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# Challenges in recovery Phase related to Floods: Case Study of District Ambala, Haryana, India

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## Abstract

*India, the country of diversity spends on an average about two percent of GDP on disasters due to its high vulnerability towards natural disasters, arising the dire need for systematic and strategic approach towards Disaster management. The most important and crucial phase of the Disaster Management is the Disaster recovery which is the practice by which local and central government and various agencies assist victims of disaster in recovering from affects of disaster and bring them back to normal routine work. In the preliminary recovery phase their personal needs are fulfilled by the local government and agencies and their day to day services are restored to the level so that they can manage the continuing process. After initial recovery, steps are taken for reconstruction and rehabilitation measures. Central government helps in disaster recovery by providing funds to states to lessen the monetary burden associated with the provision of relief payments to the victims of natural disaster and re-establishment of infrastructure. Although the assistance from government plays an important role in recovery but all the efforts of Disaster recovery have to be realized by the affected community itself. They can involve International and National agencies in rehabilitation programs, but there is an inherent delay associated with the outside support. The task becomes more complicated because rehabilitation involves various crucial types like social, physical, and psychological. Out of these, the most crucial is psychological recovery as it presents lot of constraints on the part of victims and stakeholders. This paper presents the landscape of Ambala District with specific challenges to the flood recovery plans. The stakeholder's perspective has been presented from the community driven recovery strategy.*

**Keywords:** Natural disasters, recovery, flood.

## Introduction

Geo-climatic conditions of diverse India makes it one of the most disaster prone country in the world. A disaster may it be natural or man-made leads to intensive damage and loss of life and property[1]. It is an event which causes acute interruption of the day to day operations of the affected area. It not only brings the material and physical losses but it also brings distress and psychological trauma to the survivors. Survivors lives a very stressed life for a long period of time, suffers with psychiatric disorders and faces many socio-economic problems[2,3]. Natural disasters are caused by natural calamities such as floods, droughts and earth tremors etc. whereas man-mad disasters are caused by the actions of humans such as disasters caused by industrial or transport accidents, air or train crashes, bomb explosions, terrorism, environmental pollution and political unrest etc. Every year, India is suffering with different kinds of natural disasters like floods, landslides ,drought, cyclones, typhoons and earthquakes. India's 68% of land area is prone to droughts, 55% of area is susceptible to earthquakes of different magnitudes, 8% of landmass is vulnerable to cyclones and 12% of area is prone to floods[4,5]. These natural disasters are affecting millions of people every year and bringing huge downfall to country's economy. After the occurrence of disaster, a huge amount is spent every year for providing relief and rehabilitation to disaster affected victims or communities.

Although different regions of India suffer from different risks but it is highly prone to floods. Floods in India mainly occur in the months of June to September and are brought about by heavy rain during this monsoon season. About 12 % of the total land mass of India is flood prone. Floods or heavy and unmanageable inundation is generally caused by an excessive overflow of water over the natural banks of river due to incessant rainfall, heavy rainfall synchronization with river spill or poor drainage, gradual erosion of the river bank reducing the capacity of rivers to contain the water, sediment deposition, avalanches and landslides blocking the normal course of the river, change of river course by earthquake, failure of dams, blockages in waterways, sewage systems etc.

Other reason for frequent floods in India is global warming. Like other developing countries. India is also cutting forests to set up new industries, cities and buildings etc. at very fast pace which has reduced the infiltration causing higher frequency of floods[6,7]. The fast growth of industries leads to destruction of ecology which in turn results in degradation of land and rapid increase in natural disasters[8,9].

