”.

The economic loss was so huge that the State government could not release two installments of Dearness Allowance (DA) due from January, 2014 to the State government employees and pensioners till March 2015.

## **Fault Lines in Disaster Management Strategy:**

In many ways, the unprecedented floods in Jammu and Kashmir showed that nine years since the DM Act was enacted by parliament, the mandatory legal provisions enshrined in this law had not been effectively implemented in this strategically important border State.

The DM Act clearly specifies the role of States in putting in place a disaster response mechanism. Section 23 (4) of the DM Act clearly specifies [11]:

“The State Plan shall include,-

- the vulnerability of different parts of the State to different forms of disasters;
- the measures to be adopted for prevention and mitigation of disasters;
- the manner in which the mitigation measures shall be integrated with the development plans and projects;
- the capacity-building and preparedness measures to be taken”.

Section 24 of the DM Act is more specific. It categorically states:

“For the purpose of, assisting and protecting the community affected by disaster or providing relief to such community...the State Executive Committee may –

- control and restrict, vehicular traffic to, from or within, the vulnerable or affected area;
- control and restrict the entry of any person into, his movement within and departure from, a vulnerable or affected area;
- remove debris, conduct search and carry out rescue operations;
- provide shelter, food, drinking water, essential provisions, healthcare and services in accordance with the standards laid down by the National Authority and State Authority;
- ...take such measure or steps for rescue, evacuation or providing immediate relief saving lives or property, as may be necessary in its opinion...”
- establish emergency communication systems in the affected area;

The DM Act assigns this specific responsibility to the District Disaster Management Authority (Section 34). Himanshu noted “As I travelled from one flood-affected area of Srinagar to another, I saw that there was no mechanism to regulate the movement of traffic or public in Bemina and in Jawahar Nagar localities, two of the worst-affected areas of Srinagar. A large number of flood victims had no access to shelter, clean drinking water and other basic civic amenities like healthcare in many flood-affected areas. I saw thousands of people forced to live out on the roadside in open makeshift tents in Bemina. No viable epidemic prevention strategy seemed to be in place. The flood victims had no option but to line up for aid at make-shift medical camps. The collapse of telecom towers had led to a virtual collapse of the communication network in most of the flood-affected areas, making it difficult for flood victims to reach out to relief agencies”.

He further noticed that “The State Government had made no concerted effort to initiate disaster mitigation measures in disaster prone areas. In fact, it had blatantly ignored a specific warning

from the National Institute of Disaster Management (NIDM), India's premier research institution dealing with disaster management. In a Report released in 2012, the NIDM had specifically warned:

“The state is a multi hazard prone region with natural disasters like earthquakes, floods, landslides, avalanches, high velocity winds, snow storms...the unauthorized and unplanned construction on the river banks has disturbed the river ecosystem. Sand and gravel dredging or top soil denudation for brick industry to support growing real estate industry have significantly enhanced the human induced disaster risk in the eco-sensitive zones of the State” [12].

The abysmal failure of the State government in launching an effective relief and rescue mission led to violent protests especially in areas where people had been stranded for days without any help and support from the relief agencies. At some places irate mob of flood victims pelted stones and attacked security personnel involved in relief work. More than 40 boats of National Disaster Relief Force (NDRF) were destroyed as anger rose over late arrival of relief and rescue effort in many flood hit areas. Some Air Force choppers involved in relief and rescue operation were even pelted with stones. The New Delhi Television (NDTV) crew filmed one such attack when they were flying in an Air Force chopper involved in relief and rescue effort. The video footage shot by the NDTV cameraperson showed a small group of youth attacking an Air Force chopper with stones from the ground. These attacks raised concerns about the safety of security forces and media personnel working in a disaster zone [13].

### **Intervention by Supreme Court:**

As the flood crisis unfolded in Jammu and Kashmir, the plight of thousands of flood victims soon caught the attention of the Judiciary. In an order issued on 12<sup>th</sup> September 2014 during a hearing on petitions filed by Prof. Bhim Singh, Colin Gonsalves and Dinesh Kumar Garg respectively demanding immediate rescue, relief and rehabilitation of the flood-affected persons in Jammu and Kashmir, the Supreme Court said:

“The petitioners do not dispute the commendable work being done by the Armed Forces in rescue operations but they submit that the current rescue operations are too inadequate for such huge disaster. It needs no emphasis from us that a calamity and disaster as huge as this deserves national response so that immediate relief is made available to the victims of floods” [14].

The Supreme Court went on to order the Central Government to urgently setup a national agency to coordinate relief operations.

The Court observed: “The Government of India may also consider forming a Unified Agency for proper co-ordination of rescue, relief and rehabilitation operations. It goes without saying that supply of food, drinking water, medicines, fuel and other essential supplies deserve top-most priority and so also the restoration of communication and provision for health-care facilities. After all, lives of people who are affected by such disaster have to be saved” [15].

The apex court went ahead and constituted a special five-member committee to assess the damage caused by the floods. The Committee was asked to visit all the flood-affected areas and submit its report in two weeks [16]. Significantly, the SC-appointed Committee after an independent evaluation of the flood-affected zones in Kulgam, Pulwama, Anantnag, Jammu,

Udhampur, Rajouri and Poonch districts, claimed in its report dated October 9, 2014, "...no effective steps were taken to warn people residing in vulnerable areas of Srinagar city of the fast-approaching deluge of flood and to evacuate them...people remained stranded for days together without food and drinking water, waiting for rescue, which was being elusive." [17]

### **No Consensus on Reconstruction Package:**

Even a year after the worst flood tragedy in the State (Jammu and Kashmir) in more than a century, no political consensus exists on the quantum of the reconstruction and rehabilitation package required to reconstruct the economy, infrastructure and the lives of tens of thousands of flood-affected families. The previous Omar Abdullah Government initially made an official demand to Centre for approximately Rupees 440 billion rehabilitation and reconstruction package in 2014. But the new government which subsequently took over in March, 2015 in the State termed this figure as 'incomprehensive'.

