



Report on Pilot Study on Community Approach to Flood Management : Phase – III

1 Introduction

1.1 Background

Flood is a major natural disaster facing India for a long time specially in the Gangetic-Brahmaputra-Meghna plains. Keeping this in view, the World Meteorological Organisation (WMO) started a project entitled “Community Approach to Flood Management in India”. This was part of the coordinated project covering India, Bangladesh and Nepal having a common and collaborative research design. The broad objective of the project was to find out ways and means for strengthening the self-help capacities of communities for improved flood management practices under the IWRM framework.

The project comprised of three phases. Phase-I of the study was completed in early 2003. It aimed at preparing a country paper to assess flood management activities and practices with a focus on community involvement in the process. The outcome of Phase-I study was presented in the Third World Water Forum held in March 2003 in Kyoto, Japan. Phase-II of the project aimed at enlarging the scope of the Phase-I programme still further. It made indepth studies, conducted awareness generation and capacity building activities in selected study areas and prepared a Manual on Community Approach to Flood Management. The Manual was the most important output of Phase-II of the Project. Thereafter, a need was felt to test the Manual in actual flood conditions. This led to starting of Phase-III of the project. WMO, as before, came forward to sponsor and fund this activity also.

Phase-III of the Project was taken up in Samastipur, one of the worst flood hit districts of Bihar. The district has 20 Community Development Blocks of which a majority are reported to be hit by moderate to severe flood almost every year. The earlier phases of the study were conducted in three areas of the country which included Sajanpur and Purnahi panchayats of Warish Nagar block in this district (Samastipur). Subsequently it was learnt that the probability of flooding was more certain in the nearby Kalyanpur block of the same district. Hence the area selected for testing of the Manual was shifted to Kalyanpur block which is also one of the most flood hit blocks in the district. The testing was done during the monsoon season of June to October, 2004. Dr. C.P. Yadav, a retired Associate Professor of the nearby Tirhut College of Agriculture, Dholi was associated in the project as Extension Officer to guide and coordinate the activities at local level with effect from mid June 2004. His services continued till the middle of October, 2004.

1.2 The Selected Area

From this block (Kalyanpur), a frequently flooded Panchayat of Tira Jatmalpur was selected for testing of the Manual. This is one of the three severely affected gram panchayats where flood causes severe miseries for thousands of people in terms of losses of house properties, cattlesheds, standing kharif crops and the like, covering all the revenue villages of the panchayat. The panchayat is located on the bank of the river “Baghmati”. On the other bank of the river is the district of Darbhanga protected by embankment while the river track facing a major chunk of habitations in the district of Samastipur is left un-manned to flood fury.

1.3 Functioning of Panchayat Office

The Panchayat Office is about half a kilometer in the interior of the covered villages. Its building is very old and is in dilapidated condition, currently unfit for holding office there. More so, it is in a low lying area where flood makes way every year. Instead, for all practical purposes, the panchayat office is operated from a place known as “Mahadev Sthan”, a place of worship located on the major district road



connecting Samastipur to Darbhanga. It is about half a kilometer away from the main settlement of the panchayat.

1.4 Perceptions of the Villagers

As usual, the expectations of the villagers from government was found to be quite high. As per their perception, government should do every thing during flood to protect their lives and properties. More particularly, they were in favour of complete eradication of floods. Alternately, they felt that there should not be any embankment on the other side the river so that water could flow un-interrupted to other areas thereby spreading and equalizing damages every where. Although they are fully aware of benefits of community participation, they still feel that it is the duty of the government to protect their lives and properties because government is collecting taxes and duties from them. The villagers showed resentment against scanty supply of relief materials in the past apart from the delay in receiving them. Per household norm adopted by the government for distribution of relief items was also not acceptable to a majority of villagers and specially those having larger family sizes. In addition, there was a good deal of resentment among them about the quality of supply they receive from government in the name of flood relief.

