JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

Cultivation of *Rabi* Crops and Agri-allied Activities at the Riverbanks in Assam:

A Case study

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Abstract: The mighty river Brahmaputra and Barak and many tributaries of these two great rivers are the sources for the livelihood of hundreds of people in Assam. Many people inhabiting very nearer to these sites depend on riverbanks and 'chars' created by many rivers are the sources for cultivation of the different *rabi* crops as well as practice of some agri-allied activities. This study was conducted at an area in Dakashin Narayanpur region under the Naraynpur Revenue Circle of the Lakhimpur District, Assam and tried to find out about the entire cropping procedure of *rabi* cultivation and some agri-allied activities practiced by many of the people of this region. The study revealed that a number of farmers are very much involved in cultivation of different *rabi* crops and agri-allied activities such as rearing of animals, sericulture, fish culture and fishing etc. mostly with traditional and indigenous methods which play the integral part in their livelihood.

Key words: *Rabi* crops, agri-allied activities, riverbanks

I. INTRODUCTION

Since time immemorial, there has been a closer relationship between man and river. During the ancient civilizations viz., Babylonian Civilization, Egyptian Civilization, Indus Valley Civilization, China Civilization etc. men developed a closer relationship with river, river-based resources and sources. During the present world too, man-society-river relationship is quite an important fact. In fact, rivers are treated as the lifeline of lakhs of people all over the world. Agriculture, economic, cultural life of mankind is mostly based on rivers. Therefore, different academic disciplines include the man-society-river relationships in their academic areas and for which a wide range of academicians have been attracted to study upon it.

Assam, a state of North-east India has two large rivers, viz., the Brahmaputra and Barak along with a number of large and smaller tributaries such as the Subasnsiri, Ranganadi, Dikrong, Dihing, Dichang, Dikhow, Janji, Bhogdoi, Kakodunga, Dhansiri, Kolong, Kopili, Manah, Krishnai, Buroi, Jiabhoroli etc. are of the sources of agriculture, economy, communication, business, culture of hundreds of people. The people of inhabiting nearer

to this two great rivers viz. the Brahmaputra and the Barak and the tributaries are depending on these natural sources for their livelihood especially for agriculture and agri-allied activities practiced in different seasons of a year. In this regard, it may also to be mentioned that the river 'chars' and the river deltas are become suitable for different crops during the post-monsoon period and many farmers cultivate different crops with their effort.

The district of Lakhimpur of Assam is one of the districts is rich with such natural sources. The mighty river Brahmaputra flows through its southern part and its tributaries the Subansiri, Kodom, Kakoi, Ranganadi, Dikrong, Pichala etc. flow through the different parts of the district. The banks of these rivers as well as the 'chars' and the deltas created by the river Brahmaputra and its tributaries are the sources of agriculture and many agri-allied activities for many people and many farmers take opportunity for cultivation of the *rabi* crops during the winter season.

This study was conducted at the riverbanks areas of the Brahmaputra(locally known as the Luit) under the Dakshin Narayanpur Gaon Panchayat of Lakhimpur district. The villages of this riverbank area are Napomua, Silikhaguri, Tintia, Soru Tintia, Majghat, Borbil etc. and the principal communities are the Ahoms, Muslims and Mishings. It is to be mentioned that the area under this study is a high flood-prone region of the district that faces from higher to medium flood almost each and every year. People of this area are co-adjusted with flood during summer for which almost all the households couldn't forward their summer crops especially paddy during summer season. The region witnessed severe flood and riverbank erosion in 1998 as a huge area was vanished within a week that forced many people for displacement. However, many people adjust with these natural havocs. Some households are residing very nearer to the river dyke or even at the side of the dyke.

It is a fact that, many farmers of this region are very enthusiastic involved in cultivation of different crops. Many farmers cultivate at the riverbanks, river 'chars' and river deltas. It is seen that during the post-monsoon period when the water of the river dried up and the 'chars' and deltas become visible and the cultivators get ready to start cultivation of *rabi* crops in winter season. The farmers take opportunity to practice different *rabi* crops at the fertile soils of the riverbanks, 'chars' and at the river-deltas. Importantly, along with such crops, many riverine people of this area adopt different agri-allied activities forwarded with river-based natural sources. Therefore, there is a great need of a systematic study entirely about the *rabi* crops and agri-allied activities of those farmers.

