



## BEST PRACTICES FOR ADAPTATION AND DISASTER RISK REDUCTION

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**CASE STUDY-3: <KANGALI BHARAL- COMMUNITY BASED  
FOOD AND LIVELIHOOD SECURITY MECHANISM ON  
FLOOD PLAINS OF RIVER BASINS>**



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



**TITLE:** < Kangali Bharal- Community Based Food and Livelihood Security Mechanism on flood plains of Brahmaputra River Basin >

Kangali Bharal (Grain bank/Seed bank) is a village institution evolved for storing grains collectively to safeguard fall in nutritional standards of most vulnerable section of the flood affected people during the period of acute food crisis as well as to generate a mechanism to rebuild the lives of the people in distress in the post- disaster period of their own.

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

**1. THEME:** CBDRR mechanism for food and livelihood security

**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 26048' and 27053' northern latitude and 93042' and 94020' 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.
- 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:**

Kangali Bharal (Grain/Seed Bank) is a good practice and has the potential for scaling up/replication because of it's uniqueness as a village institution within the periphery of traditional values and practices supported by strong self-sustaining mechanisms to address food and seed crisis of the flood affected communities during and post-flood period; which has been successfully witnessed during the flood 2004, 2007 and 2008 in several riverine villages on the bank of Brahmaputra.

In the given situation(described in background), it has been accepted by RVC that flooding cannot be contained in total, but its impact on life and livelihood of the people can be mitigated through strengthening the coping mechanism. On the other hand, the attitude of the state organs and other stakeholders working on the flood issue is mostly reactionary i.e. largely rescue and relief basis, ignoring the vulnerability and risk reduction aspects to mitigate the disastrous impact. Thus for the last 5 years works of RVC has largely focused on promoting Community based environment and user's friendly disaster risk reduction (DRR) initiatives.

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



One of the crucial observation of RVC for years is that a major chunk of flood affected people (already being marginalized) of the region have to go through acute SHORTEST OF FOOD in the immediate aftermath of the disaster due to damage of the existing food grains as well as the standing crops.

The other concerned area is crisis of SEED to take up agriculture activities in the post-flood session or coming year/s. The breaking down of the traditional livelihood practices and search of alternative means for survival by the affected people has been exerting excessive pressure on fish population, forest lands and forest produces, threatening the eco system through out the Upper Brahmaputra River basin.

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



In the above described situation to ensure food security during the period of crisis, prevent depletion of livelihood practices rendering staple-food to the community and minimize the excessive pressure on the fish population/forest lands/forest produces creating by the affected population in search of livelihood which is ultimately leading to ecological imbalances the KANGALI BHARAL (GRAIN BANK/SEED BANK) has been conceptualized by RVC in the Brahmaputra River Basin in the year 2003.

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

Goal: The flood vulnerable/affected people of Ganga-Brahmaputra-Meghna River basin have access to food during flood and to seed in post-flood season to rebuild their lives.

Objective: A community based, community owned self sustaining village institution based on traditional values and practices is in place to safeguard flood vulnerable people's right to food and livelihood.

#### **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 (Presently).

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

The process started in the year 2003 with generation of 6 nos. of KANGALI BHARAL (GRAIN BANK/SEED BANK) in 6 worst flood affected villages namely No.1 Arne Chapori, Sonarighat, Sardarchuk, Kosek, Namgharia and Ampak situated on the bank of the Brahmaputra River in Dhemaji District. The process was realized through unison effort of volunteers of RVC and village people.

Apart from educating the community on the concept and mobilizing community for the initiative RVC extended direct support to the community for construction of the 20 quintals capacity grain banks. The design of the infrastructure had been adopted from the traditional practices of the Mishing tribal community who construct their houses on raised stilts (to avoid inundation during flood) out of locally available resources i.e. bamboo/wooden planks and thatch/CGI sheets.

Apart from mobilizing land for construction of the structure the functional aspects (management committee, maintenance of the structure, quantity and mode of grain collection, period of collection of grain, record maintenance, maintaining equilibrium between grain and seed, criteria for disbursement of grains, minimum and maximum stock in hand, management of surplus grain) of the grain bank were worked out by the community themselves through village meeting facilitated by volunteers of RVC. Once the functional aspects are finalized the same is maintained by the Grain Bank Management Committee.