1.5 Social Composition

The population of the panchayat (Tira Jatmalpur) is composed of several interest groups. Hence, expectations and aspirations among them vary widely. Community spirit, however, is found nowhere in the area. The panchayat has 13 wards each representing about 500 population headed by a Gram Sadasya (ward member). Its population constitutes most social segments excluding Scheduled Tribes but is dominated by Other Backward Castes. Nearly 90 percent of the households are land owners. The scheduled castes population is about 15 percent of the total population in the panchayat. Most landless households are from scheduled castes. The panchayat has 2165 households of whom over 75 percent belong to below the poverty line category.

2 Experience of Flood

Flood during the 2004 year in Samastipur district and other parts of Bihar was delayed by over a month. It came in mid July (13th-17th) instead of the usual mid June. It was a very severe flood, more severe than even the devastating flood of 1987. A majority of panchayats under Kalyanpur block including Tira Jatmalpur block were flooded. This had several effects as briefly described below.

2.1 Flooding of Block Headquarter

The Kalyanpur block premises themselves were under water for nearly two weeks during which the block administration was functioning from the district headquarter. The block headquarter started re-functioning only from the first week of August. Hence, the panchayat functionaries had to make visits to the district headquarter often even for matters under the jurisdiction of block. Since communication links on the major road connecting the district were disrupted at several points, people had to face a lot of difficulties in meeting the block/district officials.

2.2 Disruption in the Communication Links

The flood caused immense damages to public properties such as telephone lines, railway track, electricity poles and road network systems resulting in breaches at several places on the village approach roads and culverts/bridges. The major district road between Samastipur and Darbhanga was submerged at several places making it difficult for people and materials to move for several days. The only means of communication available for transportation was country made boats, which used to ply for about 2 weeks in certain areas.

2.3 Damage to House Properties and Cattlesheds



Reports received from the panchayat (Tira Jatmalpur), indicated huge loss of dwelling units in low lying areas of all the four revenue villages. These were owned by economically weaker sections, a majority of whom belonged to scheduled castes and other backward castes. Most of these units were mud-brick kutcha-houses. Their number was about 500 in the entire panchayat of which nearly 200 were completely damaged and 300 partially. Besides, another 100 thatches of kutcha houses were reported to have been swept away by flood. Floating thatches of about 80 poor families were retrieved and returned to the owners. Apart from houses, a sizeable number of cattlesheds also collapsed in the panchayat due to the occurrence of flood.

2.4 Deterioration in Cattle Health

In the absence of any designated cattle camps in the area, cattle were left stable bound on the road near the river Bagmati without proper feed for a number of days. But there was acute shortage of cattle feed whether green or dry. People used to move to distant areas for procuring fodder. For want of proper diet (feed), deterioration in the cattle health was reported from many corners. This had resulted in low milk output among animals. Scarcity of dry cattle feed was reported mainly due to the damage of Bhusa in the stacks consisting of wheat straws which got submerged under flood water for several days. Due to breaches on major roads, transportation of Bhusa from other areas also posed a serious problem.

2.5 Crop Damages

Major crops being damaged due to flood were kharif maize and kharif vegetables. Some farmers by experience had avoided growing khariff crops which had greater chances of being submerged under water, leading to loss of labour and capital inputs put in.

2.6 Other Losses

The stored food grains in the houses suffered much loss apart from household goods such as furniture, linoleum and other articles of day to day use. As per the statement of the villagers, the water level in the river rose so fast that they could not manage to remove these items in a bid to save their lives and cattle.

2.7 Effect on Sanitary Condition

There was utter lack of sanitation in and around the panchayat partly due to lack of proper education and awareness among the villagers and also due to the havoc created by flood. Because of lack of dry places to live in and to make facilities for latrine, people were forced to take to the street. As a result, human excreta was found in abundance on the uplands which had the potential to cause spread of epidemics, which, however, did not take place. The disinfectants were also not available in the local shops because supply from the district got disrupted due to damage of roads. In addition, many households were forced to take flood water for drinking purposes.

2.8 Report of Epidemics

Although mosquitoes multiplied in number in the area due to stagnation of flood water in ditches, there were no reports of malaria cases in the panchayat. Rotting of stored grains in the gunny bags and other containers, did not have any adverse effect on health conditions of people in the panchayat. Spread of cattle diseases/illness was also not reported in the panchayat.

