CCDRER NEWSLETTER

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Collective Action to reduce climate disaster risks and enhance the resilience of vulnerable coastal communities around the Sundarbans in Bangladesh and India
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Impact on Agriculture

Working Area

This series of interviews was conducted in March 2014 among organic and non-organic farmers in the villages of Brajaballavpur and Debichak in South 24 Parganas. The purpose of the interviews was to assess the effects of climate change on agriculture in the region and document adaptatation strategies that were successfully used by farmers.

Findings / Problems & Awareness of Climate Change

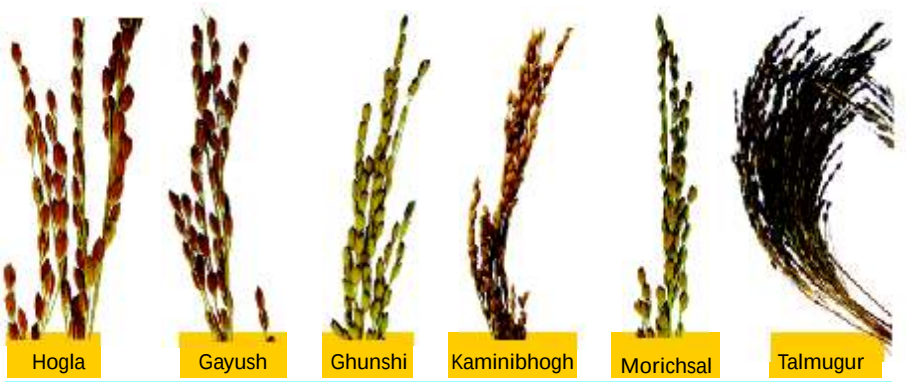
During the course of the interviews, the farmers in each village candidly explained the new problems that they are facing as a result of climate change.

- They described how the traditional six seasons have drastically changed and weather has become increasingly unpredictable with abrupt fluctuations in temperature and precipitation frequency that disrupt the growing process.
- Villagers discussed how sudden cold spells and unexpected torrential rains have ruined entire harvests. These unusual weather patterns are becoming more frequent and the farmers have no way of protecting their crops from such devastating forces.
- The two villages of ineffectual.

Paddy cultivation is one of the primary sources of food in the Sundarbans decreases in yields caused by weather changes threaten food security in the region

Brajaballavpur and Debichak have also had problems with salinity contamination, which is now virtually ubiquitous in this area. The increasing levels of salinity in the soil have rendered many traditional cultivation methods ineffectual.

- A surge in insect pest populations has further complicated the issue of paddy and vegetable agriculture by decreasing yields to a critical level. Farmers and researchers in the region are working to find new coping strategies and combine conventional agricultural practices with newly developed method that will allow them to continue to grow food in these harsh conditions.



Saline tolerant rice varieties

Challenges

In both villages, farmers who have utilized organic and non-organic agricultural methods were interviewed. Many of the farmers in this region who currently embrace organic methods have had some form of training from NGOs that are active in the region. These NGOs employ both educational and practical skill training programs to assist the farmers with soil preparation and pest management. The organic farmers have had increasing success using saline resistant rice varieties and are hopeful that this will continue.

- They still have significant problems with pests but are working to develop organic solutions. However, many farmers in this area employ chemical fertilizers and

DRCSC researcher with a farmer during an interview session in the village of Debichak

pesticides in their agricultural production. These farmers have attempted to cope with changing climate conditions by using hybrid seeds and stronger pesticides.

- They have had a degree of success with their crops, but face a constant struggle to supply adequate nutrition to the growing hybrid seedlings, which require a large quantity of synthetic fertilizers to thrive.
- Both the organic and non-organic farmers interviewed for this project were forthright about the problems they have encountered with chemical contamination in the region.
- They mentioned noticing that many animals, which were exposed to pesticides by ingesting insects or contaminated plants died and certain kinds of cancer are increasing in frequency. As the conditions in this region grow increasingly dire, the issue of current sustenance and survival and the methods utilized to achieve this has compounded the problems of achieving long-term sustainability. Many of the chemical compounds that are being used as pesticides in this region can have a significant negative impact on the human population and biodiversity in the region.

Cultivation of vegetables in repurposed sacks requires little maintence and has increased the availabilty of nutritional food in the region

Current Alternative Approaches & Coping Strategies

The people in the villages of Brajaballavpur and Debichak shared some of the successful adaptation strategies that they have implemented to combat the new challenges they face in the wake of climate change. Salinity contamination is a major issue in these villages that has contributed to a decline in crop yields.

- The inhabitants decided to create several drains to remove salt water from the topsoil when it is brought inland by strong storm winds. This system of drains allows them to remove the contaminated water from the fields in an efficient manner before the soil becomes heavily saturated with the salt.
- The villagers also described how applying natural compost to the topsoil has increased productivity of the soil and reduced the harmful effects of salinity.
- The villagers noted that there have been significant ganic

Grain banks have been introduced in several villages and have sucesfully maintained food security in times of scarcity.

problems with pest increases, which can be devastating to the rice paddies as well as vegetables. The organic farmers have used neem leaf oil and cow urine to address this issue and have seen some success. According to the villagers, applying these compounds to the crops on a consistent basis has proved an effective method of discouraging pests from eating the crops. Unlike more harsh chemical pesticides these compounds do not have as high risk of soil contamination and are relatively innocuous to humans. They do not generally kill the pests, rather they act as a barrier that deters insects from eating the crops because of their bitter and pungent properties.

- To increase crop production the villagers have also applied new, indigenous strategies to boost vegetable yields with limited resources. They have found success with cultivating several kinds of vegetables in recycled sacks, which can be kept near their houses. Growing vegetables in sacks allows the farmers more control over the plants' water intake, exposure to pests, and allows them to protect the plants from salinity contamination.
- The organic farmers are also experimenting with different layouts of plant cultivation and have found that by planting vegetables in circular beds they can maximize yields while using less water.
- The village of Brajaballavpur also mentioned that they were in the process of creating a grain bank that would serve as a means of food security in the event of a stress period.
- Farmers in this region are using SRI methods in Rabi season so that less water is required for rice cultivation.
- Some farmers are also using land shaping techniques to cultivate native varieties of paddy and rear ducks and insect-eating fish in small ponds.
- They also successfully planted local variety of saplings near the riverbank to act as a buffer for storms and prevent further erosion of the bank. This coupled with CPR allows them to get food, fodder, fuel, etc. from the newly-created systems among the trees.

All of the farmers interviewed for this study expressed their desire for more government programs to educate and supply farmers with necessary fertilizers and seeds to continue production in the current conditions. They were particularly adamant about the importance of learning new strategies and getting more varieties of naturally saline resistant crops. The villagers also noted their wish to develop other skills and crafts to supplement their income.

Trellis gardening has been implimented in several villages to increase the production of vegetables

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