## CASE STUDY1:

### THE BRAHMAPUTRA GRAIN/SEED BANK AT SONARIGHAT VILLAGE: ADDRESSING FOOD CRISIS OF THE COMMUNITY IN THE TIME OF DISTRESS:



Sonarighat village, situated in the bank of Brahmaputra River is one of the most vulnerable villages in Upper Brahmaputra River basin. Being situated at a strategic location the village remains inundated for a considerable period during the monsoon season which results in damage of the agriculture land as well as the standing crops. In case of early monsoon the villagers have to do away with their early variety crops(AHU paddy) where as in case of a normal or late monsoon the people have to do away with the Monsoon crops(SALI paddy). Taking into consideration these

critical flood ridden food and livelihood vulnerability aspects of the people, RVC and Sonarighat Gaon Bikash Kebang in its initiative to promote community based food and livelihood security mechanism established a grain/seed bank at Sonarighat village in the year 2003. Being situated on the bank of River Brahmaputra, the village community named it as "BRAHMAPUTRA GRAIN BANK". The Brahmaputra Grain bank is managed by an 11 members committee of which 9 are women. **Since inception the institution has been largely serving one of the prime objectives i.e. to ensure food security and safeguard fall in nutrition standards in the time of crisis.**

The Brahmaputra Grain/seed bank has its own unique mechanism worked out by the village community through village meeting. Out of the total 110 families in the village 77 families contribute 10 Kgs of AHU paddy (early variety) and 10 Kgs of SALI paddy (monsoon variety) to the bank. 6 numbers of families who do not possess agriculture land contribute Rs. 40 against Sali paddy and Rs. 25 against AHU paddy to the bank. 27 numbers of poorest of the poorest families contribute nothing to the bank but enjoy rights over the bank at par to the families contributing to the bank. **In the process, during the period 2003 to 2008, sixty numbers of families have availed services from the bank to the tune of 25 to 50 Kgs to address food crisis in the time of distress.**

In the given terms and conditions the annual collection of the Brahmaputra bank is 15.40 quintals per annum. As resolved in the village meeting during the period of inception, to ensure that the unutilized grains do not get damage out of prolong storing, it is sold out and the income is deposited in the bank account of the Brahmaputra Grain bank. The money so earned is provided to the distress people to take up livelihood activities, avail health services in case of emergency as well as for the purpose child education. **The amount of money so far earned through selling of grains is Rs. 14500.00 of which Rs. 6000.00 has been extended to the people in distress as loan at an interest rate of 3% for taking up livelihood activities.**



#### From the voice of the community:

I am Ms Niramala Doley. I am 35 years old and reside in the Sonarighat village with my husband Mr. Manindra Doley (40 yrs). I have 5 children of which 2 girl-children and 3 boy-children. Our lives were full of peace and contentment till early 1996. We possessed nearly 7bighas (2 acres)of fertile land which provided us with ample production to manage the whole year, the abundant fish in the Brahmaputra River provide us with the necessary nutrition requirement. But the situation started changing from the mid of 1996. The devastating flood in the year 1996 followed by the flood in the years 1998, 2000, 2002, 2003, 2004 and lastly in the year 2007 snatched away all our peace and happiness. We lost our standing crops every year, we lost a considerable portion of our agriculture land to erosion, the left out agriculture land turned barren out of sand-deposition

Thus, like many others families, our once self-reliant household economy had been crippled down. Since 2004 to meet the both ends meet my husband has been left with no other option but to take up seasonal migration in search of jobs. I have also been working since as an under paid wage labor, forming part to the large unorganized women labor force fighting for survival in the flood plains of Brahmaputra River basin. Lack of regular income generation opportunity lead our family to face food crisis In spite of all these hardships myself and my husband are somehow managing and ensuring that our children can avail education in formal education institution.