The high incidents of flood damage to buildings are due to foundation scouring and settlement and subsequent wall collapse under hydro-dynamic loads, Wall collapse either due to inadequate bearing capacity caused by saturation under heavy rain or due to inundation leading to collapse of roof. The extent of damage to houses depends upon the nature of construction and extent of floods that they are exposed to. Damage includes overturning of bamboo and wooden structures due to uplift caused by heavy force of water, mud wall yielding due to prolonged exposure to water, efflorescence of brick walls – covering of the walls with salt due to prolonged water logging, damage to finishing materials or floor or walls due to silt deposition, permanent dampness of lower floors and walls making them uninhabitable and leading to decay of wooden and other facilities, cracks on walls and floors due to partial settlement of sub-soil, damage to other infrastructure such as roads and Railways, water Supply, drainage, sewerage, telecommunication network, electricity network, crops etc[10] The most significant loss due to heavy flood is the life of human and livestock.

Although many states of India has suffered with high floods but this paper presents an overview of the recovery challenges of Ambala district of Haryana.

District Ambala is comprised of three tehsils named Ambala, Barara and Naraingarh. It is situated on the North-Eastern edge of Haryana. Its latitude is 30° 21' North and longitude is 76° 52' East. On its South-East border lies district Yamuna Nagar. On its Southern side lies Kurukshetra District and on its western border lies Patiala and Ropar districts of Punjab and the Union Territory of Chandigarh. North and North-East side of Ambala district is bounded with the Shivalik Range of Solan and Sirmaur districts of Himachal Pradesh. The total area of Ambala District is 1574 sq. km[11].

The climate of Ambala is of continental nature. Summers are very hot and winters are remarkably cold. In the months of May and June, temperature rises over 48°C and in winters temperature goes down to -1°C also. Ambala has a semi-arid as well as tropical climate.

Months from July to September receives highest rainfall in ambala (around 70%) and 30% rainfall is received from the months of December to February. In Haryana, Ambala receives highest rainfall (average 47.16 inches per annum).

The Ambala district is comprised of three streams namely Markanda, Dangri (Tangri) and Ghagghar. The Markanda and the Dangri streams drain into the Ghagghar river ultimately.

Ambala district becomes flood sensitive zone at the monsoon time. The district area is occupied by Indo-Gangetic alluvium. There are no surface features worth to mention except that the area is traversed and drained by seasonal streams namely Tangri, Beghna and Markanda. Physiographically the area is flat terrain. However a little part in the extreme north eastern area of the district is occupied by Shivalik hills, and falls in the zone of "Dissected Rolling Plain". The area slopes towards southwest with an average gradient of 1.5m/km. The general elevation in the district varies between 245m to 300m above MSL. The soils are non-calcareous and sandy loam on the surface, and loam to clayey loam at depth, and placed under the classification of soil as Udipsamments/Udorthents.

In this paper, the Recovery Challenges have been discussed to deal with floods in District Ambala of Haryana State. In this district there are 499 villages and 6 blocks. It consists of three tehsils (Ambala, Barara, Naraingarh) and four sub-tehsils (Ambala Cantt, Saha, Mullana, Shazadpur). The main crops of ambala district are rice, wheat and Sugarcane. It is well known for its scientific industries and cloth market. The scientific apparatus like glass apparatus, lab equipment and microscopes etc. are the major products manufactured by scientific industry. Cloth market has huge variety of suits, lehengas and sarees. Customers both retailers as well as wholesalers come from nearby states like Punjab and Himachal Pradesh and union territory Chandigarh for the shopping of dress materials.

At the time of heavy rainfall, the affected area which includes towns and number of villages is cut off and is affected by flood waters with filthy homes experiencing inundation. The business activities are affected to great extent and directly affect the livelihood of lakhs of unskilled and semiskilled daily wage workers.

**Causes of Floods in the district:** Ambala Tehsil is surrounded by two rivers. First is Dangri(Tangri) to the south of the Ambala which start flowing from the Morni Hills. It moves towards south-westerly direction after crossing the Ambala Cantonment. On the way it is joined by streams known as Baliali Nadi near village Chajju Majra and Omla and Amri near the villages of Segta and Segti. After that Narwana branch of Bhakhra main canal crosses it and then it enters the Patiala district of Punjab. Second river is Ghaggar river to the north of Ambala, which rises in Sirmaur district of Himachal Pradesh and then passes the Ambala district near Ambala City for short distance. The main reasons of floods in Ambla Tehsil are the number of breaches in the rivers of Dangri, Ghaggar and its tributaries. At the time of heavy rainfall, heavy silt is carried away by flood water causing the raise in riverbed every year and results in Floods[12].