Jammu and Kashmir Finance Minister Haseeb Drabu categorically told the state assembly in March 2015, that, he disagreed with the methodology of quantifying the total economic loss caused by the floods and the quantum of funds required to restore normalcy in the State. Haseeb Drabu told the state assembly: "The biggest issue facing us today is the rehabilitation of the flood victims. The previous Government had submitted a Memorandum to the Central Government seeking financial assistance of around Rupees 440 billion over and above the SDRF-NDRF framework. In the interest of speedy disbursement, we have no choice but to endorse it. But the fact is that, I am neither convinced by the method in which it has been estimated nor the manner in which it has been designed. It is far too adhoc and arbitrary for comfort" [18].

The absence of political consensus on the quantum of economic loss caused by the floods mean that no acceptable figure exists with regard to the quantum of compensation package required to reconstruct lives of disaster victims as well.

### **No Timeframe for Compensation:**

There is no provision in the Disaster Management Act, 2005 for initiating any 'short-term' or 'long-term' reconstruction and rehabilitation measures to rebuild lives and infrastructure in disaster affected areas and provide compensation to victims within a specified timeframe. This perhaps explains why more than nine months since the floods destroyed critical infrastructure and made millions homeless in Jammu and Kashmir, the Home Ministry was still in the process of releasing funds for what it called "a short term relief/reconstruction". An official release issued by Home Ministry on 16<sup>th</sup> June, 2015 said, "... a total of Rupees 50.39 billion has been provided for short term relief / reconstruction measures for the flood affected State of J&K" [19].

Importantly, a Finance Ministry release issued on the same day said, "The Government of India is sympathetically considering the request of the State government for undertaking long term measures to improve the infrastructure in the State...A team of Central Government officers led by CEO, NITI Aayog and Secretary (Expenditure), Ministry of Finance, Government of India

will visit the State in the next week (that is, the fourth week of June) to explore the possibilities in taking into account the requirements of the State” [20].

Considering the huge scale of devastation caused by floods and the financial losses incurred by the Jammu and Kashmir State, a decision to send a central team to assess the quantum of post-disaster reconstruction package required to rebuild the critical infrastructure should have been taken much earlier.

More than 14 months after the flood tragedy, Prime Minister Mr. Narendra Modi announced Rupees 800 billion developmental package for Jammu and Kashmir on November 7, 2015, with a specific allocation of Rupees 78.54 billion towards the “Flood relief, reconstruction and flood management” in the State [21]. It is aimed at reconstructing damaged houses and infrastructure and restore livelihood of traders and small businessmen. But the delay in allocation of funds has led to a considerable delay in initiating the requisite measures to rebuild lives. The local industrialists and traders have termed this package as inadequate. The Kashmir Chamber of Commerce and Industry (KCCI) has termed this package as too little too late. As the President of the KCCI Mushtaq Ahmad Wani said in a statement on 9<sup>th</sup> Nov 2015, “...Hon’ble Prime Minister in his inordinately belated announcement has come out with a baffling allocation of funds in the name of package. The chamber has noted with concern that the amount of money earmarked for flood relief and reconstruction including flood management is mere Rupees 78.54 billion as against the requirement of Rupees 370 billion demanded by the State government exclusively for losses suffered, while, the flood management is estimated to involve a separate expense of over Rupees 300 billion. [22]”

### **Struggle for Relief and Compensation:**

It is the poor who suffer the most during a natural disaster. When the flood waters entered Srinagar and nearby areas, the weak and fragile homes of poor migrant labourers were one of the first structures to get washed away. Thousands of migrant labourers, especially from Uttar Pradesh and Bihar, lost their homes and their source of livelihood. They could be seen desperately seeking aid from the State agencies in different parts of the Srinagar city. To make matters worse, many of them lost their identification documents which made it difficult for them to stake claim for any form of compensation from the official relief agencies.

With the highways blocked because of landslides at several places, they were at the mercy of Air Force to air-lift them out of the disaster zone. At the Srinagar Air Force base, thousands of such poor migrant labourers and their families had to wait for many days in the open to fly to safer zones while the more affluent citizens had the easy option of flying out in commercial flights. Already fragile and financially insecure, floods had further aggravated their problem. Many of them could be seen pleading with relief agencies and government officials for urgent aid.

The struggle of the poor and the underprivileged migrants in Jammu and Kashmir to seek urgent compensation to survive the aftermath of floods leads us to an important question: Should the existing official norms to grant relief and rehabilitation to disaster victims needs to be urgently amended to ensure prompt award of compensation?



## **Tardy Pace of Post-Disaster Reconstruction:**

The absence of such specific provisions in the DM Act has complicated the process of granting relief and compensation to disaster victims in India in an effective manner. In recent months, serious questions have been raised with regard to the failure of state agencies to effectively address the needs and concerns of flood victims in Jammu and Kashmir. Significantly, no official assessment has been made public as to how far the reconstruction and rehabilitation work has moved forward in the entire State.

