



## BEST PRACTICES FOR ADAPTATION AND DISASTER RISK REDUCTION

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**CASE STUDY-6: < RAISED PLINTH SANITARY LATRINE  
FOR FLOOD AFFECTED VILLAGES >**



RURAL VOLUNTEERS CENTRE  
VILLAGE+P.O=AKAJAN, VIA-SILAPATHAR  
DISTRICT-DHEMAJI (ASSAM), INDIA  
PIN-787 059



**TITLE:** < Raised plinth sanitary latrine for flood affected villages >

**ORGANISATION:** <Rural Volunteers Centre (RVC)>

**1. THEME:** Promotion of environmental health, security of the women and girls during the flood.

**2. STATE/REGION/COMMUNITY:** Assam/Upper Brahmaputra River Basin/Flood vulnerable population of Brahmaputra River Basin

### **3. BACKGROUND**

**Context: The economic, social and geographical situation:**

**Geographical context:** The geographic area of operation of RVC covers the flood plains of Dhemaji and Lakhimpur District and Majuli Sub-Division of Assam in particular and whole of the 8 North Eastern states of India in general.

The District emerges from the foot hills of Arunachal Pradesh and stretches to the Brahmaputra River with Subansiri one side and the river Siang on the other. Geographically situated between the 94° 12' 18" E and 95° 41' 32" E longitudes and 27° 05' 27" N and 27° 57' 16" N latitudes, the district covers an area of 3237 Sq. Km and is a basically plain area lying at an altitude of 104 m above the Mean Sea Level.

The District Lakhimpur lies on north bank of the mighty river Brahmaputra. It is bounded on the north by Siang and Papumpare District of the state of Arunachal Pradesh and on east by Dhemaji District. Majuli, the largest River-island belonging to Jorhat District is on the south and Gahpur sub division of Sonitpur District is on the West. The exact location of the district is 26°48' and 27°53' northern latitude and 93°42' and 94°20' east longitude (approx.).



Being situated in a strategic location where the steep slope of eastern Himalaya abruptly drops, forming a narrow valley which makes the region, as well as the whole Upper Brahmaputra River-basin, immensely vulnerable to flooding, affecting 50% - 70% population every year for the last 3 decades. The mighty Brahmaputra River, the Subansiri River and numbers of their tributaries originating from the hilly terrain of Arunachal Pradesh account for the

perennial flood problem of the region which has already caused irreparable damage to the region. In addition, extensive human interventions (deforestation, river stripping, construction of mega



dams etc.) on the Brahmaputra River Basin compounded with probable impact of climate change are gradually making the whole of the Brahmaputra Basin immensely vulnerable to multiple hazards.

### **Socio Economical context:**

- The District Dhemaji and Lakhimpur i.e. the immediate area of working of RVC is of rural character (98.5% populations are rural) and the economy is largely agro based.
- Livestock rearing is the main secondary livelihood practice of the community but the sector is yet to be commercially organized.
- Sericulture, fishing and driftwood business are practiced in smaller scale.
- Sand deposition, bank line erosion, shifting of river course and other adverse effects of chronic floods on fertile agricultural land have made even the affluent farmers land-less.
- Temporary or permanent displacement, crisis of water and sanitation facilities, health hazards are associated features of flood affecting the lives of the people every year.
- The depletion of agro based traditional livelihood practices has resulted in inter-District and inter state seasonal and permanent migration in large.

### **Rationale/ Justification for being a good practice and potential for scaling up /replication:**

The provision of a safe and environmental friendly latrine in flood affected/flood prone area was an urgent need of the affected community for the dignity, safety and security of the women in particular and for ensuring prevention of environmental contamination. The raised plinth sanitary latrine is the only answer to meet the critical need in the distress period without causing any adversity to the immediate environment, the simple and appropriate technology capturing the local resources and knowledge in this model of the latrine has large potentiality for replication.