2.9 Migration

There were reports of large scale migration of youth and able bodied persons (both male and female) to cities and nearby towns in search of means of livelihood. Since re-generation of economic activities in the flooded area was likely to take considerable time, people were forced to migrate to earn a living.

3 Formation and Functioning of FMC



3.1 Interaction with the Villagers

The Extension Officer of the project along with the Joint Team Leader of the Project from the headquarter (Delhi), who was there in the area between 22nd June to 4th July 2004, made a series of visits to the selected block (Kalyanpur) and the panchayat (Tira Jatmalpur) starting from 23rd June 2004. The team was assisted by a representative from the block administration who in turn was a social worker (Jan Sevak) posted in the panchayat itself and also a local school teacher. An introductory meeting of the villagers was convened at a primary school premises and subsequent meetings were also held there as the place was most convenient for the villagers. In the first meeting, turnout was rather thin but the attendance improved subsequently following considerable persuasion by the team. People were self-centred, not prepared to do anything at the community level with respect to flood management, but were motivated gradually towards community approach by the IRMED team.

IRMED's Team continued to interact with villagers and remained active throughout the flood season, providing advice and guidance to FMC on how to deal with emerging problems as per suggestions given in the Manual and making strategic interventions through limited funding as in the case of hiring of boats described in Para 5.2 later on.

3.2 Constitution of Flood Management Committee (FMC)

After a series of deliberations about the usefulness of a flood management committee at the panchayat level, a consensus was evolved following which names of 8 members from among the existing 13 ward members excluding the Mukhia (Chairperson), were included in the committee. These names comprised of a few farmers, females, schedule castes and backward castes. In addition, in accordance with the provisions of the Manual, names of a set of another 8 persons outside the panchayat's fold, known for their contributions in social activities or drawn from other segments of the society, were also included in the committee. Mukhia (Chairperson) of the panchayat was unanimously selected as the president of the FMC. In all, 17 persons were inducted in the committee as under:

Sl. No.	Name	Village	Position
1	Ranjan Chaudhury	Tira	President
2	Baidyanath Thakur	Tira	Secretary
3	Rohit Ram	Tira	Treasurer
4	Shambhu Chaudhury	Jatmalpur	Executive Member
5	Ramashis Paswan	Tira	Executive Member
6	Sadan Kumar Thakur	Tira	Executive Member
7	Jimmad Rai	Tira	Executive Member
8	Kishore Rai	Tira	Executive Member
9	Smt. Budhan Devi	Malkauli	Executive Member
10	Smt. Kalyani Devi	Rajpa	Executive Member
11	Bilat Rai	Malkauli	Executive Member
12	Sanjit Kumar Thakur	Rajpa	Executive Member
13	Shiv Sankar Chaudhury	Jatmalpur	Executive Member
14	Sanjay Paswan	Tira	Executive Member
15	Chhedi Paswan	Tira	Executive Member
16	Jairam Chaudhury	Jatmalpur	Executive Member
17	Birju Rai	Malkauli	Executive Member

3.3 FMC Meetings

After its constitution on 29-6-2004, the FMC met for the first time next day on 30-6-2004 to form specific groups of willing volunteers among village youth who could be given training for rendering help during and post flood period. Accordingly, four separate groups for training on (i) Rescue and Relief, (ii) Health



Care and Sanitation, (iii) Cattle Care and (iv) Post Flood Agricultural Operations, were formed. The volunteers of each group were trained on 10th and 11th of July, 2004 in their respective subjects.

FMC further met on 18-7-2004 to take stock of relief received from different sources for smooth and equitable distribution among the needy. It met again on 25-7-2004 to make a realistic assessment of the post flood relief management in terms of efficacy of the system adopted for distribution.

The FMC members held another meeting on 12-08-2004 to take stock of crop damages. In the meeting, it was decided to impress upon the government for distribution of seeds free of costs to the affected households which can be used for post flood agricultural re-generation activities. A further meeting of the FMC was held on 26-08-2004 to make assessment of damages caused by flood particularly to houses and cattlesheds in the low lying areas of the panchayat in order to urge the government for early compensation.

