Problems and Prospects of Farmers in Sundarbans Delta (Mangrove Eco-system) of India

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Abstract

Sundarbans is such a unique region which is recognized as UNESCO World Heritage Site, a biodiversity hotspot with a treasure-trove of flora and fauna. It is a largest delta formed by a number of islands crisscrossed by uncountable rivers, creeks, rivulets. It is a largest and one of the few existing mangrove (halophytes) eco-systems in this world famous for the adobe of notorious infamous man-eating Royal Bengal Tiger. Inhabitants of such a wonderland struggle hard to earn a living. Salinity of the soil, lack of communication and other basic amenities, flood and storm cause havoc in this region. This article presents a ground-level reality of farmers in this region. Suggests possible solution as well as cautions that any strategy of development if adopted without a clear understanding of people's perspectives empathetically will aggravate the situation instead improving it.

1. Introduction

Sundarbans is a delta region formed by a number of islands where the River Ganga meets the Bay of Bengal. The river water here is saline due to sea water and the rivers are tidal in nature. Therefore, salinity is a big problem which acts as a great hindrance in agriculture. Drinking water can hardly be available at a deep of atleast 900-1500 ft that too sometimes not safe and pure. But if protected from river water by construction of embankments, land are conducive to produce a bumper production because soil here is alluvial type formed by the continuous deposition of silts by the River Ganga which is highly fertile for cultivation. An extraordinarily good yield can be obtained from crop cultivated without any kind of fertilizer or dung manure. Every year during March, April and May, cyclone, gale, flood cause havoc in this problematic but wonder land of the world destroying the river embankments which are essential for the very survival of the human habitation.

2. Agriculture and Animal Husbandry

Agriculture is the mainstay of economic life of the rural people in Sundarbans. About 90 per cent of them depend on agriculture complemented and supplemented with animal husbandry. Mono-cropping agriculture, i.e. cultivation of *aman* paddy during monsoon and harvesting during autumn, is practised in general which is subsistence and traditional in nature. Agriculture is dependent solely on animal drawn power.

Other subsidiary economic activities pursued traditionally are fishing in the river, canal, pond, and catching prawn seedlings and crabs from river and selling in the nearby local markets; fishery (brackish water fish and prawn cultivation in agricultural land surrounded by ring bund); wood cutting and honey collection from mangrove forest; etc.

Besides these, cultivation of vegetables (chili, brinjal, radish, cucumber, kidney bean, cauliflower, cabbage, gourd, pumpkin, potato, onion, spinach, coriander, etc); growing fish in pond (each and every household has a pond of one kind or other) for home consumption and selling; cultivation of high yielding paddy varieties (locally known as *boro* paddy or summer paddy) during March-April with irrigation, pesticide and fertilizer; are other livelihood activities of the rural people of Sundarbans.

Animal husbandry is traditional based on socio-economic, socio-cultural and agro-ecological considerations. All the livestock including duck, chicken and goose are reared traditionally in free-range system, complemented and supplemented with stall feeding/feeding at home, depending on prevailing agricultural practices of the area. Rearing cattle, goat, duck and chicken is common across the class, caste and religion. Cattle-buffalo are used mainly in agriculture. They also provide valuable by-products like milk (home consumption) and dung (mainly as cooking fuel). Sheep, goat and pig serve the purpose

of savings for meeting small cash need in emergency. Whereas duck, chicken and goose rearing helps to meet family food requirements (as egg and meat), social obligations (showing hospitality to guests), and small cash need by selling eggs or live birds to the neighbours as well as in the *haat*.

Crossbreeding in cattle is a total failure in the rural Sundarbans mainly due to non-availability of feed, salinity, lack of availability of and accessibility to artificial insemination services coupled with absence of a market for milk.

3. Problems of Farmers

Problems related to agriculture and animal husbandry faced by the farmers of rural Sundarbans are many and diversified unlike other regions of India. They are as follows.

- Non-remunerative agriculture
- Salinity, flood and cyclone
- Poor communication and transportation facility
- Lack of veterinary facility
- Feed and feeder scarcity

There may be many more problems of which villagers are not aware of in their present socio-economic context.

4. Possible Solutions to Overcome the Problems and Interventions Needed

As it is very difficult to make cropping a remunerative one, it seems more feasible to grow vegetable commercially in an organic way especially for the urban consumers. For this, growers need to be provided with all the inputs necessary for the purpose on payment basis. Like technical information, package of practices and physical inputs (seed, storage and transportation facility, etc) with a remunerative market.