The Home Ministry had informed Parliament in December 2014 that 2,54,000 houses had been partially or fully damaged in these floods. But as of date, no data has been made public as to how many of these houses have been reconstructed by the central or the State agencies in Jammu and Kashmir. The information that exists in public domain is limited to the data of beneficiaries made public separately by district administrations on an individual basis. The data made available by the Srinagar district administration, for instance, shows that upto 22<sup>nd</sup> August, 2015, 5,730 pucca (permanent) and kacha (temporary) houses had been identified as fully damaged while the total number of houses identified as partially damaged was 24,521 [23]. As per the information made public by the district administration, only 9,872 households had been paid compensation till 22<sup>nd</sup> June 2015, that is, 32.63% of the total affected households. This means that of the total 30,251 affected households, 67.37% households had not been paid any compensation till 22<sup>nd</sup> June, 2015.

Serious questions have also been raised about the quantum of compensation and the methodology employed to calculate the loss suffered by flood victims. In Saroora village in Jammu, the agriculture department issued cheques worth Rupees 47 to Rupees 400 as relief to the flood-affected villagers for their crop and poultry losses nine months after the floods destroyed their livelihood [24]. Poultry farmer Darshan Lal told NDTV that he had birds worth Rs 4,00,000 when flood waters hit this village but he has been given a paltry compensation of 400 rupees.

In the wake of these structural weaknesses in the existing mechanism to dole out compensation to the disaster victims, it has become imperative to reform the existing system of granting relief by devising a new rights-based paradigm to award compensation. This would require a national debate on the broad definition of Compensation per se and delineation of an acceptable legal framework for the identification of beneficiaries.

Such a rights-based paradigm should include a right to every disaster-affected person to reconstruct their dwelling and recreation of livelihood opportunities especially for the underprivileged and poor among the disaster-affected populace. A legal mechanism to scientifically assess the quantum of loss suffered by flood victims must also be incorporated in the DM Act. It would also be necessary to incorporate a fixed timeframe for grant of compensation to every disaster victim. The broad focus should be on constructing a legislative framework which respects the right of every citizen to seek relief and compensation.

Such a legalized institutional mechanism to grant compensation to disaster victims would be especially important for the underprivileged and poor citizens who live in high disaster-prone zones. In such regions, millions of such people have to face the wrath of nature almost every year which often wipe-off their meager assets.

As a Home Ministry Report argued in 2011, “Poverty and risk to disasters are inextricably linked and mutually reinforcing. The poor section of the society is worst affected in case of disaster...Poverty also compels the poor to migrate and live at physically more vulnerable locations, often on unsafe land and in unsafe shelters. These inhabitations of the poor at such locations are either due to the fact that there is no other land available at reasonable cost or it is close to the employment opportunities. The inhabitations of the poor people on marginal land are prone to all types of disasters. The type of construction of these houses further deteriorates the condition. These dwellings made up of low cost material without giving much consideration to technical aspect are easy targets of various hazards” [25].

### **Disaster Management: Elements of Administrative Sensitivity and Issues of Climatic Considerations, A Story of Uttarakhand another Hill State in India:**

Uttarakhand came into existence on November 9, 2000 as the 27<sup>th</sup> State of the Republic of India. It is often referred to as the “Land of the Gods” due to many Hindu Temples and pilgrimage centers found throughout the State. With a population of about 10 million, this State is dominated by the followers of Hinduism [26].

With a Hindu population of over 88%, this Himalayan State of 53,484 Km<sup>2</sup> is bestowed with the famous little four abodes/seats named as Gangotri, Yamunotri, Kedarnath and Badrinath. Badrinath is also one of the four destinations of the abodes/seats named as Puri, Dwarka, Rameshwaram and Badrinath which are located roughly at the four cardinal points of the subcontinent and whose formation is credited to the great 8<sup>th</sup> century reformer and philosopher Shankaracharya [27].

Since the formation of the new State a continuously increasing trend of leisure, adventure, nature and religious tourism in Uttarakhand played a prominent role in its economy but, while doing so various significant features like proper infrastructure development, carrying capacity calculations, fragility of the area and issues of eco-friendly ethics were grossly overlooked. Within a period of 10 years the annual influx of domestic and foreign tourists in Uttarakhand touched new records of about 30 million in 2011-12 from less than 10 million in the year 2000-2001 [28].

The pace and magnitude of land use transition in this part of Himalayan region has increased exorbitantly over the past few decades, primarily as a result of human activity, and may go beyond the ecosystem recovery capacity [29]. Land use change includes sedentarization, agricultural intensification, habitat modification, migration, change of livelihood and lifestyle, biodiversity loss and flash floods. It is a prime source of land, water and soil degradation [30]. Such transitions are directly driven by State policies, a market economy and climate change [31]. This transition has led to seriously altering the various ecosystem services in the State. These services include food, water, predator-prey relationship, flood control, disease control, spiritual benefits, recreational benefits, pollination and nutrient recycling. They maintain the condition of life on earth over which human health is totally dependent. Any alteration with the eco system services directly affects the ability of a biological system to support human needs [32].

### **A True Story: “Kedarnath Disaster” of June 2013:**

Kedarnath is situated at a height of about 3,583 meters near Chorabari Glacier, the head of river Mandakini, in Rudraprayag district of Uttarakhand State. It is strategically located near the

confluence of river Mandakini and river Saraswati on a plateau surrounded by snow clad mountains and glaciers. Kedarnath is at a distance of about 2 Kms downstream from a snow melt, rain fed Lake named as Gandhi sarovar, which is 400 m long, 200 m wide and 15-20 m deep at a height of 3,960 meters [33]. Vulnerability of Kedarnath temple could be easily seen from the huge mass of ice and water accumulated just in the close vicinity, upstream of it.