On the eve of the release of IRMED's cash help for buying polythene sheets and repair of hand pumps, an urgent meeting of FMC was called on 27-08-2004 where in it was decided to identify 100 needy families who became roofless because of sweeping away of their thatches due to flood.

3.4 FMC – Government Interface

On the fourth day of flooding i.e. on 16.7.2004, fifteen members of FMC met the District Magistrate (DM), Chief Executive Officer (CEO) of district panchayat, Sub-Divisional Officer (SDO) and the Block Development Officer (BDO) to impress upon them the need for immediate arrangement of relief items for the panchayat. On 18.4.2004, the group again met these officials and insisted upon early release of the items of daily necessity so that people's sufferings could be minimized. The District Administration in turn assured the representatives of FMC for quick release of the relief materials subject to the condition that the panchayat would make its own transport arrangement for lifting the items. Following the assurance given by the administration, the FMC of Tira Jatmalpur made use of the impressed money given by IRMED, Delhi for transportation of relief items in three installments on 18-7-2004, 20-7-2004 and 10-8-2004. As reported earlier, this was the only panchayat out of 31 panchayats in the block which could lift maximum quantities of relief items and that too in record time compared to other panchayats in the block. On 12-8-2004, the secretary of the FMC met the CEO, SDO and Director of Accounts, in charge of relief, for seeking some clarifications regarding cash help to each family amounting to Rs. 200 instead of Rs. 100 announced earlier. The President of the FMC was in constant touch with the district administration for early payment of the compensation amount against crop losses as also losses caused to house properties, besides repair of village roads, bridges and public utilities.

4 Empowerment through Capacity Building

In accordance with the guidelines given in the Manual, IRMED team laid considerable stress on arranging training for groups of villagers to enhance their awareness of the important role that the community could play in flood management through well planned organized action. Another objective of the training was to enhance their capabilities for self management of flood related problems. These amounted to raising their preparedness and coping strategy to deal with floods using the methods described in the Manual. To aid, advise and strengthen the hands of FMC in matters relating to health care & sanitation, cattle care, meeting agricultural needs and helping in the rescue and relief management, groups of volunteers within the panchayat comprising of both male and female were provided training as per provisions of the Manual. In addition, members of FMC were given training on record keeping and office management. The volunteers were given a one day extensive training through practical demonstration in the areas of their interests to enhance their capacity for meeting eventualities during and post flood period. The designated trainings were imparted by the experts in the fields of agriculture, health/veterinary care, rescue and relief etc. The details are given below.



4.1 Training on Agriculture, Plantation, Aquaculture/Fish Culture

In the matter relating to the re-generation of post flood agricultural activities, nearly a dozen and a half volunteers were trained. These consisted of land owners, tenant cultivators and a few agricultural wage earners. Five of those trained were not having basic education but were well conversant with agricultural practices. The training was imparted by an agricultural scientist of the nearby Rajendra Agricultural University, Pusa, Bihar.

During the training, the villagers were apprised of the significance of plantation of locally available species along the road sides, railway tracks, embankments and other vulnerable places so as to protect soil from large scale erosion and also to provide bio-drainage in the low lying water logged areas which can be converted to crop land. The villagers took serious note of this suggestion.

To supplement family income during floods, the villagers were advised to go for desilting of village ponds/tanks so that these can be used for fishing activities. Besides, the soil excavated can be used for raising the plinth of the house sites. In low lying flood prone areas, the villagers were instructed to promote aquacultural crops like makhana, singhara etc. Similarly, they were asked to take up poultry/duck rearing activities which can also generate income for them.

The names of those participated in the training on agricultural practices etc. are given below.

Sl. No.	Name
1	Gyani Rai
2	Mahendra Rai
3	Laxman Rai
4	Shyam Thakur
5	Rahit Ram
6	Ram Chandra Paswan
7	Guru Lal Das
8	Jogi Ram
9	Bhupan Das
10	Rambadh Rai
11	Vijay Mishra
12	Ranjan Chaudhury
13	Bilat Rai
14	Shiv Sankar Chaudhury
15	Smt. Kalyani Devi
16	Smt. Budhan Devi
17	Saimik Chaudhury
18	Ramashis Paswan

4.2 Training on Health and Sanitation

During flood, many people particularly children and sick fall prey to various kinds of diseases like cholera, typhoid etc. because of consuming contaminated water as also taking of pre-cooked stale food and sometimes also due to underfeeding. In order to provide quick relief to these victims, a number of persons in the panchayat, mainly housewives, were given intensive training on health care and sanitation, as well as on water purification, to overcome the ill-effects on health due to flood. The services of a local doctor were made use of for providing training for the purpose. Following persons were given training on health and sanitation related matters.