### **Brief on the local condition prior to Project initiation:**

Flood is a perennial phenomenon in Dhemaji, Lakhimpur districts and in the adjoining Majuli sub-division of Jorhat district creating untold miseries to the live of the people inhabiting in the riverine villages. In the prevailing circumstances thus adaptation of proper technology to reduce the risk associated with this disaster should be a methodology in the development process. The water and sanitation are two crucial sectors in the immediate context to flood ravage and apart from providing the food and shelter to the affected community as relief the government in present condition does nothing to ensure the proper sanitation and environment at immediate vicinity in the relief camps or other make shift camps in high lands. This is the main cause why affected people today reluctant to go to the relief camps arranged by the government even during the most disastrous condition.

Open defecation is the common practice in the flood prone villages in this region, the main reason behind is that the night soil in the temporary latrines get exposed in the flood and dispersed all around along with the flood water, thus these temporary latrines become more threatening, so people prefer to go for the open defecation. During the unavoidable high flood people are shifted to the relief camps, but in normal flood generally people particularly located in the interior villages stay in their villages on *chang* (stilt made of bamboo) in the houses or in the high lands located nearby. In such condition no open defecation is possible as in the case of normal situation, the common practice in such situation is that open defecation from the boat in the flood water. The women and



the girls live in the most vulnerable condition as they can not row boat in high turbulent flood also can not go for open defecation in daylight. In case of pregnant and lactating mothers the condition become more serious.

#### **Project / Intervention Formulation:**

Volunteers of RVC continuously engaged in finding some effective solution of this problem, they discussed with the affected community, tried different models and during the process the raised plinth sanitary latrine emerged in realization. Thus this is a joint venture of the community and RVC to formulate a design of latrine which can be used during flood without causing any damage to environment.

#### **Goal and Objectives:**

**Goal:** Provision for secured, safe and environmental friendly latrine which can be used even during the flood for all the flood affected villages in the Upper Brahmaputra river basin.

**Objective:** To provide security, privacy and safe site for defecation site for the flood affected people within an affordable distance during the flood without causing harm to the immediate environment.

#### **4. KEY ELEMENTS**

**Target Beneficiaries:** The initial targeted beneficiaries are the flood vulnerable/affected people inhabiting the Upper Brahmaputra River Basin.

**Geographical Coverage:** Dhemaji District, Lakhimpur District and Majuli Sub-Division of Jorhat District (Presently).

#### **Key Project Activities/ Key Innovative Features - (capacity building, institution building, awareness, empowerment, etc) and methodologies/practices**

-The process started with gathering experience and feed backs from the different flood response programmes conducted by the organization-Rural Volunteers Centre. Under the emergency response the organization installed thousands of temporary and permanent latrines of various types and models as per need and resource available. The objectives of these programme basically to reduce the risk associated with the open defecation and to provide security and dignity to the people living in the distress. Thus the public health team of RVC based on their learning evolved the model of the raised latrine having its height above last highest flood level (generally 5-6 ft from the ground level), single pit with honey comb structure, water sealed trap adjacent to the squatting plate and an emergency outlet with lock for the excess nice soil. The pit is a cylindrical structure of radius 1 metre, 8 ft high from the foundation with a general elevation from the ground level of 5-6 ft, depending upon the highest flood of the area. First team implemented the structure in a flood affected village-Dambuk Kangkan under Sissiborgaon development block of Dhemaji district in 2004, seven such latrines were installed in the village, the location of these latrines so identified that 5-7 families can access to these latrines during flood. The team reviewed the impact after the subsequent flood based on which the some modification such as size and inclination of the step, size of the foot rest, size and attachment of the water sealed trap etc. The model is thus rectified, as on today RVC completed installation of this type latrine of 35 numbers of such latrines



in 8 villages in Dhemaji and Lakhimpur districts and Majuli sub-division of Jorhat district of Assam. In the process the organization has trained up three skilled masons to construct this type of latrines.



