

Community based adaptation (CBA) facilitation in South-west Bangladesh

An action pledge to NWP of Satkhira Unnayan Sangstha (SUS), Bangladesh.
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Abstract: South-west coastal Bangladesh is relatively flat and suffers from salinity of soil to differing degrees. Other environmental challenges include tidal surges, cyclones, highly acidic soils in certain areas, water logging in coastal embankments, heavy downpours in the late rainy season, river erosion and unstable atolls. In addition, the area suffers from absent land owners, livestock diseases, poor infrastructure, and poor marketing options due to an insufficient communication infrastructure. In addition to these, a shortage of drinking water and unusable underground water have created barriers to agriculture intensification.

To create awareness among vulnerable communities we have organized community-based meetings and learning sessions, workshops, in-house training and seminars as well as cross visits for the farmers. To learn more about the adaptation options, I have conducted focus group discussions (FGD) at different locations in the district with agriculture and fish farmers, members of the community and local government representatives. I have also reviewed relevant literatures. After conducting FGD and community level consultation meetings we have identified different community-based adaptation (CBA) measures related to intensifying crop cultivation, supplying potable drinking water and increasing household options to respond to climate-induced hazards. After undertaking the latter we promoted following CBA techniques among the villagers, dyke cropping, integrated rice-fish farming, mele (reed) cultivation, pond excavation for irrigation, commercial salt tolerance grass cultivation, cultivating local rice varieties instead of high yielding varieties (HYV), crab farming, the establishment of rain-water harvesters, and flood-proof house preparation (raising the plinth of the house, and homestead ground raising).

The objectives of the action pledge to NWP:

- ❖ To improve understanding and awareness of the south-west community about climate change related variability, extreme events and its impacts on their lives and livelihoods.
- ❖ To facilitate coping mechanisms and enhance the adaptive capacity of the vulnerable groups including people in communities using local adaptation practices.
- ❖ To establish an information sharing mechanism to facilitate learning, the sharing of experiences on community based adaptations, and to undertake advocacy to influence policy and decision making process at local, national & international levels.

Results of our interventions: Awareness, actions and advocacy of climate change issues.

The target coastal community of south-west Bangladesh is aware about climate Change issues:

About 4327 people of different ages and professions have become aware about climate change issues, preparedness and some adaptation options from these interventions. Of these 2655 are rural farmers, 1432 are adolescent girls and 194 have other professions, and include government officers, journalists, school and college teachers and local government representatives. These all attended focus group discussions, cluster meetings, in house training and workshops, day observation events as well as seminars.

Cluster meetings and learning sessions: SUS has conducted 20 learning sessions for an about 427 rural beneficiaries on climate change issues, and has conducted 2 sessions at primary schools with 62 parents of school children and teachers. In addition during micro-finance group meetings a total of 96 groups consisting of 2134 beneficiaries were mobilized on the issues related to global warming, climate change and disasters as well as preparedness issues.



Picture: Participants of the learning session on climate issues at SUS Office.

The workshops on climate issues:



Picture: Workshop on climate change and adaptation needs. The person standing is the reporter of the daily news paper "The Daily Kafela".

On the 20th May 2009, SUS organized a workshop on climate change impacts and needs to promote local adaptation options with more than 70 participants. At the begging of the session the participants were oriented about the Nairobi work programme and the SUS action pledges. A multimedia presentation was also given on global warming, climate change and its

consequences, and types of climate-related

hazards that are frequent in these areas. A multimedia presentation was given to present give ideas on common vulnerability contexts in south-west Bangladesh, and the effects on well-being indicators with examples and pictures. Some pictures of examples of local adaptations were also shown to the participants. Group work was then arranged to discuss relevant coping strategies of rural communities in response to climatic hazards.



Pic: Workshop on climate change impacts & community based adaptation need.

World Environment Day: "Your planet needs you, unite to combat climate change" was the theme for our World Environment Day celebration, To celebrate world environment day, SUS took different programs under the action pledge of the Nairobi work programme to raise awareness among people about climate change and environmental issues as well as to keep them informed about the necessity of promoting local adaptation initiatives for livelihoods security to combat climate change impacts.



Picture: Sk. Eman Ali-Director, SUS speaking as chief guest in the essay, debate & quiz competition.

Essay competition: An essay competition organized on 5th June 2009 with 92 students. One for class six to class eight level of children and another competition for class nine to class ten children. The issue was climate change and its consequences. After the competition a discussion session organized on climate change impacts and how to face the challenges.

Debate and Quiz competition: Two high school level debates and one quiz competition was organized to celebrate world environment day with more than 340 students from class



Picture: Md. Aminul Islam-Head Teacher was the main facilitator in debate & Quiz competition. Focal point person of SUS & Technical Officer (Fisheries) were special guest.

six to ten at two High School in Tala Upazila taking part. For the quiz competition three groups were formed and for the debate competition two groups were formed taking 5 representative students from class six to class ten. To prepare for the quiz competition, we supplied the Bengali version of a seminar paper (It dealt with climate change, its impacts, declarations of different international conferences, climate induced hazards in Bangladesh, and community based adaptation initiatives). The quiz was run by a committee formed by the teachers of the schools and SUS staff. After that a debate competition was organized for the school children.