But sometimes situation goes out of hand she started, recalling the horrible days that she and her family came across in the year 2006. It was the February Month of 2006. My second daughter Ms Nilima Doley suffered from Chicken pox severely. She became so weak that it became impossible for her to leave the bed and she required my assistance round the clock. In the given condition I could not leave the house for a minute and thus the only day-to-day income generation activity of our family i.e. the wage earned by me through wage labor came to a halt. The little hard savings that I somehow had managed in those days got spend on taking care of Nilima. Nilima's father was also out of home in search of job. Our whole family came under the grip of Severe food crisis. My children had survived for 3 days only in 2 half meals. I was in complete lost. The situation further deteriorated from the 4<sup>th</sup> day. On the 4<sup>th</sup> day when was thinking hard for means to get rid of the situation all of a sudden the village grain/ seed bank came to my mind. I was not sure whether the grain bank has grains at that very moment or not, but I immediately approached the Brahmaputra Grain bank management committee and acquainted them with my problems in details. Understanding the depth of the crisis, the management committee immediately took initiatives and extended support to us in terms of 50 Kgs grain on refundable basis. We refunded the grains in 3 installments within 3 months.

It is beyond my capacity to explain the value of the support that had been extended. Thanks to Brahmaputra Grain bank Committee and also to volunteers of RVC who have initiated the process, she concluded.

## CCASE STUDY 2:

### From the voice of the community:



**We managed to cope with the 2003 post flood seed crisis and rebuild our lives in our own: recalled by Mr. Kuladhar Pegu, President Kosek Gaon Bikash Kebang.**

Kosek is a Riverine village situated on the bank of the Brahmaputra. River Our village consists of 60 families with total population 435 and all belonging to the Mishing tribe. The prime livelihood activity of the people of Kosek village is agriculture which is totally rain fed. We generally produce two variety of crops locally known as AHU (early variety) and SALI (Monsoon crops.). Although our economy is agro based that too rain fed, yet by the grace of the nature we could produce sufficient to enjoy a self reliant economy till the mid 80's. But the situation started changing from the late 80's. Devastating recurrent flood has largely affected our agro based livelihood activities leading to pauperization of a huge chunk of population through out the Dhemaji district which includes our village also. The damage to standing crops and stored seed lead to severe scarcity of seed in the post flood period largely act as a hindrance to take up farming and rebuild our lives. The cost of seed goes up 4 to 5 fold in the post flood period making it impossible for the poor farmers to procure. The cumulative impact of the situation has turned our people poorer to poorer.

But the situation has started changing from the year 2003. In the early month of the year 2003 the volunteers of RVC has come up with the concept of Kangali Bharal (Grain bank/Seed bank). We the Kosek Gaon Bikash Kebang organized village meeting to discuss and analyze the



same to have a clear insight about the feasibility and sustainability of the process in our local context. . After thorough discussion the people of our village came forward to adopt the process for generation of grain bank/seed bank with the objective to ensure access to seed in the post-flood period for taking up farming activities (monsoon crops) in their own. Initiating the process, in the early months of the year 2003 every family of Kosek village contributed 5 Kgs grain to the Grain/Seed bank.

Our decision yielded immediate benefit in the year 2003. In the month of mid July of 2003 the District Dhemaji witnessed one of the devastating floods in its history. Breaches on the embankment of Brahmaputra at 3 points affected almost 600 villages of the District which account to almost 3, 00 000 population. The severely affected villages include our village also. Out of the 60 families of our village 10 families, which include my family also lost the standing crops totally. Our houses were also been damaged either completely or partially resulted in damage to our stored grains/seeds thereby disabling us to take up farming in the post-flood period although there was enough time for the same. The crisis of seed was unprecedented and the price of the seed shoots up from Rs.5/kg to Rs. 15/kg. i.e. 3 times of the normal value.

At that juncture the grain/seed bank that we have developed in our village with support from RVC had enabled us to cope with the crisis and rebuild our lives. We, all the severely affected 10 families called for a village meeting involving the Kosek Gaon Bikash Kebang and volunteers of RVC. In the meeting, we presented the crisis that we were facing and request the village people to extend support to us to rebuild our lives. The meeting after considering every pros and cons of our plight resolved to extend support on return basis to each of the severely affected families with 25 Kgs of SALI seed to take up farming and rebuild our lives. On receiving the support from the grain bank we immediately took up Sali farming and to our satisfaction all of us received grained to the tune of 475 Kgs. to 525 Kgs. The yielded grains not only supplemented our food needs but also enabled us to refund the seed along with the nominal interest (in terms of grains) that we had taken from the grain bank.

Concluding the discussion Mr. Kuladhar Pegu said “if the system (grain/seed bank) was not in place we would have to borrow money or seed from the money lenders/ merchants and would have to pay back half of our production as capital-cum-interest. The experience of the year 2003 is a great learning for us and hence onwards we are putting more and more effort for further strengthening the process and ensure optimum benefit out of it.