Tehsil Barara had faced heavy floods in the year 1955-56,1978, 1988 and 1995. Reason for floods was that stream Markanda and its tributaries were overflowing with the water during the rainy season. The Markanda, rises from Dharti Dhar range of the state of Himachal Pradesh and then the district after cutting through the shivalik range. The broad river channel between Kala Amb and Mullana becomes narrow to the south of Mullana[12].

The Naggal and Adho Majra village are part of tehsil Ambala-I of Ambala district and are situated 20 km and 12 km respectively towards east of Ambala headquarters. These villages are located in low-lying pocket made by Ambala Hissar Road and Satluj Yamuna Link Canal. The SYL canal has breaches at many places. Water can drain only from Tangri bed, there is no other way out. The insufficient drainage system of area makes it flood prone[12].

## History of Floods

**1978:** Heavy rainfall in Haryana in 1978 lead to heavy floods in Haryana. On 3rd ,Sep,1978 , there was heavy discharge in Yamuna about 700,000 cusecs which increased the water level of Yamuna and affected many areas of state of Haryana like the districts of Karnal, Ambala, Faridabad, Sonepat,Gurgaon and also affected the neighboring areas of Delhi[13].

**1988:** In August 1988 also Haryana faced heavy rainfalls which had caused damages to 615 villages in Ambala, Kurukshetra, Karnal, Sirsa, Jind, Hisar, Sonepat and Faridabad districts. on 8th August 1988, there was heavy leakage in river Ghaggar about 80,398 cusecs. There were again heavy floods in the Ambala, Kurukshetra, Karnal, Jind, Hisar, Sonepat,Sirsa and Faridabad districts in September ,1988 due to continuous rains in the state. Flood not only caused losses of human lives and of cattle but also caused extreme damages to crops and infrastructure[13].

**1993:** In 1993 many areas in the districts of Ambala, Kurukshetra, Kaithal, Fatehabad and Sirsa were highly flooded due to high water flows at Ghaggar and heavy rainfall on the Ghaggar drainage tract[13].

**1995:** In 1995, there were heavy rainfall from 26th Aug to 30th Aug and again from 2nd to 4th Sep which caused heavy floods in the state and affected the districts of Ambala , Rohtak, Bhiwani, Hisar, Jind, Kaithal, Rewari and Sonepat. The situation was further become worse due to entry of floodwater from Punjab through the Satluj Yamuna Link canal. Floodwater also affected many villages and towns of Ambala Cantt., Ambala City, Rohtak, Bhiwani, Dadri, Gohana, Panipat, Kaithal, Siwani, Pehowa, Tohana, Narwana, Hansi, and Barwala, Rewari and Ratia. All the rural as well as urban areas were under 2 to 10 ft of floodwater for many days due to improper drainage system.It caused damages to Roads, Installations of Public Health ,sanitation and electric etc.[13]

**2001:** On 16.07.01 state of Haryana again encountered heavy rainfall measuring about 207 mm of five to six hours of duration which resulted in inundations in the city and cantonment area of Ambala[12].

**2002:** On 13th & 14th ,August ,2002 ,there was heavy rain measuring 273 mm in District Ambala. Although it was beneficial for the crops, but three persons died due to inundations in the Begna Nadi.[12]

**2004:** In Aug. 2004, there was heavy rains in ambala causing damages to Ambala City and Cantt and many villages of Ambala Tehsil[12].