II. OBJECTIVES

The focal aims and objective of the study were to bring out about the procedure of the *rabi* crops cultivated by those farmers of this area, procedure of the agri-allied activities, about the marketing system and problem(if any) aroused in case of the agriculture and agri-allied activities.

III. RESEARCH METHODOLOGY

This study was conducted on the basis of both primary and secondary data. The primary data were collected through field study at the sites nearby the river Brahmaputra (which is known as the Luit at the locality) in Dakshin Narayanpur region of Narayanpur Revenue Circle under the Lakhimpur District, Assam. The study was conducted with the help of interview in which a number of farmers were asked relevant questions. Besides, observation of the investigator was mostly done to collect primary information in regards to the *rabi* crops as well as the agri-allied activities of the farmers. The collected information was processed, analyzed and finally made its results in a systematic manner.

IV. RESULTS AND DISCUSSION

As the farmers are often threatened by the floods occurred almost each and every year during summer season, they are having more interest in cultivation of *rabi* crops in winter season and some agri-allied activities in entire year. The cultivators practice the *rabi* crops at the riverbanks, river 'chars' and at the river-deltas appeared during the post-monsoon period. It is a fact that during the post-monsoon period, water of the river dried up and thereby the 'chars' and deltas become visible. As they reported that from last of September, a huge area appear as the 'chars' which are suitable for different types of *rabi* crops they get ready to start *rabi* crops at these sites because the soils become fertile and opened.

The farmers reported that in case of the riverbank areas permanent ownerships are there which are found by the owners as their inherited property. But, in case of the plots of the river 'chars' or deltas no permanent ownerships is there and therefore, through a mutual discussion among the farmers, the plots are distributed among them. Each and every year a sitting is held at the 'char' and plot distribution and allotment are done among them who opt to cultivate *rabi* crops. After plot distribution and allotment the farmers decide to cultivate different crops in different plots allotted to them according to the quality of soil. It is a fact that most of the farmers are having a minimum knowledge about the soil quality and they are able to differentiate the soil type which is suitable for a particular crop from their experience. They also practice different crops at the fertile sites of the riverbanks.

Since, most of the farmers are poor economic background and they don't have modern equipments, machines or technologies in forwarding their cultivation, therefore, most of them use traditional equipments from ploughing to harvesting. Only few number of the farmers use tractor, power-tiller in ploughing. It is in line with a study of Chutia and Saikia(2014) who conducted their study among the farmers of the Mishings community inhabiting at the banks of the river Brahmaputra in Majuli and reported that due to poor economic condition, some people couldn't use modern technologies. As reported by them, they mostly use natural fertilizer and organic manure such cow dung, poultry and goatery wastes. For protection of plants from insect and pest attack the farmers use

traditional and indigenous methods like use of ash, application of plant leaf mixture of plants like *neem, karas, ghura neem, bihlongani* to a great extend. Besides, to protect the crops from birds, they use birds scaring symbols at their crop fields. Also they build small bamboo huts locally known as *tangighor* to keep watch and scared off the birds attacking the crops. They can use water from the river that flows very nearer to their crop fields. In most cases entire family members of a farmer are very much involved with the entire process i.e. from ploughing, sowing, transplanting, weeding harvesting, storing etc. It could be mentioned that some enthusiastic unemployed youth of this area are very much involved in such cropping.

The principal crops cultivated by the farmers are pumpkin, mustard, cabbage, cauliflower, tomato. potato, radish, carrot, coriander, brinjal, bitter gourd, pea, black gram, green gram, spinach, garlic, ginger, ladies finger, bottle gourd, wax gourd, etc. The investigator witnessed the entire In a similar study, Phukan(2007) reported that many people in flood and riverbank erosion affected areas of Matmora area practice *rabi* cultivation in traditional way and able to do profit to some extend as well as it helps in food and nutrition. In his study it has been revealed that almost 56.51 per cent flood affected and erosion-induced displaced people of the studied area practice various types *rabi* crops like cabbage, cauliflower, radish, tomato, mustard, pea etc. Among them some are provided govt. assistance in terms of seeds and fertilizers.

