



## Agricultural Production Strategies And Sustainability In Rural Assam With Special Reference To The Char-Land Of Assam

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### Introductions:

Generally, Char land area can be described as tracts of land surrounded by river water of sea, lake or ocean. Simply it is the Low-lying flood prone riverbanks. Char-land area shapes are always changing. A char-land becomes a Chapori on the push and pull of the Brahmaputra river water in Assam. Some of the areas of Majuli, Dhemajee, Morigaon, Nagaon, Chaygaon, Nagarbera, Dhubri, Mankachar, South Abhayapuri, Lengtichinga etc amongst the area of Charland/Chapori. Allocation of area to each farmer is very less. That is mostly in between 1.0 to 1.5 hectares only. So, in this limited area; all Char-land farmers needs to full-fill their ambitions. There is no any option except to produce from less land area in future. That means proper management of input as well as its availability is very important. We cannot have the optimum production level at all the time; because of following reasons:

- a. Lack of assured irrigation facilities during Rabi and Pre-Kharif season,
- b. In adequate farm-power availability, i.e. 1.25hp/ha against the National average of 2.3hp/ha.
- c. Poor input availability to farmers of Assam.
- d. Non-adoption of improved technologies in Farmer's field and somewhere, it is partially utilized.
- e. Lack of marketing and storage facilities.

Sustainable Agriculture maintains the soil fertility and water availability judiciously; minimizing air, water and climate pollution and promotes Bio-diversity.

It is the management of a farm as ecosystem; where we can have our quality type food. feed. fodder and fuel regularly without deteriorating soil health, micro flora & fauna present in that existing 'Eco-system'. Char-land farmers has an advantages to go with Organic farming and more than 80% holdings are within small and marginal type; working in rain fed cultivation with indigenous knowledge and available human resources to take the activities. Organic Agriculture is emerging as mainstream agriculture in 21<sup>st</sup> Century due to growing desire for safe and healthy foods, necessity for restoration of Soil health and Fertility; protection of Soil and Environment, Conservation of resources. improvement of Homestead garden; reduce dependence on chemicals for getting increased yield of all crops grown within that ecosystem for higher profitability. Thus, all the measures and Agricultural practices needs to be adopted depending upon the availability of water, agriculture in our plains and Char-Land area of Assam. Besides it (Flood) deposits tons of sand on nearly cultivable lands: making it less fertile or unsuitable for cultivation every year. Due to this phenomenon, many farmers have become landless and have become landless and have been forced to migrate to different parts of our country in search of alternative source of livelihood.

**Background:**

Char-land area is an area of Brahmaputra and its tributaries mostly found in Assam. The total geographical area in Assam is 78,523km<sup>2</sup>; out of which the area under "**Char-land/Chaporis** about 3,608km<sup>2</sup>. The cultivable area in Char-land is 340km<sup>2</sup> only. The Literacy % is About 19.30. About 67% population in char-area is falling under the below poverty line. Allocation of area to each farmers is very less. That is mostly between 1.0-1.5 hectares only. So, in this limited area; all char-land farmers needs to full-fill their activities. There is no any options except to produce from less land area in future. So, all farmers shall have to rear livestock's viz cows, Goats, Sheep, poultry birds etc. with latest available technologies in order to earn a regular income out of it. They also grow rice crops, oilseeds, pulses, rabi vegetables and summer vegetables in their field regularly. Now day's productive varieties are to be chosen by all farmers. Also, the produce are to be sold in local market regularly in higher price. Agriculture & Allied activities constituted the single largest (33%) contributor to the GDP of our country in between 1991-2000. 80% of the char area population lives below poverty line. Char Area Development, Assam needs to bring certain schemes in order to boost the economy of rural people of this area. The problems in the char areas are peculiar in nature, due to constant threat from flood and erosion during rainy season. The land mass is segregated year after year and cut off from each other, making it very difficult for running any major scheme for road communications, irrigations, power supply etc. Education as well as Medical facilities are very much poor. In Char-land area, winter rice, summer rice, rabi vegetables, Summer vegetables, Fishery and Livestock's are very much common. But scientifically the farmers of Char-land area are not following any technologies for raising crops. But they are still following their own techniques for getting good produce. They also do not follow the actual techniques to rear their livestock's. That is why they get less milk productions, poor health conditions of Cows, Goats, Sheep & Poultry birds etc.

**Crop Management Approaches:**

Char-land farmers are facing lots problems in cultivating their crops in crop fields. Sometimes Flood and sometimes droughts. So, they shall have to cope-up with the nature' They generally follow rain fed technologies more or less. The major agricultural practices involved in crop production and management are listed below-

- 1) Preparation of Soil for good germinations.
- 2) Sowing of Seeds.
- 3) Manure and Fertilizer applications.
- 4) Irrigations.
- 5) Plant protection and Weed management.
- 6) Timely harvesting
- 7) Storage

Crop rotation is very much essential in char land farming. **Crop rotations** is the practice of planting different crops sequentially on the same plot of land to improve soil health. Optimize nutrients in the soil, and combat pest and weed pressure. For example. a farmer has planted a field of Maize. When the maize harvested, a farmer might plan for growing pulse crop as succeeding crop, since Maize consumes a lot of Nitrogen from soil and then Pulse crop return Nitrogen to the same soil. Following techniques are also helpful for the char-land farmers.