**2010:** 2010 has seen a major flood which caused many destructions in the form of loss of lives and infrastructure. The major cause of flood was continuous and heavy rainfall from 6th July onwards and about around twenty breakages in the rivers and seasonal streams. Due to continous and heavey rain showers, large areas of Ambala Cantt. and City were flooded and remained under water for many days.Heavy floods of 2010 had caused following losses : i. Eleven human lives, ii. Four buffalos deaths , iii. Damages to 748 no. of houses. iv. 335 roads damaged & 44 road cuts costing loss of Rs 58 crore, v. Various damages cost about R**s.6.05 crore to electricity department:** i. About eighty poles were damaged, Eight DT's(100) and HT/LT Cables were destroyed, About 511 store items ,meters and construction etc were damaged, About 3304 no.of Damages to repair and general workshops. ii. About 3500 number of people suffered from various diseases like fever,Diarrhea,vomiting,skin diseases etc. as: iii. Flood also caused damages to various schools : Edusat system of fifty two schools were damaged. Damages of amount Rs.1,07,14,972 were caused to Civil structures of Schools, All the Midday meal material was destroyed. iv. The damages of approximate amount of Rs. 67 lacs was caused due to destruction of Galis, Dharmshalas, Chaupals, Veterinary Hospital etc. in affected villages.

**2012:** The maximum rainfall received during July, August and September is 307.8 mm, 179.3 mm and 68.4 mm respectively and maximum discharge received in these rivers i.e. Tangri and Markanda is 29000 cusecs and 20536 cusecs respectively. During the rainy season ending 2012 there were cases of land erosion and changing of course of rivers towards existing embankments etc. but no serious flood damages were noticed.[14]

## Measures taken by Administration against flood

The main causes of floods are breaches and deposition of heavy silts on the bed of rivers. So administration has taken steps to i. trim down the deposition of silt from the bottom of the river Tangri. ii. 18 pumps have been installed at Gandha Nalla, Mahesh Nagar and Babyal Pump Houses and 19 mobile pumps are set to dewater rural and urban areas at the time of monsoon in 2010. iii. Ambala district had 6 semi ring bunds in villages of Naggal, Majra, Naneola, Jodhpur, Kaleran, Batrohan and 2 ring bund of villages of Barouli and Karadhan in 2009.

According to provision of 1.4 of Haryana Flood Manual the civil officer as well as Engineers of the Technical Deptt. carried out Joint Inspection of Flood Protection Works . Following is the list of the flood protection works.

## Challenges in Recovery

The most difficult part of the Disaster Management is the Disaster recovery which involves rehabilitation and reconstruction as its integral parts because this is the stage just after destruction. It takes place immediately after rescue and relief operations. All the efforts of Disaster recovery have to be realized by the affected community itself because most of the helping hands involved on humanitarian basis are left the site. The task becomes more complicated because rehabilitation involves various crucial types like social, physical, and psychological. Out of these, the most crucial is psychological recovery as it presents lot of constraints on the part of victims and stakeholders.

Following are the challenges in recovery stage:

**Insurance of Crops and households:** In the Year 2012-13 , Government of Haryana has started WBCIS in 18 blocks of 17 districts of the state.This insurance scheme is applicable to crops like wheat, paddy, bajra and cotton(Kharif and Rabi).For the paddy crops ,the scheme included blocks of Ambala-II, Gohana, Bilaspur, Palwal, Babain, Beri, Barwala, Tohana and Jakhal, Sirsa, Madlouda, Narnaund and Ballabgarh and for cotton crops, scheme included the Bawanikhera block of district Bhiwani. According to the scheme ,The farmers have to pay the premium of insurance in part and rest amount will be paid equally by state and central government . The premiums for various crops have to be paid in following manner:

**Table-1**
**Schemes of different departments**

| SNo | Works | Place | Amount of works (Amount in lacs) |
|---|---|---|---|
| i) | Six stone stud were constructed . | village Nagla Rajpurtana | 16.80 |
| ii) | Three stone stud were constructed | village Ambli | 8.40 |
| iii) | Stone steining of 800 feet constructed | village Kala-Amb | 38.90 |
| iv) | RMB Markanda U/S Ambala-Saharanpur Railway line from RD 21969-15600 | village Hamidpur, Allahapur and Rampur | 20.10 |
| v) | Two stone stud | village Batoura on Begna Nadi | 7.30 |
| vi) | Four stone stud | village Kherki Manglore on Begna Nadi. | 10.80 |
| vii) | Stone steining of 280 feet. | villageBaragarh on Begna Nadi | 5.20 |
| viii) | Two stone studs were constructed | village Fatehpur onBegna Nadi | 6.00 |
| ix) | Stone steining of 216 feet was constructed | village Chhoti Rasour on Roon Nadi | 5.35 |
| x) | Stone steining of 100 feet and One stone stud | Village Chhoti and Bari Ujjal on Laha Nadi | 3.95 |
| xi) | Two stone stud with Shank | village Hamidpur on Sakroon Nadi | 6.90 |
| xii) | Stone steining of 1052 feet | old Gazipur bund villageGanni Khera on river Tangri. | 26.60 |
| xiii) | Two Ramps at RD 6530 and 9900 | village Ganni Khera on river Tangri | 8.60 |
| xiv) | LMBTangri Bund D/S GT Road RD 12815 –14700 and One Ramp at RD12815 | village Dhaneoura on river Tangri | 5.20 |
| xv) | Seven Ramps on RMB Tangri D/S GT Road at RD 13500, 14850,17650, 20050, 25000, 26750 and 29275 were strengthened. | Majri Mardon Sahib and Bichpari villages on river Tangri | 5.95 |
| xvi) | Remodelling of drain of Singha wala | RD 732 – 5000 (Katcha Section) and RD5000-6650 (Pucca Section) | 24.60 |
| xvii) | Bridge at RD 5000 remodelled | Singhawala drain | 20.00 |
| xvii) | Bridge atRD 5470 remodelled | Singhawala drain. | 5.00 |
| xix) | Bridge atRD 5850 remodelled | Singhawala drain. | 5,00 |
| xx) | Bridge atRD 6005 remodelled | Singhawala drain. | 5.00 |
| xxi) | One Inlet in SYLCanal at RD 4.702 Km | villages Khaira, Nadiali,Naggal and Hassanpur. | 33.25 |
| xxii) | One Inlet in SYLCanal at RD 8.050 Km | villages Khaira, Nadiali,Naggal and Hassanpur. | 33.25 |
| xxiii) | Digging SYL Parallel drain from RD0-31711 according to design section. | ---- | 10.00 |
| xxiv) | One Regulator Inlet was constructed | RMB Markanda RD 4300 | 5.60 |

Source: Disaster Management Plan, Ambala

**Table-2**
**Source Hindustan Times, Madhvi Sally, ET Bureau Aug 21, 2012, 05.24PM IST**

| Sno | Crop | Farmer's share of Premium (in Rs) | Equal share of Premium paid by State & Central govt.(in Rs) |
|---|---|---|---|
| 1. | Paddy | Rs 300 per acre | Rs 450 per acre |
| 2. | Bajra | Rs 297.50 per acre | Rs 276 per acre |
| 3. | Cotton | Rs 600 per acre | Rs 300 per acre |

Agriculture Insurance Company of India Limited and other private companies approved by Government of India have implemented the scheme. About 19,157 affected farmers are benefitted with the scheme by receiving the claims of amount of Rs 13.18 crore from Rabi 2009-10 to Kharif 2011-12[15].

