

PREPARING FOR
CLIMATIC EXTREMES:
Stories from Noakhali Sadar and Subarnachar

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Situated at the confluence of the Meghna and the Bay of Bengal, Noakhali district is largely influenced by dynamics of erosion and accretion. Both the Meghna River and Bay of Bengal influence the ecosystem and livelihoods of the people of the area.

In this flat, low lying deltaic area, communities are always struggling to face the challenges of nature. They are hopeful and make the best efforts for adaptation to emerging natural calamities.

Location: Bhumiheen Bazaar Khal, Noakhali.
Date: 29th April, 2008.

Photography: Shehzad Chowdhury
Text: Remeen Firoz and Shehzad Chowdhury





Three generations of family members share a similar fate as Maleka Khatun, 69, sits under the open sky on the shores of Noakhali, with her daughter-in-law Rabeya, 25 and her grandchild. They had to leave their ancestral home in Hatiya, which was engulfed by coastal erosion. This is a regular sight in the region, where boats carrying people with tales of lost homes and livelihoods are common.

Location: Bhumiheen Bazaar
Date: 29th April 2008.

The coastline of Bangladesh will be particularly vulnerable to tropical cyclones, which strike the areas periodically, create misery and loss of property and also damages to the ecosystems. The frequency and intensity of such events are anticipated to increase in future because of climate change and climate variation. The predicament of the community will be further aggravated due to sea level rise, affecting the low lying coastal belt. The total area of the coastal belt is about 39,300 sq. km (27 percent of the country's total area) and more than 29 million people (22 percent of the national population) live in this fragile and vulnerable area.

Climate change may also affect the coastal region due to increase in salinity, erosion and accretion, floods and droughts, waterlogging, cyclones and tidal surges, excess rainfall as well as rainfall at unexpected times. Livelihoods of people have been affected through the impacts of climate vulnerabilities on agriculture, fisheries, livestock, shrimp farming, off-farm activities and even the locations of human settlements. Over the centuries, climate variability and extreme weather events have caused death and destruction, loss of resources and livelihoods, which eventually have led them to devise indigenous coping strategies for survival. The practiced coping mechanisms within the communities and their traditional knowledge-base enable them to organize at the community level and manage disasters.

Studies carried out under IUCN-NCAP project indicate that the vulnerability of the people of Noakhali is exacerbated by the natural disasters and their socio-economic status. The challenges posed by water logging, floods, lack of employment opportunities, and ownership pattern of khas (government owned) lands, cyclones, low prices of cultivated crops etc. increase the vulnerability of the small and landless farmers of Noakhali.



above the high tide level. This makes the area prone to multiple hazards.

A woman, Monowara Begum, is shown in a close-up shot. She is wearing a red headscarf with a black and white patterned border, a blue and black patterned shawl, and a red and black patterned top. She has a serious expression and is looking slightly to the left. The background is dark, with a white geometric pattern on the floor. The lighting is dramatic, highlighting her face and the textures of her clothing.

Monowara begum, 45, lives outside the beri bundh (embankment); being regularly exposed to toofan (cyclones) and tidal surges. She is one of the unfortunate members of the landless poor landless poor families of Noakhali, with no permanent dwelling. Will climate change bring in more misery for her?

As 6 year old Sheuli goes to school, one can only hope that her future life will be very different from that of Monowara Begum's.





In general, the area is recognized to be conservative in nature and lags behind rest of the country in terms of educational facilities, basic utilities and access to health care.



These future citizens need to be made aware of the looming days ahead.



Location: Obaidullah Memorial High School

Date: 28th April 2008

Let us build capacity of the coming generation.



ওবায়েদ উল্লাহ মেমোরিয়াল হাই স্কুল

প্রতিষ্ঠাতা: আলহাজ্জ ওয়াহিদ উল্লাহ (বাবু সাহেব)

স্থাপিত: ১৯৭১ খ্রিঃ
সুধারাম, নোয়াখালী

১৯৭১





Multipurpose cyclone shelters can be seen all along the Noakhali region. These school buildings are abode to distressed rural communities during times of disasters such as cyclones and floods. These shelters are built on stilts, designed to allow surges to flow through.





Abul Kashem, formerly a deep-sea fisherman, is now a shopkeeper at the Bhumiheen Bazar at Noakhali. He lost his home and belongings in Hatiya and is striving to rebuild his life in a new environment.



Md. Ajmir used to be a prosperous fisherman in Hatiya, owning of two sea going vessels. He is now almost penniless as both his boats got damaged. He uses the scrap from one of the boats as fuel wood and he does not have resources to repair the other one. For survival, he now catches fish in the inland waters.



Estuarine waters are highly productive and support a healthy stock of fish. In the past, south and southwestern part of the upazila faced the Meghna River estuary and was renowned for fisheries. A large number of fishers from Sadar upazila used to fish in the estuary and beyond and were specialized for fishing in this area. The abundance of fish resources and opportunities in fact created fishermen with unique skills and knowledge. Fishing was a traditional profession, the techniques passed on from one generation to the next. Over time, these indigenous practices have declined, attributable to both the decline in fish stock and mounting population pressures.









Design modifications being made on the boat, as identified by IUCN-NCAP Bangladesh.