Sl. No.	Name
1	Smt. Kiran Devi (ANM)
2	Santosh Paswan



3	Ram Sakal Sahani
4	Dr. Sudhir Thakur
5	Dr. ashok Thakur
6	Dr. Shivnandan Sahani
7	Rajeswar Rai
8	Smt. Suryakala Devi
9	Smt. Nagia Devi
10	Smt. Tetari Devi
11	Smt. Neela Devi
12	Navin Chaudhury

The training to the volunteers on maintaining health and sanitation during the period of flood particularly on purification of water using a variety of chemicals and water purifier packets, drew much attention from housewives. They were of the view that if FMC makes some arrangement with the concerned government departments for advance supply of these disinfectants, the drinking water problems during flood days can be sorted out to a great extent in the village itself. The villagers were informed that hand-pump water during flood or otherwise is not quite safe if accumulated water from the surrounding areas enters the bore hole. That is why, it is necessary that the platform where a hand-pump is to be set up, should be raised and pot holes around the bore patched.

In view of the in sanitary condition as described in Para 2.7, FMC advised the concerned households to boil the water before drinking to avoid spread of illness. IRMED provided funds to Chairman FMC for buying water purifier packets, bleaching powder, lime etc. for purifying the water for domestic use. Hand-pump water was also not found safe as it gave foul smell. People were, therefore, advised not to use such water unless purified. In most areas, mosquito breeding was taking place due to accumulation of stagnant water. People were advised by the Project Team and FMC to use mosquito net and repellents as precautionary measures. FMC members were in lookout of DDT and other chemicals to destroy all mosquito breeding places.

4.3 Training on Cattle Care

The training on cattle care was imparted to a number of village youths consisting of cattle owners from various sections of the society. The training basically aimed at providing additional inputs to the trainees who were likely to handle all cattle-illness related issues themselves during and post flood situations. The cattle owners were also briefed about various precautions/measures to be taken in advance so as to avoid complications afterwards. The designated training was given by a local veterinary doctor. Following were the persons trained on cattle management during flood.

Sl. No.	Name
1	Birbal Rai
2	Papu Mishra
3	Sant Kumar Thakur
4	Navin Kumar Thakur
5	Rajiv Ranjan Thakur
6	Krishnakant Chaudhury
7	Kishori Paswan
8	Guru Charan Rai
9	Nawal Kishore Ram
10	Ranjan Thakur
11	Birendra Thakur
12	Shambhu Chaudhury
13	Jirumal Rai
14	Kishore Rai



15	Baidyanath Thakur
16	Birju Rai
17	Sanjit Kumar Thakur

4.4 Training on Rescue, Temporary Flood Shelter and Relief Operations etc.

Orientation training was also provided for rescue operation in the event of high flood and relief management for those in the flood shelter as well as those not relocated. The villagers were trained on as to how best they could help in evacuation by way of rowing a boat, identifying escape routes, assigning priority in evacuation to the old, the sick, women and children and in distribution of relief by making proper assessment of needs in terms of maintaining equity.

The training also included how best they can help in the construction of temporary flood shelters with the help of cheap raw materials such as bamboo/wooden poles, tarpolin etc. which can be preserved and used in the next season thereby eliminating the chances of buying these items again. The villagers appreciated this idea and agreed to follow the instruction provided to them.

The villagers were also appraised of the benefit of elevating plinth of the newly constructed houses to avoid flood water entering these units. To raise the platform of the house sites, they were told to excavate old ponds/tanks and at the same time to take the benefit of fishing activities which will also generate income for them. This idea was highly appreciated by them.

Those given training in this task included the following.