It started with an extremely unusual behavior of monsoon, in the month of June 2013, over North India. The Indian Meteorological department (IMD) linked heavy to very heavy rainfall on the higher Uttarakhand, Himachal and Nepal Himalayas because of the convergence of the South West Monsoon through Westerly disturbances, which led to the formation of dense cloud over the Uttarakhand Himalayas [34]. The Wadia institute of Himalayan Geology (WIHG) at Chorabari glacier camp recorded 210 mm rainfall in 12 hours between 15<sup>th</sup> June (5:00 a.m.) and 16<sup>th</sup> June (5:00 a.m.). On 16<sup>th</sup> June 2013 alone from 5:00 a.m. to 5:00 p.m., 115 mm rainfall was recorded, causing 325 mm rain in 24 hours.

On 16<sup>th</sup> June 2013 at 5:15 p.m. the torrential rains flooded the Saraswati river catchment area, resulting in excessive flow across all the channels. As a result, large volumes of water struck the town which simultaneously picked huge amount of sediments coming enroute. The voluminous water studded with debris from the surrounding regions and glacial moraines moved towards Kedarnath town, washing off upper part of the city and leading to the biggest devastation ever seen in the region. The second event occurred on 17<sup>th</sup> June, 2013 at 6:45 a.m. After overflow and collapse of the moraine damped Chorabari Lake which released large volume of water which caused another flash flood in the Kedarnath town leading to heavy devastation downstream (Gaurikund, Sonprayag, Rambara etc.). Torrential rains also rapidly melted the thickly covered snow on Chorabari glacier allowing millions of gallons of water to accumulate in the lake. A “no outlet type lake” could not bear the heavy potential energy of the accumulated water and the shear strength of the lake reduced to the level that this moraine dammed lake breached, causing an enormous devastation in whole of the Kedarnath valley [35].

### **Causes of this Disaster:**

Various influences that contributed to such a vast loss in “Kedarnath incident” are narrated as follows:

(a) Administrative Neutrality:

- (1) *Uncontrolled tourist inflow* without a scientific assessment of the carrying capacity of the route.
- (2) *Lack of proper sensitization* and awareness of the visitors about the area.

(b) Unscrupulous practices:

- (3) Use of fragile river banks for various commercial constructions like hotels, resorts, houses, shops and other public amenities there by obstructing the natural flow of the water. Such constructions are mostly illegal and largely influenced by local factors. Controlling authorities remain either helpless or collude as these settlements grow extremely fast under a strong patronage. *This activity also devoid the river bank areas from vegetative cover which further accelerates landslides to a great extent.*
- (4) Uncontrolled detonation for roads, tunnels and dam construction has severely increased the fragility of the area leading to frequent landslides at a much lower

threshold. There has been a complete overlook on the debris disposal generated during above activities. This results in to severe land erosions on the lower hill side. Muck disposal being a costly affair is mostly avoided by the contractors and the chance of fair connivances can never be overruled.

(c) Technical weaknesses:

(5) Least consideration of the appropriateness of the land type, material use and construction technology in developing the structures in and around the affected areas. It is worth mentioning that about 60% of the houses constructed way back by the local inhabitants remained unaffected and intact primarily because of the fact that they strictly followed the *basic eco-ethics* of the area during construction.

(6) No early warning was given by the agencies while it was pouring heavily since 14<sup>th</sup> of June. Any cautions and warning could have reduced death tolls and people could have taken shelter in higher places as many did starting from 16<sup>th</sup> June only.

(d) Discarded participation:

(7) Lack of participatory approaches in decision making and administrative actions for the better management of the holy shrines have been a major reason for such a widespread devastation. Indigenous communities with their traditional knowledge can suggest amazing solutions to the local problems.

(8) Local communities, in general, have great respect and conviction for these shrines. They are radical to various issues related to their belief and are really honest to their perceptions. They are certainly a great resource to the administrative and executive units working at these places but unfortunately they remain highly underutilized or not consulted with the affairs of the area.

### **Post Disaster Scenario:**

A new trail of problems have cropped up in the area post this disaster. These problems may be summarized as follows:

- The whole belt of Kedarnath area is suffering from a post disaster trauma.
- Tourist influx has considerably dipped resulting into livelihood problems to the local people.
- Facilities like education, primary health, fair price ration, water, gas etc. are badly affected.
- Over 400 villages are at the verge of relocation, so lot of sentimental fatigue is going on within the local communities.
- Loss of agriculture.
- Loss of social set up.
- Loss of identity.
- Uncertain future.

### **What Says the Law?:**

The existing law empowers the National Disaster Management Authority (NDMA) and State Disaster Management Authority (SDMA), the primary nodal agencies to deal with disasters, to just formulate and “recommend” guidelines for grant of relief to the disaster victims.

According to section 12 of the Disaster Management (DM) Act 2005 [36]: “The National Authority (NDMA) shall recommend guidelines for the minimum standards of relief to be provided to persons affected by disaster, which shall include;

- the minimum requirements to be provided in the relief camps in relation to shelter, food, drinking water, medical cover and sanitation;
- the special provisions to be made for widows and orphans;
- ex-gratia assistance on account of loss of life as also assistance on account of damage to houses and for restoration of means of livelihood;
- such other relief as may be necessary.