On 31st July Haryana agriculture department notified under the scheme of MNAIS, paddy will be covered during Kharif 2012-13 for the purpose of the crop insurance. Before this initiative, there was not any insurance scheme for crops/live stock in Haryana. The present MNAIS scheme focuses on drought and is restricted to only four districts related to paddy. It ignores District Ambala for paddy insurance against flood where significant area of paddy is spoiled in monsoon season almost every year. Apart from this ,in other districts, the scheme is compulsory for all farmers who have taken loans for crops from banks for notified crop in their notified areas. However, the scheme is not mandatory for other farmers who have not taken loans for growing the crop. It shows the intention of the government in favour of flood affected farmers. Under WBCIS scheme, all the blocks of the district which are vulnerable to flood have not been included. The lack of insurance cover to all the farmers against flood for all the crops in general and paddy crop in particular makes the farmer more vulnerable.

**Lack of Proper surveys by various government agencies:** The very first condition for any effective disaster rehabilitation is assessment of destruction. It gives an idea of the extent and intensity of damage to plan out, implement and evaluate disaster recovery programmes. Sample Surveys, Epidemiological Surveillance, and Nutrition Centered Health Assessment are three pertinent ways to ascertain the extent of damage at the disaster recovery level. The sample surveys, which can be used for assessment of damage to facilitate disaster recovery. The main components of sample surveys are Nutritional assessment, House Damage Survey, Health Surveys and Need Surveys. The main objective of processes of Epidemiological Surveillance (ES) is to detect changes in disease occurrence. The three principles of ES are organized reporting of confirmed cases of most important diseases, Systematic reporting of symptoms that could indicate major diseases of concern and speedy field investigation of any reports or rumors of an odd increase in the occurrence of disease.

Nutrition Centered Health Assessment can detect problems related to food shortages, logistics, food distribution, diet (in terms of nutrition), illnesses, water shortages, water contamination, psychological and personal hygiene. The government agencies involved in recovery and rehabilitation of flood affected people are not having professional approach and they respond "on the spot basis" or "as and when required". The important aspects of surveys which involves Nutritional assessment, Need Surveys, organized reporting of confirmed cases of predominant diseases, speedy field investigation of any reports or rumors of an odd increase in the occurance of disease, water contamination, personal hygiene and psychological are ignored[16].

**Insufficient and delayed compensation:** After the flood, the process of surveying various losses by different Government agencies is very slow and is not methodical. Moreover the compensation amount is very nominal. The most affected community is farming and agriculture labour which experiences direct loss.

The compensation given by the Government for 100%, up to 75% and upto 50% loss of crop due to flood varies between Rs 5500 to Rs. 2500/- per Acre only. For fully damaged house Rs. 15,000/-, partially damaged house Rs. 5,000/- are given as compensation. In case of death of buffalo Rs. 10,000, for cow Rs.5000/-, for American cow Rs. 10,000/- are given in the form of compensation[17].

This amount in the form of compensation in all type of losses is insufficient. The practice of providing token money as compensation is negligible and it further enhances the vulnerability of affected people.

**Infrastructural Challenges:** Ambala district is a politically neglected district with very poor road infrastructure. After every flood the condition of internal roads and highways becomes grim which affects directly or indirectly all the business, industrial, social, educational and employees activities up to great extent.

Moreover the irony of Ambala Cantonment which is older more than a century is that it is still using the sewerage system designed at the time of inception. Ambala Cantt is divided into 35 wards and comprised of sixty regular colonies and others being illegal colonies. The owners of the buildings in residential and commercial areas have encroached the extra space available for covered sewerage. Overflowing sewerage and stinking sewareges are often seen in Ambala and in the rainy season the condition of ambala becomes pathetic due to poor condition of drainage system in the area. The poor sewage and drain system in ambala become the biggest challenge in rainy season which needs to be handled systematically at the top most priority.

**Lack of Involvement of Non Government Agencies:** Since flood is a regular periodic event of monsoon season in Ambala district the involvement of Non Government Organizations is very limited. The affected people are left to face the bearings just after the water of flood recedes.