Sl. No.	Name
1	Kapilaswar Sharma
2	Smt. Kiran Devi
3	Tapeswar Chaudhury
4	Sanjay Thakur
5	Chandan Mishra
6	Komal Paswan
7	Keshar Thakur
8	Brajanandan Ram
9	Ramsagar Sahani
10	Birendra Sahani
11	Prem Lal Ram
12	Chandreswar Mahato

4.5 Recording of Events

During training on capacity building, FMC members were instructed to maintain proper record of past flood events in terms of times of their occurrence, damage to house properties, cattle sheds, standing crops, public utilities such as road, telephone lines, railway tracks etc. at least from now onwards, if not maintained earlier, in order to take advance measures to reduce negative impact of floods. The committee was also urged to maintain a register of minutes and dates of FMC meetings. It was also advised to keep a record of receipts and disbursement of relief and other materials it got from different sources so as to make use this information in future.

FMC was further asked to open a separate bank account to maintain a proper record of receipt of funds and withdrawal of money for expenditure made on flood related activities with a provision for annual audit of the accounts.



5 Operational Aspects : IRMED and FMC in Action

5.1 Immediate Help

When flood came in the villages, no outside agency or government officials were available for immediate help for several days. The Institute for Resource Management and Economic Development (IRMED), Delhi, was the only organization, the representatives of which came immediately after the flood to the area. They were present from the 4th day of flooding in the panchayat and they continued to make further visits. They also supplied polythene sheets for use at the temporary shelter immediately after the flood came. They made cash advances as imprest money for hiring of boats for evacuation and making provision for buying a few essential items of daily use. Local donors came a little later with a package of foodgrains which were cooked at the community level and served for 7-8 days at the temporary flood shelter followed by others by way of providing medicines, clothes etc.

5.2 Rescue and Shelter

Since panchayat was not having any boat of its own, about 8 to 10 private boats were hired on rent by FMC out of funds provided by IRMED. These boats were in use for 2 to 3 days to evacuate about 300 needy and distressed people to Mahadev Sthan, a safer place in the panchayat, away by half a kilometer from the main settlement. These people stayed there for the entire duration of flood. The villagers showed much courage in undertaking evacuation work, forgetting their ideological, social, personal and other differences, if any, in a bid to avert losses of human lives, household goods and other belongings.

Those taking shelter in the relief camp had limited stock of eatables like churua, sattoo, gram powder etc. which was enough for 2 to 3 days only. Relief materials, however, started pouring in from the 3rd day of flooding in the panchayat. Most of these items were in the form of grains which were cooked at the relief camp and distributed as Khichdi, Puri, Subji etc. among the flood victims. A free community feeding (lunger) for flood victims was arranged by donors of the nearby areas for 7 to 8 days. The local medical centre started functioning on full time basis from 25th July 2004 with medicine and doctor. On 3rd & 4th of August 2004, two representatives of a local NGO came to the panchayat for providing clothes and medicines to the needy families. Members of the FMC closely monitored the distribution and wherever required, extended their helping hands for better relief management. There was a general scarcity of bread, milk, milk products, baby food, wheat flour, pulses, green vegetables, fruits, edible oils, kerosene etc. because of supply constraint due to disruption of road network.

5.3 Relief Management

People who migrated to the relief camp had carried ration/pre processed food which was, however, just enough for 2 to 3 days only. Moreover, as people hurriedly shifted to the relief camp they could not bring with them other items of daily necessities such as fuel, cooking vessels, edible oils, pulses and spices etc. even though they instructed during training to do so. This behaviour highlighted the need for repeating the instructions. Hence, there was some problem of cooking. People depended mostly on preprocessed food such as chura, mudi, sattu, bread, dalia etc. Thereafter, food supply was rushed from different sources and continued for 7-8 days. There was a community kitchen arranged at the relief camp by local NGOs and trader associations of the areas from the 4th day of flooding. The Government relief was made available towards the end of flooding on 18.07.2004 in the form of 25 kgs of wheat, 500 gms of chuda (flattened rice), 500 gms of Sattu (gram powder), 500 gms of salt and a sum of Rs. 200 in cash per family. The Panchayat also collected huge quantities of air dropped materials of 300 quintals of chuda and 2.5 quintals of gur (molasses).