Similarly, section 19 of the DM Act clearly specifies the role of SDMA in the grant of relief:

“The State Authority (SDMA) shall lay down detailed guidelines for providing standards of relief to persons affected by disaster in the State: Provided that such standards shall in no case are less than the minimum standards in the guidelines laid down by the National Authority (NDMA) in this regard.”

The aforementioned provisions in the DM Act clearly indicate that nodal disaster management agencies at both Central and State level can only ‘recommend’ guidelines for finalizing minimum standards of relief for disaster victims. Also, the process of granting relief and compensation is cumbersome and time-consuming as it has to be routed through a complex web of official procedures.

### **Right to Compensation to Disaster Victims:**

The struggle of the flood-affected people in Jammu and Kashmir and Uttarakhand to seek urgent relief and rehabilitation leads us to two important questions: a) Should the existing Disaster Management Act be amended to incorporate a legal right to relief and compensation to disaster victims?; b) Should there be a fixed timeline in the DM Act for fixing the quantum of compensation to the worst affected disaster victims?

Some countries have sought to codify the Rights of disaster victims to seek compensation by incorporating specific provisions in their Disaster Laws. In the United States, for instance, the "Robert T. Stafford Disaster Relief and Emergency Assistance Act" (broadly referred to as "The Stafford Act") clearly outlines the broad responsibilities of the State in providing compulsory relief and compensation to disaster victims. The Section 410 of "The Stafford Act" has a provision for grant of an "Unemployment Assistance" to disaster victims who have lost their source of livelihood. The Act says,

"The President is authorized to provide to any individual unemployed as a result of a major disaster such benefit assistance as he deems appropriate while such individual is unemployed for the weeks of such unemployment with respect to which the individual is not entitled to any other unemployment compensation (as that term is defined in section 85(b) of title 26) or a waiting period credit. Such assistance as the President shall provide shall be available to an individual as long as the individual's unemployment caused by the major disaster continues or until the individual is reemployed in a suitable position, but no longer than 26 weeks after the major disaster is declared..." [37] (Page 44-45).

“The Stafford Act” also provides for "Reemployment Assistance" by States. According to section 410 of this Act,

"1) State Assistance - A State shall provide, without reimbursement from any funds provided under this Act, reemployment assistance services under any other law administered by the State to individuals receiving benefits under this section [38].

In fact, “The Stafford Act” also incorporates a detailed provision for "Emergency Grants to Assist Low-Income Migrant and Seasonal Farmworkers (42 U.S.C. 5177a)". The Act says,

"The Secretary of Agriculture may make grants to public agencies or private organizations with tax exempt status under section 501(c) (3) of title 26, that have experience in providing emergency services to low-income migrant and seasonal farm workers where the Secretary determines that a local, State or national emergency or disaster has caused low-income migrant or seasonal farm workers to lose income, to be unable to work, or to stay home or return home in anticipation of work shortages. Emergency services to be provided with assistance received under this section may include such types of assistance as the Secretary of Agriculture determines to be necessary and appropriate" [39].

### **The Scenario at Policy Levels:**

Excerpts of a Report from standing committee on water resources (2015-2016), ministry of water resources, river development and Ganga rejuvenation:

Issues concerning flood management, compensation and status of ownership of submerged and eroded land in the country, including compensation to farmers for loss of their crops destroyed by floods and right to disposal of the sand left in the fields of farmers:

{Action Taken by the Government on the Observations / Recommendations contained in the Fourth Report (Sixteenth Lok Sabha) of the Standing Committee on Water Resources }

Eighth report: Important Highlights

Parliamentary Committee's Recommendation (Para No. 9)

#### **1) ON COMPENSATION**

Pages: 43-44

“The Committee further notes that the XII Plan Working Group on Flood Management and Regional Specific issues had recommended providing of Central assistance by the Ministry of Home Affairs to the States under State Disaster Response Fund (SDRF) and National Disaster Relief Fund (NDRF) to facilitate immediate relief in calamities of severe nature including floods. It was also recommended that a provision be made in the SDRF/NDRF guidelines for assistance to States to meet expenditure on restoration of critical flood management structures.

The Committee is pained to note that the aforesaid recommendation has not yet been implemented by the Ministry of Home Affairs and further no time schedule has been specified for the implementation of the same. Taking note of the dire necessity of tackling the recurrent devastations caused by floods year after year and to alleviate human miseries and also to reduce the ultimate colossal damage to sand, houses and public utilities, the Committee recommends that the Ministry, should in consultation with all the flood-prone States, chalk out a time-bound implementable programme of action in this regard”.

## Reply of the Government

“Regarding relief during natural calamities, the Ministry of Home Affairs has informed that the Central Government had constituted State Disaster Response Fund (SDRF) in each State for meeting the expenses for providing immediate relief to the victims of notified natural disasters. In case of ‘severe’ disaster, the Central Government provides additional financial assistance to the State from National Disaster Response Fund (NDRF), provided there is no adequate balance in SDRF. The norms of SDRF/ NDRF are based on the recommendations of the successive Finance Commissions. The norms and guidelines of SDRF/NDRF permits only immediate repair works for damaged infrastructure. The medium and long term repair/ reconstruction work are not permitted under SDRF/NDRF”.

