Title: Rice and Shrimp based Cropping Systems in the Salinity Affected Area of Bangladesh: A Case Study of Shuktia Village in Satkhira District

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Background, Objectives and Findings of the Research

Background

The cropping system of an area is needed to study because it has a strong relationship with the existing environment and socio-economic condition of that area. Out of 2.85 million hectares of coastal and off-shore land in Bangladesh, about 1.5 million hectares are affected by varying degrees of salinity. Almost all of the rivers and their tributaries in the southern and south western part of Bangladesh contain saline water with varying degrees of salinity. This is a problem for rice production in the coastal villages. The local people are trying to change or modify their cropping pattern to compete with the changing situation of the environment specially the salinity. The salinity level of the concerned research area has not been measured by the last ten years. The local people also are changing their cropping pattern from rice based to shrimp based.

Objectives

Keeping those points in mind the following objectives have been set-i) to measure the current salinity level for soil and water of the research area and ii) to elucidate the status of rice and shrimp based cropping systems in the area.

Findings

It has been found that the soil salinity level in the study area varied depending upon the cropping pattern followed. The salinity level is high in Shrimp-Rice cropping pattern as the shrimp cultivation needs the saline water. The measurement of salinity level revealed that during the study period maximum soil salinity was found during the month May (6.92 ds/m) and highest field water salinity was found in the month of June (50.98 ds/m) which has a strong relationship with the river water salinity of the adjacent *Dolua* river (78.3 ds/m in June).

The local people are practicing 11 different types of cropping pattern among which rice and shrimp based cropping pattern is being practiced by most of the farmers. The farmers have switched their cropping pattern from Transplant *Aman* rice-*Boro* rice to Shrimp – *Boro* rice pattern in most of their land type. The *Aman* rice-*Boro* rice pattern is followed in the medium highland where no saline water can come and the Shrimp – *Boro* rice patterns is

followed in medium lowland where saline water is taken during shrimp cultivation. It has been found that the local farmers selected the rice variety Hira and Tia-2 that have a comparative more salt tolerant capacity than other varieties cultivated in medium highland in *Aman* rice-*Boro* rice pattern.

Regarding the shrimp cultivation, the local farmers themselves adopt their own technique of cultivating the shrimp to get maximum output. It has been found that the shrimp cultivation is more profitable than that of rice cultivation.

Comments and Suggestions on the Field School

Basically I am a teacher at Bangladesh Agricultural University, Bangladesh and I teach the students about different aspects of cropping systems. In the field school we observed the changing pattern of forest area in to commercialized citrus plantation area and the causes behind this change. We also got some experience about how the local people are managing their forest resources and also their activities to establish an Organic Farming Community. I think that the experiences of this field school, I can use it to conduct my research and in future I can also convey this process to my students. Also I want to continue my higher study in this area that's why this field school experience will help me in a precise way by which I can reach to my goal.

In my honest opinion, all the aspects of this field school that has been arranged by the concerned Staffs, was very good and it reflects the sincerity, kindness, responsible and dutiful of the concerned persons. I like to thank them from the core of my heart. Anyway, in future the period of field school can be increased to gather more knowledge about the related subject matter.

Insights from the Field School and My Research

Now I am writing my pre-doctoral thesis. I think, the experiences from Thai Field School Programme-2010 will help a lot in writing my pre-doctorial thesis. For instance, I along with the other participants of the Field School visited different places of northern Thailand and learned how to gather information from the local people. After finishing the school I went to my own research area in Bangladesh and tried to apply the experiences of the Field School and I think I did it. Another aspect is that, at the end of the field school we participated in a seminar and delivered our own presentation in that seminar. This also will make me well equipped when I will present my own pre-doctorial thesis presentation orally. Above all, this Field School Programme become very helpful for me in my own research

Fig. Citrus Plantation in the Northern Thailand

Fig. *Aman* rice cultivation using irrigation water by shallow water pump

Fig. Harvesting of Shrimp from the *Gher* by the local farmer