5.4 Managing Cattle Feed

In view of the difficulties faced by cattle as reported in Para 2.4, farmers were advised by the Project Team and FMC to use Bhusa (local cattle feed) only after making the stock dry to avoid outbreak of epidemics among cattle. FMC also advised cultivators to grow maize which can be used as fodder. To face



eventualities on account of outbreak of epidemics among cattle, the local medicine shop owners were requested by FMC to maintain stock of veterinary medicines with them.

5.5 Restoration of Normalcy

With the receding of the flood water in the area, members of the FMC along with villagers tried to restore normalcy by undertaking repair of panchayat roads by placing logs, stones and constructing bamboo bridges across drains at several places. As late as over a month, the highway connecting Darbhanga to Samastipur was also made approachable by efforts of the government. But the damage to the bridge at Raksi on the above highway was still awaiting repair till the writing of this report. As a result, movement of heavy vehicles was restricted on this bridge.

IRMED team also provided assistance in restoration of normalcy after the flood havoc. The team provided funds for buying of polythene sheets to cover top of houses and for repair of a few hand-pumps damaged due to flood. Polythene sheets were distributed to 100 highly affected families. The WMO's fund routed through IRMED was also used for purchase of DDT/BHC powder, first-aid medicines etc. In addition, 24 economically weaker sections households in the low lying areas of the panchayat were provided cash help of Rs. 500 each by IRMED for reconstruction of their damaged houses. And they utilized the amount for this purpose.

5.6 Resource Mobilisation

Our representative, Dr. Yadav, persuaded the FMC members as well as the trained volunteers to initiate efforts to mobilize resources (cash and kind) for flood victims through voluntary donations from well-to-do farmers as also from business communities operating in the nearby areas. The villagers, however, felt that time was not ripe to collect donations from big farmers because of their crop losses. They thought it better to take a chance during the next harvest season i.e. the coming rabi season (February to April). With respect to donations from other sources such as business houses etc. members of the FMC were willing to take up this matter only after the communication links were established and normalcy restored. Apart from small contributions from within and outside the villages, the FMC was urged by the Project Team to make efforts for donations from charitable trusts, NGOs, Voluntary organizations from within the country as also from outside as a part of long term planning. But in the short term, the community was mainly concerned with taking up issues that needed immediate community attention.

5.7 Community Contribution

Keeping in view the urgency of providing quick communication links by repairing damages to roads/bridges in the village caused due to flood, the FMC members collected cash and kind donations (bamboo, brick, cement etc) from within the village to help in the construction of a bamboo bridge across a drain at an estimated cost of Rs. 6500. This effort helped to a great extent in maintaining mobility among most of the villagers. Economically weaker section households gave their labour free of costs in lieu of cash. The community also appeared keen to remain active with regard to collection of contributions in future.

6 Lessons Learnt

6.1 Role of FMC

6.1.1 Pre-flood Preparedness

While testing the Manual during the 2004 flood in Tira Jatmalpur panchayat, we observed that some of the important instructions pertaining to pre-flood preparedness such as preservation of seeds for regeneration of agricultural activities, safe keeping of dry fodder on raised platforms, keeping aside cooking/lighting fuels, portable Chulha/cooking stoves etc. for use during emergencies as also protection of village wells and ponds against contamination due to flood, were not strictly followed by a majority of households.



They appeared to be fully aware of the positive effects of these precautionary measures but for want of adequate time they could not practise the instructions. Such instructions need to be repeated every year till these become a part of their way of life.

6.1.2 Response during Flood

The villagers response during flood was found to be quite satisfactory. Most of the guide points given in the Manual were followed. The villagers at the instance of the FMC did excellent work in evacuation as a result of which no untoward incident was reported. In respect of allocation of shelter, needy and deserving households were given due priority compared to others. With regard to relief distribution, the role of the FMC was highly appreciated by the representatives of the NGOs who came to the area for providing help to the flood victims. In the field of health care, though there was no report of outbreak of epidemics, the FMC had instructed the medicine shop owners to keep stock of essential medicines and also chemicals to destroy breeding grounds of mosquitoes. As a precaution, FMC had also suggested local medicine shop owners to maintain sufficient stock of veterinary medicines so as to face any eventualities. But there was no report of outbreak of any major illness among cattle. Their health in general, however, was reported to have deteriorated for want of proper diet (cattle feed) during and immediately after the flood period.