The norms of SDRF/NDRF have been recently revised on 8<sup>th</sup> April, 2015. The norms permit following repair works under SDRF/NDRF:

- (i) Immediate repair of damaged canal structures and earthen/masonry works of tanks and small reservoirs with the use of cement, sand bags and stones.
- (ii) Repair of weak areas such as piping or rat holes in dam walls/ embankments.
- (iii) Removal of vegetative material/building material/ debris from canal and drainage system.
- (iv) Repair of embankments of minor, medium and major irrigation projects.
- (v) Any expenditure beyond the norms of SDRF/NDRF is required to be met from State’s own resources.

## 2) ON BRINGING WATER IN “CONCURRENT LIST”

Pages: 41-42

Parliamentary Committee’s Recommendation (Para No. 1)

“The Committee observes that despite having more than 18% of world's population, India has only 4% of world's renewable water resources. The Committee also notes that the variability of rainfall in space and time is high in the country. The monsoon season accounts for nearly three-fourth of annual rainfall leading to natural calamities in the form of floods, erosion in flood plains of the rivers, besides drought. The Committee notes that though the subject of flood control does not find a mention in any of the three legislative lists included in the Constitution of India, drainage and embankments are specified in entry 17 of list II (State List).

Flood management schemes are planned, investigated and executed by the State Government concerned. The role of Union Government is technical, advisory, catalytic and promotional in nature. The Committee, however, feels that the role of the Union Government should extend beyond this as not all the flood-prone States are well-equipped to manage devastating floods with the limited resources they have in their possession.

However, considering the limited role presently vested in the Union Government with regard to floods under the present constitutional set-up and the urgent necessity to take proactive steps to combat and control recurrent floods in the country, the Committee strongly recommends that the Central Government and State Governments should make necessary periodic reviews to facilitate enhanced role by the Union Government in flood related aspects so that better coordinated, pre-emptive measures are taken before there are indications of impending floods in their respective States.

The Committee therefore, feels that mere hand holding by the Union Government is not sufficient and the Government must play a pro-active role which according to the Committee can effectively be done if the subject “Water” is brought under Concurrent List of the Constitution of India”.

Reply of the Government

“As far as the matter relating to bringing water in the Concurrent list of the Constitution is concerned, it is stated that demands have been raised by the professionals and civil society to bring ‘water’ in Concurrent list primarily to ensure national perspective on water management and to avoid inter-State disputes and the tendencies of the State Governments to use more water (in excess of justified needs through efficient use) only to claim more apportionment of water in inter State rivers. However, these have been opposed by most of the States.

The matter was also examined by the two Commissions on Centre State Relations chaired by Justice R.S. Sarkaria (1983-88) and Justice M.M. Punchhi (2007-10). The proposal to bring ‘water’ in the Union/ Concurrent list did not find favour with either of these two Commissions.

Further, Constitutional amendment for bringing ‘water’ in concurrent list, would need to be passed in both the Houses by a majority of the total membership of that House and by a majority of not less than two thirds of the Members of that House present and voting. This would also require ratification by the Legislatures of at least one-half of the States. Thus, there is need to have wider consultation with all stakeholders to bring broader consensus in the matter”.

### 3) ON JAMMU KASHMIR FLOODS

Pages: 24-26

Recommendation (Para No. 5)

“The Committee note the statement of the representative of the Ministry that the Central Water Commission has no forecasting network in Jammu & Kashmir. This fact reveals an appalling gap in the flood management efforts of the Government which was exposed to public glare during the unprecedented flood havoc in the State of Jammu & Kashmir in 2014. The Committee therefore, recommends that Central Water Commission should waste no further time but initiate urgent remedial steps to set up a centralized forecasting station in the State. They also desire the Ministry / Central Water Commission to work in dose coordination with the local /State administration so that works for flood control in that State do not proceed in an unplanned and haphazard manner as witnessed during the flood fury of 2014.

Reply of the Government

“During XII Plan, the Ministry has proposed to set up 3 flood forecasting stations of CWC in addition to the existing flood forecasting station of the State Government. The CWC would assist the Government of J&K by providing nearly real time flood forecasts at its 3 stations.

Besides, data of 19 base stations of CWC, would also be available with the State Government and with this, the State would have enhanced capability to provide flood warning to the people in the related area more effectively. Meanwhile, the State Government formulated a DPR for emergent measures in River Jhelum, which had been techno-economically cleared by the Ministry’s Advisory Committee on 25.05.2015. However, the works on Jhelum River are now proposed to be funded by Finance Ministry under the special package to J&K for infrastructure



reconstruction. After the devastating floods of 2014 which resulted in colossal damage to human life and property and having felt an urgent need to address the problem of floods in the valley on long term basis, MoWR, RD &GR constituted a Group headed by Chairman, CWC on 18.09.2014, to conduct an in-depth study and analysis of the recent unprecedented floods in J&K so as to make suitable recommendations along with a detailed action plan to deal with such threat in future. The Group was also to review the status of project 'Flood Threat Management of river Jhelum' by Government of J&K.

Based on the analysis of the flood in J & K, the Group recommended following measures to manage floods in J & K depending upon the implementation time:

Immediate, Short term and Long term.

*(A) Immediate Measures (to be implemented before next flood season):*

- (i) Closing of breaches.
- (ii) Development of Flood Forecasting and Warning Networks.

*(B) Short Term Measures (to be implemented within 2 to 3 years):*

- (i) Raising/ strengthening of existing embankment.
- (ii) Enhancement of carrying capacity of existing Flood Spill Channel (FSC).
- (iii) Dredging of Out Fall Channel (OFC) to increase its carrying capacity.
- (iv) Setting up of rapid action dewatering facilities in urban areas.
- (v) Establishment of adequate emergency response measures and rescue areas.