### **Key Technical Inputs:**

No major technical input is required as the whole process and structures have been adopted within the pursuit of traditional values and practices. Only the technical input provided was to ensure durability to the structures the use of bamboo poles/wooden poles to raise the stilts had been replaced with concrete poles.

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

**Social impact:** The major social impact that the “Kangali Bharal” mechanism has initiated is “community based collective action” to reduce risks of disaster through own contributions and own management system i.e. since inception Kangali Bharal has been working as a cohesive mechanism within the community for disaster risk reduction.

The other major social impact that the “Kangali Bharal” has brought that it has succeeded in tapping migration to a certain extend.

**Environmental impact:** The major environmental impact that the “Kangali Bharal” has brought is reducing excessive pressure on fish population, forest land and forest produces that otherwise exerted by the flood affected population in quest of livelihoods.



**Economical impact:** The economical impact of the grain bank can be viewed from 2 aspects. 1<sup>st</sup> the people of the villages with grain banks need not procure or borrow seeds at high price as described by Mr. Kuladhar Pegu in his case study. The other economical impact is generation of community fund for CBDRR and livelihood promotion as described in the case study of Brahmaputra Grain bank.

**Policy change:** The District administration of Dhemaji District introduced the mechanism through the PRIs in 65 Panchyats of Dhemaji District. In the process 265 numbers of “Grain banks/ Seed bank” has been conceived but due to lack of effective management mechanism the same have not sustained. Critical engagement with Government and PRIs to adopt the process of grain bank/ seed bank on Government’s policy capitalizing on Targeted Public Distribution System, National Rural Employment Guarantee Act (NREGA) 2005, Rashtriya Sam Vikash Yozana (RSVY) or through other Government’s scheme for food entitlement and employment assurance is in process.

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

The cost for construction of a 20 quintals capacity grain bank is approximately Rs. 30000.00, which includes the community contribution.

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

In initial stage constant engagement of volunteers of RVC was required. It was mainly done through organizing monthly meeting at the grain-bank. Physical verification of banks and other documents are done jointly with the community. In course of time gradually involvement of volunteers of RVC is reduced and the Grain Bank Management Committee undertakes the responsibilities. Presently volunteers of RVC attend the monthly meetings twice a year and in case of any complications the “Grain Bank Management Committees” ask RVC to attend the monthly meeting.

#### **7. CHALLENGES:**

1. Mobilizing community initially.
2. Prioritization of beneficiaries.
3. Recollection of the disbursed grains/seeds from the beneficiaries within the stipulated time.

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

##### **Positive:**

1. As the “Kangali Bharal” is associated with food and livelihood security hence a strong community’s ownership prevails which acts as a driving force to ensure effective participation of the whole community, strong management system and self sustaining mechanism.
2. Every family within the village has a strong feeling to get associated with the grain/seed bank. It is reflected in many cases where the families who do not go for paddy cultivation also contribute to the grain bank either in cash or through procuring grains.



3. Conversion of excess grain/seed to cash and in turn deposition of same in bank is highly prioritized by the community which further strengthen the DRR practices.
4. Easily replicable by the community which is seen in numbers of nearby villages although in a small group.
5. Bears strong potential to create linkage with the Public Distribution System and there by to influence the PDS system in favor of the beneficiaries.

**Negative:**

1. In the context of equity (number of family members) maintaining uniform contribution from every family towards the grain/seed banks creates confusions within the community.
2. Successive flood or drought has every chance to weaken the self sustaining mechanism.
3. Non-refund of grains/seeds by the beneficiaries weakens the functioning of the grain/seed banks.

**9. CONCLUSION**

A process initiated by RVC in 6 perennially flood ravaged villages has been serving the community through ensuring food security in the time of crisis and enabling them to restore their livelihood in their own. Success of the effort in 6 numbers of the Riverine villages has in course of time brought more villages into the process and presently 20 numbers of Riverine villages are to certain extend self reliant to access food for at least 7 to 14 days during emergency situation. On the other hand the people of these villages are more or less self sufficient on accessing seed during the post-disaster period to carry on the livelihood activities which render staple food to the communities and in turn minimizing the excessive pressure the flood affected community has been exerting on the fish population/forest lands and forest produces.

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

Photos and case-story included.