6.1.3 Post Flood Reconstruction/Rehabilitation

The marginal embankment on the river Baghmatai was breached at two points making nearly 40 families homeless. In addition, there were 8-9 breaches in the village approach roads which needed urgent repair. Since these repairs were expensive and beyond the capacity of the villagers, the FMC was looking forward to government for help and intervention. Earth work for repair of these breaches in the village roads was alone estimated to cost about Rs. 4.8 million. As already reported, one bamboo bridge in the village was constructed by villagers at a cost of Rs. 6500 from their own contribution.

6.2 Taking up Crop Rotation and Crop Culture

The orientation on post flood agricultural practices provided much impetus to a number of farm households to take measures for retaining soil fertility to increase crop productivity. The crop calendar developed earlier by IRMED during Phase II of this project, for flood specific areas of Bihar in consultation with the experts in the field of agriculture, was felt to be of immense use in restoration of fertility of land. Farmers realized that preparation of crop calendar for flood prone areas was a right step in the direction of increasing farm productivity. They, therefore, were looking forward to adopt the crop culture indicated in the calendar from the rabi season and continue the practice if the benefits realized by them were as per their expectations.

Dr. Yadav during his visit to the panchayat on 3rd & 4th of August, 2004 also suggested the FMC members and villagers to re-plant paddy fields after raising seedlings on high lands. But the farmers did not show much interest in this suggestion due to apprehension of further floods in their area.

6.3 Need for Selective Government Interventions

While doing their utmost on their part for alleviating flood miseries in their areas, the villagers represented by FMC also indicated their limitations on account of their inadequate financial resources as well as technical knowledge. They, therefore, expressed the need for government intervention not only for major structural measures like construction of embankments, sluice gates, drainage channels, roads etc. but also for measures like construction of flood shelters, repair of breaches in inter-village and other roads, repair of bridges/culverts, putting in place flood forecasting and warning systems, acquisition of boats for rescue operation etc. Villagers were also of the view that the government has certain obligations to be performed for wellbeing of its people specially with respect to those activities which require funds and technical knowledge beyond their means and coordination with external agencies. This feeling of the community towards need for adequate government intervention was conveyed to the district/block level officials by the FMC during its interactions. The administration appreciated the suggestions given by the villagers but



opined that it would forward their request/grievances to the government at the state level which alone is empowered to take such decisions.

7 Over all Assessment

7.1 On the whole, people in general and members of the FMC in particular became more confident in dealing with the problems associated with flood. They acquired experience of having meaningful interaction among themselves as well as with outside agencies like NGOs and government departments at the local level. Under the guidance of the Project team, they succeeded in forming FMC and made it functional through holding meetings and implementing the decisions taken in these meetings. They became better equipped to keep records of events, mobilize boats for evacuation, arrange for temporary shelters, carry out plantations, follow a more appropriate crop calendar, provide for better health and sanitation, assess damages caused by flood etc. These tasks were handled well by them during 2004 flood. They were ready to help each other in distress mitigation in case another spell of flood came in future. However, they pointed out repeatedly to lack of local resources and materials.

7.2 The testing exercise provided sufficient evidence that the Manual was a workable document. Most of its provisions as relevant to 2004 flood were successfully implemented. The limitations regarding inadequacy of local resources and technical knowledge which were found in practice had already been highlighted in the Manual. An additional knowledge that was gained was that certain instructions imparted in the training programmes would need to be repeated till these became a part of the normal life of the villagers. The training programmes, therefore, need to be repeated at least for the first few years.

7.3 It was also clear that an external catalytic agent as well financial assistance in terms of seed money were needed to galvanize the community to self help action. Replication of the work in other flood prone areas would need a similar approach for the next few years till the cases become large enough to work as demonstration centres. The process can be expedited if local level government agencies are asked by higher authorities to get FMC formed and empower them with knowledge, funds and power. This would require a change in government policy about which much detail has been provided in the Manual.