*(C) Long Term Measures (to be implemented within 5 to 10 years):*

- (i) Additional Supplementary Flood Spill Channel.
- (ii) Creation of Storage.
- (iii) Development and enhancing the capacity of Wullar Lake.
- (iv) Flood Plain Zoning.
- (v) Checking of sewage/solid waste from urban areas.
- (vi) Afforestation and catchment area treatment along the hill slopes.
- (vii) Improvement of the flood warning times.

As a follow-up action on recommendation (No A2 & C7), CWC has developed rainfall-runoff model based hydrological/hydrodynamic model for flood forecasting at Ram-Munshibagh (Srinagar) on Jhelum using hydrological data of CWC network, hourly rainfall data of IMD network & rainfall forecast of IMD. With the help of such model, flood forecast with sufficient warning time is generated & shared with the State Govt. with effect from 2015 monsoon season. With the help of flood forecasting, suitable and timely action will be taken state disaster management to minimize the losses to movable properties and lives”.

Pages : 28-29

Parliamentary Committee's Recommendation (Para No. 13)

The Committee note from the reply of the Ministry that the disastrous flood of Jammu and

Kashmir was due to combination of several factors, the primary being the low carrying capacity of existing Flood Spill Channel (FSC). With passage of time the carrying capacity of existing FSC diminished from 481.45 cumec (17080 cusec) to nearly 100 cumec (3531 cusec). The Committee is pained to note that the work undertaken to enhance the capacity under scheme "Flood threat of river Jhelum - Urgent works" is yet to be completed to maintain the designed capacity of River Jhelum passing near Srinagar city.

Similarly, the live storage capacity of Wularlake, which has been reduced due to siltation, etc., needs to be enhanced in order to reduce back water effect and absorb more flood water, thereby reducing the impact of flood in its upstream areas.

The Committee feels that the floods in Jammu & Kashmir though unprecedented could have been managed in a more appropriate way had there been no delay in completing the pending works which have a direct bearing on management of floods in Jammu & Kashmir. The Committee are therefore of the view that all works including flood spill channels regarding flood management in Jammu & Kashmir and other parts of the country should be given top priority and a time bound programme should be formulated in consultation with the State Government to complete the pending works expeditiously. The Committee would also like to have a status report on the work "Flood threat of river Jhelum-Urgent works"..."

#### 5) OFFICIAL DATA ON DAMAGE FROM FLOODS

i) Damage from floods in 2013: Annexure: Pages 62-63

Area Affected in M ha: 3.640 M ha  
Population Affected: 21.147 million  
Damage to No. of Houses: 6,62,495  
No. of Cattle Lost: 1,56,855  
No. of Human Lives Lost: 2,137  
Damage to Crops (Area): 3.636 M ha

ii) DAMAGE FROM FLOODS IN 2014: Annexure: Pages 64-65

Area Affected in M ha: 6.837 M ha  
Population Affected: 10.699 million  
Damage to No. of Houses: 1,64,127  
No. of Cattle Lost: 14,546  
No. of Human Lives Lost: 1301  
Damage to Crops (Area): 4.670 Mha

#### **Officials and the Community have a Role to Play:**

#### **An Actual Experiment of 2003:**

An experiment, in an equally fragile valley (as in the case of Kedarnath) known as "Bhagirathi valley" was conducted by one of the author's Kapil Joshi in the year 2003-04, in his capacity of "Divisional Forest Officer" cum "Director Gangotri National Park". It was an area of Gangotri pilgrimage with a track of 18 Kms till Gaumukh glacier. Gaumukh being the origin point of the river Ganga is highly respected and regarded. Gangotri is situated in district Uttarkashi of Uttarakhand State at a height of 3,100 meters and the height of Gaumukh is about 3,950 meters. The track from Gangotri to Gauhukh is a simple, fair-weather, bridle path, covered with scanty

vegetation of Bhoojpatra, (*Betula utilis*) Burans, Oak, and Chir Pine trees. After Chirwasa, which is the only night shelter for the pilgrims, there is no vegetation in the area. The whole area is of utmost religious importance. As per the Hindu mythology, in order to purify the soul and wash away the ashes of deceased 60,000 sons of king Sagar, at this very place, the Goddess Ganga advented on Earth from Heaven. Because of the extreme spiritual feelings, hundreds of thousands of pilgrims visit this area annually.

In the year 2003, when Kapli Joshi first visited this place, the whole area around the Gangotri temple was just like a small slum and a concrete jungle consisting of hotels, shops, ashrams, offices and many other tourist amenities. The overall scenario of the pilgrimage was highly unrepresentable as lots of unauthorized construction was going on, heaps of garbage were rotting behind every shop, hotel and ashram. An old incinerator of municipality was regularly burning the plastics, just 100 yards away from the main temple shrine releasing highly toxic gases in the atmosphere. Pilgrims tracking to Gaumukh were totally unmanaged and indiscriminate lopping of precious “Bhooj Patra” (*Betula utilis*) tree was going on primarily for the purpose of walking stick and secondarily as a memento to take it back home by the visitors.

Thousands of Kanwariya (Pilgrims tracking till Gaumukh to bring holy Ganges water) were indiscriminately destroying the whole ecosystem of the area by camping on the river bed, cutting and burning wood, cooking food, leaving behind used clothes and footwear at Gaumukh and throwing all sorts of religious waste just at the onset point of holy river Ganga. Though the pilgrimage area was vested within the recorded reserved forest and many government agencies were working but no regulation was ever imposed over their unethical and illegal activities. Under the above circumstances Kapil Joshi says that “he intentionally adopted a reflexive approach for setting the things right. In this approach he had repeated discussions with almost all the stakeholders of the area. They included revenue department officials, Temple committee members, Municipal board authorities, local MLA (member of the legislative assembly), N.G.O’s, nearby villagers, shopkeepers, hoteliers and many renowned saints living in the ashrams (Holy Abodes).