Problems of salinity, flood and cyclone are natural which are to some extent overcome by constructing, maintaining and strengthening of embankments and levee facilities and by the disaster management mechanisms (mainly providing relief supplies during flood and cyclone) by the Government. In fact, embankments are must be there for the very survival of the life of people in Sundarbans protecting them from flood and salinity because, the land here lies below the sea water level. If not protected, land will be inundated regularly with tidal water entering into the river from sea. Mechanisms are still absent to combat the disastrous effects of cyclone, heavy rain and flood together.

Poor communication and transportation facility may be improved to a considerable extent by a slight change in the rural infrastructure at a little cost. In most of the cases construction of a few meter to one km brick road and leeve facility in few places may serve the purpose very well.

Lack of veterinary facility can be improved by providing private veterinary facility. But which is possible only if people are engaged in commercial livestock production to earn a living profitably.

Scarcity of feed and fodder may be mitigated by following some low cost feed and feeding practices. But that too is only feasible where the purpose of livestock production is commercial. And livestock production will transform from traditional to commercial only if there is a remunerative market for the products.

A locally self sustainable model of commercial livestock production and marketing can be tried out. In this model some people will be organised to cut excess grasses and make hay. And some people will prepare concentrate mixture with locally available ingredients and sell to the livestock producers. A group of veterinarians will provide health care coverage on payment basis. Still some other people will purchase the products or live animals/birds for selling in the big markets.

5. Prospects of Organic Vegetable Production

Vegetables are easier and cheaper to cultivate with very less irrigation and no fertilization. But once the land is flooded with saline river-water it remains unsuitable for cultivation for next 2-3 years. But after that it gives a bumper yield.

Vegetable cultivation/kitchen gardening is something considered by the villagers as a pride. Vegetables are generally cultivated in the courtyard, backyard, or on the edge of the pond mainly for home consumption. Besides, vegetables are cultivated for selling in the tiny plot of agricultural land which is fenced where mono-cropping is practised and open where double-cropping is practised.

Villagers sell their produce in *haat* which ultimately reaches to nearby urban areas or big markets of remote cities via several hands. If the vegetable growers are connected with remunerative markets of big cities directly, they will be motivated to grow vegetables commercially. Agriculture is not profitable nowadays which is costly, risky and labour intensive, whereas growing vegetables are profitable and are cultivated almost without external input of any kind. If the villagers are organised and supported with supply of inputs, technical information and a remunerative market, there seems a lot of scope in organic vegetable production.

6. Animal Feed and Fodder Situation

Animals are reared with little/no external inputs mainly based on grazing in the agricultural fields, supplemented and complemented with stall feeding and tethering. Grazing practices vary with the seasons depending on the agricultural practices of the locality, as agricultural lands are used for grazing. Free grazing is prevalent in mono-cropped areas, whereas tethering/controlled grazing in double-cropped areas. Free grazing starts as soon as *aman* paddy is harvested (October-November), and

continues till sowing (May-June). From May-June to October-November (five months) no grazing is allowed as agricultural fields remain cultivated with *aman* paddy during this period. Only stall feeding complemented and supplemented with tethering is followed.

As harvested field contains almost nothing to graze and stall feeding consists mainly of paddy straw, cattle remain almost illfed round the year, except during April-May when fields become covered with lush green grasses on the onset of monsoon. Thereby suddenly gets a chance to feed better. Due to this phenomenon cows here show seasonality of estrus mainly where mono-cropping/free grazing is a practice. Thus cows come in conceivable estrus only after the onset of monsoon during April-May and become conceived to give birth during January-February.

On the other hand, during the period from May-June to October-November when fields are cultivated with paddy and animals are stall-fed, abundant grasses are available in the fields which remain unutilized. Practice of hay making with these grasses and feeding during scarcity period (October-November to April-May) may help a lot in combating feed scarcity to a great extent.

7. Conclusion

It is a general paper highlighting the situation and condition of the farmers in mangrove forest region named as 'Sundarbans'. It seems that there is a tremendous scope to improve the condition of the farmers in Sundarbans delta of India. But before making any venture towards the development of the poor farmers in the region one must need to think a while. Anything adopted wrong may yield a serious consequence to the survival of the inhabitants and eco-system in this remote and inaccessible region of the world. However, some truly caring hands can bring a significant change in the desirable direction provide proper institutional support.

8. Related Literature

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