The practice of *rabi* cultivation helps them in two ways. First, they could use as food items and could sale it by which they are able to gain profit. In selling, generally two methods are adopted. First, the productions are sale by the farmers at the weekly markets or daily markets at their locality or far from their residential site carrying through bicycle or hired vehicles or horse-carts. They also go to the villages nearby or far from their area and sale door to door. Many farmers sale the products to the wholesalers. But, as reported by them, the selling to the wholesalers is not very much favorable for them as they don't want provide expected price. Along with *rabi* cultivation many farmers are involved in banana cultivation at their homestead garden. It helps them in income earning to some extend as well as they can make a traditional boat locally known as *bhur* through the banana pseudostamp of banana cultivar.

Besides, some agri-allied activities are also practiced by many of the households. In this regard animal husbandry is a major one that practiced by almost all riveline households of the studied site. Cattle rearing, goatery, rearing of fowls, piggery etc. are some of such activities. This activity is favourable for them as a huge area is grassy and natural elements are favourable for animal husbandry. In such environment, the people could provide all these necessaries to the animals. *Eri* culture is another income generating activity of some of the households as they reported. Because, at this locality castor plants are mostly found that helps in cultivation of *eri*. It leads the cultivators for production of *eri* silk.

Fish cultivation and fishing are also practiced by many people in the studied area. Some of the households have arranged ponds at their homestead garden and they practice fish cultivation at these sources. The nearby river,

i.e. the Luit helps many people as the source of fishing. Some people regularly go to the river for fishing and collect fishes with their traditional equipments which also help them in gaining profit. The gathered fishes are sold at the markets or by door to door visits in neighboring areas.

Though the cultivators of this area are involved in *rabi* crops and other agri-allied activities, however, some problems are aroused. In practicing the *rabi* cultivation it has been revealed that, the stored grains to be sown in the next year are destroyed often, due to lack of suitable and sufficient place, lack of scientific stored system or due to the infestation of different insects. Besides, flood water often affects their stored grain. Secondly, due to lack of quality seeds and sufficient seeds, sometimes they could not practice according to their expectations. Thirdly, many wholesalers purchase crops in a minimum rate for which the actual farmers are deprived of profit. Fourthly, insects, birds, wild or domesticated animal destroy huge area of production, which often stands as one of the major hurdles in more production.

Besides, in selling at the weekly or daily markets far from their residential sites, many farmers face problem of carriage. Poor road system connected to their site also stands as a hindrance. In this regard, the result of Gogoi(2007) may be drawn. In a similar study she has pointed that due to lack of marketing facility and poor transportation many Self Help Groups of the displaced sites of the Dibrugarh District, Assam practicing *rabi* cultivation were unable to get profit and therefore have to left up the practice.

The above problems are also reported in the *Economic Survey of Assam, 2010-2011*. It reports that during peak harvesting season of *rabi* vegetables the markets are overloaded with vegetables and the farmers have to dispose their produce at a very low price on the very market day due to non availability of cold storage facility near the market. Secondly, inadequate availability of processing units/ cold storage/ post harvesting infrastructure, inability of small and marginal farmers to transport their produces to the markets and inadequate transfer of off season Vegetable Technology stand as the major hurdles in this regard.

In case of the production through the agri-allied activities practiced by many cultivators, it has been reported that some seasonal diseases attack the domesticated animals and fowls. Even sometimes, entire fowls are lost for such diseases. In case of domestication of cows, goats and pigs it has also a problem that during the flood situation, sometimes such domesticated animals are lost due to drawn off or post flood diseases. In case of fish culture, such problems are also stood as the entire fish production is lost due to drown off through the flood of high magnitude. Besides, sometimes the diseases also attack the fishes during the post flood period. They reported that sometimes in case of these agri-allied activities they couldn't get proper market which hinders in gaining profit.

In the above results, it has been found that, the people of the studied area practice *rabi* cultivation at the chars, riverbanks, river-deltas etc. which help them in food and financial aspects. Most of the farmers could able gain profit, which help them in their livelihood. However, sometimes under some circumstances they couldn't able

to gain expected income. Therefore, government should provide measures to reduce the problems. Besides, NGOs which are involved for the flood-victims, displaced people etc. may take initiatives for forward and uplift their effort.

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