The issue was "preparedness to combat climate change impacts". After the competition a discussion session was organized to give our message to the children.

Organize Seminar: SUS organized one seminar on climate change and adaptation options with district administration Satkhira with 136 participants i.e., district and sub-district level Government officers, college and school teachers, NGO representatives, Journalists, college and school students, civil society persons, etc on the occasion to celebrate world environment day. The seminar paper was presented by Mr. Palash Kanti Haldar-Program Manager, SUS (Focal point of SUS Nairobi work programme Action Pledge). The title of the paper was "To combat climate



Picture: Md. Abdus Samad-Deputy Commissioner, Satkhira, was Chief Guest. Palash Kanti Haldar of SUS is presenting the seminar paper (Speaker).

change impacts let us promote local adaptation initiatives. The chief guest was Md. Abdus Samad-the Deputy Commissioner of Satkhira and special guests were Mr. Mukesh Chandra Biswas-ADC General, Assistant Conservator of Forest (ACF), Md. Anisur Rahim- Lecturer and editor of local daily news paper, and the Chair Md. Sultan Alam-Upazial Nirbahi Officer. The chief guest highlighted climate change impacts and adaptations options; he mentioned we are the innocent victims of climate change, so we have to prepare for adaptation. The following day's climate change related issues and seminar recommendations were published in the local news paper.

Capacity building workshop and training for the beneficiaries: We have organized 11 batches of training and workshops on CBA for the beneficiaries. Of these 5 batches of training were on dyke cropping and integrated rice-fish cultivation for 126 farmers, 3 batches



of training and workshops were with 56 crab farmers, and 9 batches were on local rice cultivation and homestead gardening for 210 beneficiaries.



Besides these, we have organized many learning sessions and court yard meetings to build the capacity of the beneficiaries.

Promoting Community Based Adaptation (CBA's): Lesson learned:

Reed/mele cultivation (*Cyperus taquetiformus*): During the conduction of FGD in January 2008 and sharing of their learning, the reed (mele) cultivation farmers mentioned that to cope with soil salinization and water logging they have adapted reed cultivation. This reed is a non-



Picture: Gopal mondal-Reed farmer is guiding the day labour for weeding of reed farm.

timber forest product of the Sundarban reserve forest, which the farmers have introduced to their agriculture fields. We have mobilized 390 farmers living in Madra, Dohar, Kalagachi, Kulpota, Muragacha, Horinkhola, Sonabadhal villages of Tala upazila to improve mele cultivation through improving nursing and tending operations. The return from sale of green reed is an amount of tk. 51000/acre of land per year (when measures with cost benefit analysis). The cost benefit ratio is 3: 17, so if farmers invest tk. 9000/acre they can get a return of tk. 51000/acre from green reeds.



Picture: The reed farmers were participated FGD and explored their local knowledge for documentation.

Rice cultivation to cope with floods and draught: A total 138 farmers have cultivated rice after being oriented by SUS about adaptation options. Promoting local (indigenous) rice varieties and time management are the important lessons here that farmers have adapted to cope with flood and draught. This crop adjustment involves adopting flexible period of rice cultivation during the overlapping periods of Kharif-1 & Kharif-2. We have mobilized 124 farmers to cultivate a second block through mobilizing them to follow time management. In these cases, the farmers plant rice seedlings during mid May so that they can harvest rice before the floods (because normally water logging and flooding occur during late August) by following risk management strategies. To manage and maintain time, they prepare seed beds in another area to grow rice seedlings and after the harvesting of summer they cultivate 20/25 days old rice seedlings in the same field. This rice can be harvested during mid-August. The average yield of farmers is 1920 kg per acre of land. Here most of the farmers found to grow BR 28 variety.



Local rice variety cultivation to cope with draught: We have supported 14 farmers to cultivate this draught resistant rice (Katok Tara). During conducting PRA (FGD & seasonal calendar) with the farmers, they mentioned that one local variety i.e., T. Aus cultivation (which is locally called Katok Tara) can grow under aried conditions. In this case, the farmers transplant Aus rice at the beginning of May in relatively high land, because this Aus variety can grow under water stress. It is normally harvested at the end of August. This rice either could be transplanted or could be scattered, if it is transplanted then need to grow rice seedling in seed bed and need irrigation facility at the time of planting rice seedling. The yield per acre varies from 1150-1600 kg but market price of this rice is relatively higher than BR 28.



Pict: Md. Mujibar, village Shahpur, Tala has grown local rice variety (Kotok Tara) in response to draught.