#### **CASE STUDY:**

*"We are now comfortable in our village even during the flood season" said Mr. Dandi Hazarika of Pithyal village of Matmora Gaon Panchayat under the Dhakuakhana sub-division of Lakhimpur district. Pithyal is village affected by devastating flood for last three consecutive years. "We do not want to go to relief camps, we don't feel comfortable there, we like to stay at our village, but in flood our main problem is defecation" said Mr. Hazairika when we discussed about the problems they faced during the flood. He informed that there is a high land which is about 3 km from their village and during the flood only the boat can be used to access the high land it takes about 1 hour to reach the high land by boat during flood, so the women can not go the high land during flood. Some of the families use polythene bags to defecate inside the house and then dispose the bags in the flood water. "The raised latrines will be useful in the flood, we can use bamboo or banana raft to access these latrines within the village, the environment will be also conducive" said Mr. Hazarika how he feels about the raised latrines in their village.*

#### **Key Technical Inputs:**

There is no such critical technical input required in this model, this is a simple masonry structure any village mason can do this, but the understanding of the role of honey comb, attachment of the water sealed trap with the squatting plat and the operation of the emergency outlet is important, we realized from our experience that the village people and mason also incorporate his own skill to improve the design.

#### **Impact – Social / Environmental/ Economical/ Policy Changes.**



### **Social impact:**

- As there is no any policy or practice at government level to conduct a relief camp, so there is always gap in the water and sanitation aspects in these camps, also the special need of the women are not taken into account in the planning of the relief camps. There is no separate arrangement for women and men latrine and toilet facilities in the relief camps, so people hardly prefer to go to relief camps in the flood. The raised latrines give the village people opportunity to stay in their respective villages, so they can live with dignity and security in village. Similarly the pregnant and lactating mother also now feel safe in the village even the occurrence of flood.

### **Environmental impact:**

- The raised latrine is so designed that it does not percolate to the ground water or surface water sources, the proper provision is made to prevent direct contact of vectors to the human excreta stored in the pit. The honey comb provision in the pit will also prevent the expulsion of pungent smell to the environment.

### **Economical impact:**

- There is threat of stealing of household assets in the village when all the people shifted to the relief camps, that is another important factor why affected community reluctant to move to the relief camps.
- Water contamination due to disposal and dispersion of human faeces is a big problem where open defecation continues during flood. The water born diseases thus prevalence in the flood hit location.

### **Policy change:**

- The model is now popular in the flood prone and flood affected villages in Dhemaji and Lakhimpur district, the school water and sanitation programme also adopts this model as one of the best practices and included in their plan
- In some village the gram sava also proposed to install at least two-three such latrines in the villages so that these can be sue during flood.

### **5. COST INCURRED:**

Per unit of raised latrine costs Rs.5500-6000- including the pit with steps and squatting plate with the water sealed trap (generally the super-structure is mobilized as community contribution mobilizing the local resources). For villages with better communication and local availability of construction materials such as sand, stone chips and bricks the cost can be reduced to Rs. 3500-4000.

### **6. MONITORING MECHANISM:**

- The quality and design are monitored by the Duryug Protirudh Samitees organized for the community based disaster preparedness, we share the estimate and design with the Duryug Protirudh Samitee and orient them so that they can monitor the whole process.



## **7. CHALLENGES:**

1. Transportation of the construction materials to the site is the biggest problem in the whole implementation; this becomes Herculean task if the road and bridges totally collapsed due to flood.
2. Site selection another big problem as at the same people need such latrine at their door step on the other hand this is taboo that latrine is a worst and dirty place.

## **8. LESSONS LEARNT** (both Positive & Negative)

### **Positive:**

1. Latrine has lot of socio-economic dynamics it is not simply a matter of environmental health or sanitation.
2. Open defecation is a compulsion for the people as they very positively think about the impact of the temporary latrines during the flood.

### **Negative:**

1. Women and girls are most affected group in the society during a disaster, but they do not share their difficulties and the men are also not concerned about women's problem.

## **9. CONCLUSION**

As an organization working in the field of disaster response and disaster risk reduction RVC strongly feels that small interventions in the life of vulnerable community can make considerable impacts in their life if the community can adopt the technology or if the inputs are as per their proposition. There are other areas like Dhemaji and Lakhimpur districts of Assam where affected communities have to compromise with unhygienic and undignified situation as a compulsion, this does not reflect their coping mechanism or tradition but may be compulsion due to lack of proper developmental interventions.

## **10. Submission may include photographs, graphs, charts, and other illustrations-**

Photos are incorporate in different sections of the document.