**1. Identifications/Recommendations of Early durations rice varieties; which can safely be harvested before onset of floods.**

- a) Luit
- b) Kopilee
- c) Disaang
- d) IR-8(Duration is less than 100 days)

**2. Agro-Techniques for Cultivations of Such varieties.**

- i) Plant populations -36,12,48nos/m<sup>2</sup>
- ii) Sprouted Seeds may be sown in lines on the puddle soil in Post flood situations.

**3. Crop Sequences.**

- i) Jute-Rice-Potato
- ii) Jute-Rice-Vegetables.
- iii) Rice-Vegetables.
- iv) Rice- Mustard/Toria.
- v) Rice-Toria/ Mustard.

Char-land area is mostly affected by recurrent type of flood water. So, farmer of this area use to grow Boropaddy (summer rice) in flood free period by utilizing available irrigations water with the help of STW. Cold Climate prevailing in Assam during Nov-March. reflecting the vegetative growth phase of Boro rice and early ahu. Boro rice is exposed to coldness for longer period of time than Ahu rice. That is why cold tolerant varieties of Boro rice may be grown by the farmers of Char land areas viz -Pan dhan, Joimoti, Kanaklata, Lalganga, Baismuthi, Gedageddi etc. The yield potentiality is about 80q/ha i.e. 26 mon/bigha. The yield potentiality is as high as Ahu & Sati. Variability in the onset of the monsoon season is a factor that determines the beginning of planting season or transplanting of rainfed rice. This is because of the water required for land preparation and soil puddling. That is why Sali rice is becoming little bit problematic due to flood water. But flood tolerant varieties like Bahadur Sub-1 & Ranjit Sub-1 could be grown well under the submergence condition in Char-land area of Lower Assam.

### **Horticulture Activities:**

Horticulture sector in Assam deals with the following crops and activities

- 1) Fruits
- 2) Vegetables
- 3) Spices
- 4) Floriculture
- 5) Potato
- 6) Onion & Garlics
- 7) Medicinal & Aromatics
- 8) Mushroom cultivations and
- 9) Fruit & vegetables

Preservations and processing. Besides, it deals with Bee Keeping, Food Processing, Micro irrigations and Postharvest management including cold-chain development. Horticulture & Food Processing Department, Assam is encouraging the farmers for area expansion of high value commercial Fruits, Vegetables, Spices. Floriculture through different central sector and State sector on-going schemes, with an objective of increasing the production as well as productivity of these crops even in Char-land areas of Assam.

### **Diversifications of Horticulture:**

Diversification means the breaking of monotony of ongoing crop activities in the field operations. Diversification of Horticulture is a best options as there are several opportunities to increase the Productions.

- 1) Produce higher biomass than field crops/unit area, resulting efficient utilization of Natural resources.
- 2) Have the potential development of wasteland through planned strategies.
- 3) Needs comparatively less water than food crops.
- 4) Provides higher employment opportunities.
- 6) It provides Nutritional Security.
- 7) It is Environment friendly.
- 8) These are high value crops with high potential for value additions.

### **Conclusions:**

Flood occurs almost every year in one or other parts of the Lower Brahmaputra river basin in Assam with varying frequency and magnitude. This occurs particularly in the monsoon seasons from the month of June to October. Thus, char lands are formed during floods with deposits of silt from year to year. Accordingly, Farmers shall have to cope up with such situations. There are so many opportunities available to fight with the flood situation. All the Flood tolerant rice varieties are to be procured for cultivation. Fishery as well as Duckery farming will be very much promising. We should keep our cattle, Goats, Sheep's to other safety places for at least 15- 20 days in order to escape from flood. Post flood contingency plan needs to be prepared depending upon the observation of previous year's record of flood Char scenarios in some localities of areas viz Chaigaon, Goroimari, Goalpara, Dhubri, Mankachar, South Abhayapuri, Lengtichinga, Malegar and Kalgachiya. Now a days many young farmers from char land area give positive attention to Poultry farming, Fish farming, Homestead garden development as well as for raising vegetables. Finally, we can say that, both problems and prospects are there in char areas. we have to increase the production and productivity of field as well as horticultural crop in char

areas in Assam. I hope the present Government will look in to this matter quite seriously in coming days.

**References:**

1. Assam Prakalpa (2000): 'Assam beyond 2000'. Assam prakalpa. Guwahati.
2. Goyari, P (2000): 'Cropping Pattern changes in the North-Eastern Region of India: 1980-81 to 1994-95', M.Phil thesis. Indira Gandhi Institute of Development Research (IGIDR), Mumbai.
3. Sarkar. A.K and R.P Singh (2002): 'Importance of Long-Term Fertiliser. Use for Sustainable Agriculture in Jharkhand'. Fertiliser News, Vol 47(11), November, pp 107-11
4. Swaminathan, M.S (2001a): 'Livelihood Security Must Be the Bottomline', Frontline, February 3- I 6.
5. (2001b): 'Convocation Address', Assam Agricultural University. November 29.