Dyke cropping to cope with water logging and salinity:

We have organized training for 256 farmers on dyke cropping and integrated rice-fish farming. To cope with water logging the farmers have established small fish farms in the coastal areas and during monsoon when they can not grow rice, they can cultivate fresh water fish and prawn though there remains scope to grow vegetables, spices and annual plants on the dykes. SUS has replicated this integrated farming and dyke cropping learned from CARE-RVCC project. Furthermore, SUS has oriented about 2000 farmers about this dyke cropping and set up two demonstration farms. This technique helps to ensure the farmer's income and food security in response to climate



Pict: Dyke cropping of Gourd and cucumbers hanged on rafter made by nylon thread & bamboo sticks.

induced hazards. It should be mentioned here that previously the farmers of these areas were dependent on single crop (Transplanted Aman) cultivation.

Agriculture on raised mound and homestead gardening: Salinity and water stress has created serious threats to agriculture production in south-west coastal community. Due to soil salinity and shrimp farming the homestead soil has changed to a powder form and most of the homesteads are barren. We have oriented around 2000 group beneficiaries to raise their homesteads on mounds. The communities have adapted special mechanisms and raised their homestead to some extent and manage soil in a different way, such as mulching for vegetable growing and selecting salt tolerant varieties.



They utilize rainy seasons for vegetable cultivation and grow some selected species i.e., creeper (Puishak, Jhinge, guard, bitter guard, etc), ladies fingers, chilies, cauliflowers, cabbages, radishes, etc from July to March. They grow salt tolerant tree species like rain trees, babla, khoi babla, tentul, coconut, koroj, khejur, parosh pipul and a few mangrove species with fruit species like sofeda and peyara.

Commercially production of salt tolerant grass: Through our interventions we have mobilized 24 fish farmers to nurture grass for commercial production. We have been able to mobilize 11 farmers who have grown grass in their shrimp farms to cope with high salinity and to supply feed for the cattle. A FGD conducted with the 11 farmers of Katbunia & Hazrakati villages of Tala upazila those introduced commercial production of salt resistant grass (locally called Bajo grass) along the river side of the Salta river. The similar production is found at Shovnali union of Ashashuni upazila. This is not done isolatedly but with shrimp cultivation, where they manage the water level and grow on relatively higher land, with shrimp farms requiring to maintain 6"-10" water. It is found that from 33 decimals of land average and extra return is tk. 7000 to 8000. It is additional income from the shrimp farm and thus an additional income source has been created.



Crab (*Scylla serata*) cultivation: SUS conducted group based capacity building training on crab fattening for 76 micro-finance beneficiaries. Of these a total of 35 beneficiaries adapted crab fattening activities as a livelihood option in response to increased salinity those living in Paikgacha upazila of Khulna district, Tala & Ashashuni upazila under Satkhira district. SUS has introduced crab fattening through the CARE-RVCC project and has been promoting it for the last 6/7 years by helping beneficiaries through technical support and micro-finance loan support. The cost benefit is calculated from the collected average data of seven crab farmers living in



Pic: Ms. Shibani Sarker, vill:- Doakhola, Paikgacha is showing mud crab standing beside the farm.

Ramnagar village of Ashshuni upazila although their farm sizes were different. Here the cost benefit ratio is 1:2.5 and yearly average income was tk. 87,000 from average farm (pond) size 13 decimals.

Rain water storage for drinking: The majority of coastal communities face acute shortages of drinking water due to salinity. To facilitate and promote drinking water availability SUS has supported 98 families in Paikgacha upazila of the Khulna district to establish rain water harvesters with the support of HYSAWA project with NGO Forum Bangladesh and Chandkhali Union Parishad. In addition, SUS also oriented more than 1350 beneficiaries to use safe drinking water and to extract rain water using indigenous techniques. The beneficiaries store water in ponds and extract rain water tanks made by brick and earth pond during the rainy season, and use this water for drinking afterwards. The storage water in the pond is extracted through a pond sand filter (PSF), and direct rain water is stored in earthen pots locally called "Motka" and in the rain water harvesters (RWH).



Picture: One beneficiary of SUS established RHS to extract rainwater.

Demonstrate and promote flood resistant houses: SUS has mobilized more than 400 beneficiary families to establish flood resistant houses on raised mounds and has demonstrated 81 houses by the financial support of Stromme Foundation, Norway. The project beneficiaries of SUS and south-west community have been acquainted with flood resistant houses and homestead ground raising mechanisms as per their needs and requirements. We have found that they are now establishing houses on raised mounds and raising their homestead plinth around our supported families.



Pict.: Beneficiary of SUS is standing in front of a Model of flood house.

Documentation and Publication: Under the action pledge of NWP SUS has been able to develop two documents. The focal point of SUS and Additional Deputy Commissioner-Satkhira have jointly published a document about climate change impacts and its consequence in south-west Bangladesh as well as local adaptation options in response to climate change with some recommendations. The first document has been published in a local newspaper named the daily Patradoot on the 7th July 2009 (www.patradoot.com). In addition, SUS has developed another document on climate change hazard mapping for the Satkhira district with 12 community based adaptations examples in response to climate induced hazards in Satkhira district. The second one will be published very soon. This document will help to increase awareness for the coastal community.

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