It was surprising to know that everybody was very keen and intense for doing something good for this pilgrimage but there was an extreme lack of initiative and leadership. An element of transfer of responsibility was prevailing amongst all of them. Their understanding of changing climatic components of the area was perfect but, somehow they were unable to take corrective measures because of the absence of a trustworthy leadership either at departmental or at individual levels. Through interpretation of the interpretations given by various stakeholders, he could well understand that everybody was willing to take certain initiative for the betterment of the area which could be followed in the future but nobody was ready to take the call.

### **Conducted activities:**

Within no time after understanding the basic problems of the area Kapil Joshi and his team initiated following corrective but participative measures in this area starting March, 2003.

- (i) Process for cleaning up the shrine.
  - (a) Regulatory process for strict enforcement and to stop unscrupulous practices. A complete ban on burning of the plastic in the incinerator was ensured with the support of Gangotri Municipal body.
  - (b) A complete ban on any sort of new construction was ensured with the help of Gangotri Development authority and the District Collector.

- (c) Provision for strict penalties were framed for the local commercial establishments, if found disposing the produced waste illegally.
- (d) Separate containers for degradable and non-degradable waste were ensured in hotels and a scheme for producing organic manure from the degradable waste was initiated.

Above regulatory actions were taken with extremely high spirits by almost all the stakeholders of the area to start the pilgrimage season of 2004 with a new wave of inter-departmental co-operation and collaboration.

- (ii) Managerial process for consensus evolution: The “Kanwar yatra” is an annual pilgrimage of devotees of lord Shiva, known as Kanwariya, to Hindu pilgrimage places of Haridwar, Gaumukh and Gangotri for fetching holy water of river Ganga. Thousands of Kanwaris reach Gangotri every year in the month of July-August. They move up to Gaumukh and hardly accept any regulations enroute. These pilgrims were very sensitively tackled and were humbly told about the misdeed they are causing unintentionally to the holy environment of this pious shrine. They were explained about the religious importance of the Bhooj patra trees and were technically revealed the reason of restricted entry in the Gaumukh area. Through a sequence of progressive and healthy conversations, a first ever barrier to regulate the entry of pilgrims was established at a place known “Kankhu” just few yards ahead of Gangotri temple on the way to Gaukukh.

This arrangement of recording complete details of a “Kanwariya” and restricting limited number entry not only helped in restoring the degraded ecosystem but also worked as a great help during any mitigation related activity [40].

- (iii) Training, awareness and skill development process: Realizing the sensitivity and vulnerability of the area, it was decided to train and coach few forest personnel, so that they can meet any emergency faced by the visitors enroute to Gaumukh. Four young members of the forest staff were given a complete course of basic mountaineering at National Institute of Mountaineering, Uttarkashi. This type of skill development is needed in case of any rescue operations and to lessen loss of life and property.

If one has an all encompassing look over actions taken in a small experiment conducted in Gangotri at “Bhagirathi valley” and the factors responsible for the damages in “Kedarnath disaster” at “Mandakini Valley”, one finds a perfect correlation among them. If the actions taken in the experiment could be generalized at a larger level, the factors responsible for the heavy damages suffered in Kedarnath disaster could be mitigated to a much larger extent. Natural calamities are beyond a man’s control but moderation of loss and fatality to a lesser intensity is truly achievable.

### **Capability Approach, Disasters, Disaster Management and Right to Compensation:**

Right to compensation as emphasized upon in case of disasters has a reflection of ‘capability’ [41]. Capability approach by perspective and context holds an intense relationship with understanding the needs of the disaster effected people and compensating them on the one hand and on the other hand is a strong enabler to support them for meeting the post disaster scenario in the pre-disaster stage as demonstrated in the narration with reference to the Bhagirathi Valley experiment demonstrated in preceding sections. Actually it’s a matter of reducing the vulnerabilities of the people most likely to be effected by the disasters which involves cultural

change towards the disaster prone areas with the socio-economic-political perspective and also preparedness especially in terms of accounting for the people's loss to enable appropriate compensation. Capability perspective while holding vast connotation, holds relevance to be associated with every stage of the aforesaid process of addressing the pre and post disaster situations. How it may be associated is yet another area of analysis and understanding but, initially it may be seen with the similar relationship it has with people in general. Further, the aspects of people accounting, accounting of vulnerabilities, accounting of all kinds of losses including property, resources, livelihood, prospects of livelihood, health etc. may be introduced to enhance the range of association of 'capability approach' with the subject area.

### **Conclusion:**

The paper emphasizes upon the devastation brought by flood related disasters in the cases of Jammu and Kashmir and Kedarnath flood incidents. Authors based on their primary experience because of being associated with the demonstrated situations in different capacities have narrated the ground situation and raised the questions with reference to pre and post disaster scenario.

Government policy structure has been elaborated with the support of available reports and excerpts of discussions at the levels of the policy making bodies.

Self driven experiments in official capacity have been narrated to strengthen the argument while right of compensation has been projected as a necessity with the questions associated with such a proposition.

Finally the authors support the association of 'capability approach' for addressing the issue in all the stages including pre and post disaster scenario.

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