The affected people are not made aware by NGOs to adopt short term measures like new cropping pattern to avoid crop loss, Utilization of the addition of clay and silt as fertilizers after leveling the ground, implementation of government policy for preventing human settlement in low-lying areas and encroachment on drains and relocating of settlements to safer places and long term measures like building of safe houses and shelters in safe areas, construction of houses on an elevated area, strict implementation of safety-codes in the construction of private and public houses and buildings, construction of hazard-resistant roads, bridges, canals, water reservoirs, drinking water facilities, power transmission lines, telephone, cables, rail tracks, etc., improvement in meteorological forecast and flood monitoring system, early warning system, Construction of dams and embankments for protection against floods, Organization of people to participate in preventive and protective measures, as well as to prepare for counter-disaster activities.[18] In turn, NGO peoples blame the government not to provide the funds to implement the said short and long term measures for recovery.

**Inappropriate Conflict Management:** One of the most common constraints in recovery process is the existence of conflict, which can be between the organizations/ agencies/ representatives involved in disaster management or between the community and these organizations. Even within the community, different groups such as community based organizations, caste groups, community leaders, regional groups may clash amongst each other.

But overcoming conflict is an art. The first step towards which is to recognize conflict as constructive and inevitable. Conflict must lead to coordination, change and creation of new alternatives.

**Lack of Community coordination and awareness programs:** The most important role in recovery phase can be played by the organized community or elected people (Representatives of Urban Local Bodies or Panchayati Raj Institutions).PRI and ULB are the most appropriate institutions from village to district level in view of their proximity to the people, universal coverage and mandate of enlisting people's participation on an institutionalized basis. The PRIs and ULB can participate in tasks that aim to provide a base for integration of various concerns of the community with that of the NGOs and CBOs, which are engaged in various recovery activities at the grassroots level.[19]

Unfortunately, most of the representatives of PRIs are not educated and do not have any knowledge and awareness related to recovery stage of flood. It is the first hand experience of one of the author who used to be a resource person in a NDMA pilot project "Capacity Building in Disaster Management for Government Officials and Representatives of Panchayati Raj Institutions and Urban Local Bodies at District level". District administration tried to train about 300 Govt. officials and representatives of PRIs through this project but it was experienced that very few representatives participated. Administration tried their best but could not manage to bring these people to training program.

**Attitude and Psychological Issues:** Although the government and private agencies and affected communities take immediate action to provide rescue and rehabilitation to victims but survivors feel that recovery phase is proceeding very slowly causing stress and trauma to survivors. For e.g. living in temporary accommodations and dealing with insurance agent may cause stress in survivors and they start behaving rudely and impatiently with those who are trying to assist them. It is the most crucial situation for the persons involved in recovery phase. Even if the disaster recovery plan is foolproof and takes care of each and every nitty gritty of providing relief and comfort, there are certain factors, which need to be kept in view in order to humanize the recovery efforts. The recovery team must be clear about all Psychological and Physiological post-disaster symptoms like bad temper or resentment, Decreased appetite, Self-blame, criticizing others, Headaches, Isolation, withdrawal, Pain in chest or stomach, Fear of recurrence, Diarrhea, Feeling stunned, queasiness, Nightmares, Loss of concentration, Memory Loss, Insomnia, wretchedness, hopelessness, low energy, rejection, Hyperactivity, Increase in alcohol or drug consumption etc.

**Socio-economic issues of Farmers:** Prolonged floods affects the socio-economic conditions of farmers in many ways. Heavy and continous rainfall and stagnated water in agricultural land leads to salinization of lands in some areas and results in non-cultivable land which affects drastically the economic condition of farmers. Prolonged flooding also spreads the pest diseases and weeds. The immediate steps to outbreak the pest diseases is the main challenge before the recovery team[20].

## Conclusion

The study concludes that the considering the geological location and its slope the periodicity of the flood cannot be minimized. But the measures to mitigate its impact can be useful. The participation of all the stakeholders' i.e community, district administration, health department, industry, educational institutes, elected representatives, Non Government Organizations etc. is essential. The awareness programs for the community can play significant role.

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