The fishers who go to the sea and estuary for fishing are particularly vulnerable to cyclones and storm surges. A large number of people remain missing when there are any devastating cyclones. Every year there are casualties due to boat capsizing by cyclones. The fishers who have migrated to new char (newly accreted land) and settled there are especially vulnerable to cyclones and storm surges.

The poor structural strength of the boats results in the loosening of the bottom planks when the boats hit against submerged char. It happens during low tides when the submerged char rise out of water. The crest of the wave pushes the boat up and the boat comes down very rapidly with the trough. In fact, the shallow water makes the phenomenon more severe as described in marine hydrodynamics. The frequency of these boats being destroyed and damaged has increased during the recent years because of turbulent sea and increased rate of siltation.







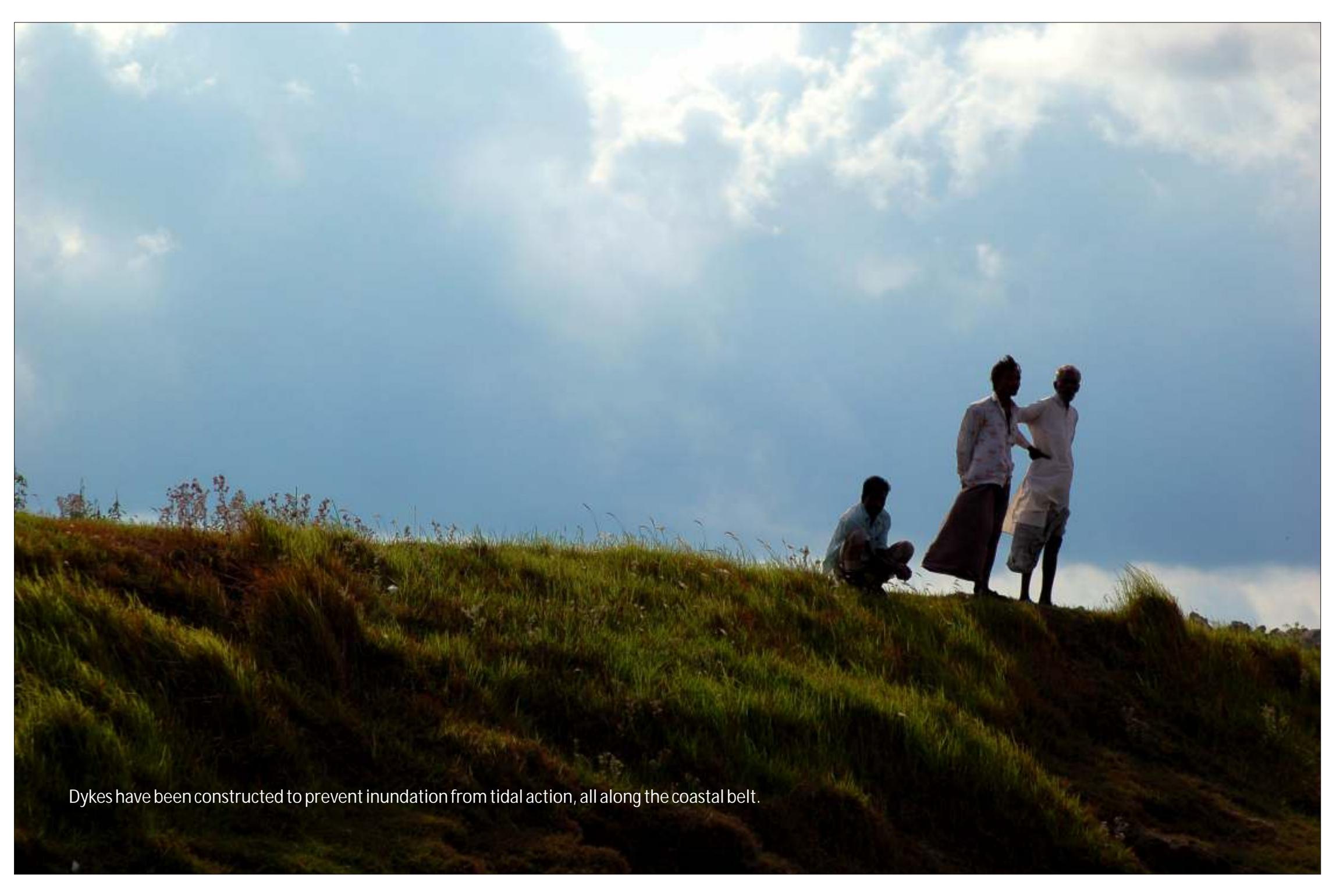


Improvement of the basic design and use of standard material can increase the structural strength of boats and thus reduce accidents caused by wave action and impact against submerged char. Through the IUCN-NCAP project initiative, local carpenters and boat builders have been trained.



Asia Khatun, 51, still dreams of a house that will protect her from the storms and river bank erosion. She left her village Chaulandi in Hatiya and made Subarnachar her home. But without a proper house, she might have to move again, in search of a safe haven.





Dykes have been constructed to prevent inundation from tidal action, all along the coastal belt.



Simulation studies have shown that climate change could result in significant reductions in crop yields and thereby production in most cases. Effect of the changes could vary because of the differences in the crop variety and local differences in growing seasons, cropping pattern etc.

Mohammad Alauddin, 53, from Bhatiateg, Noakhali shows off his yield of red chillies. These farmers have been selecting more salinity tolerant crops, in place of traditionally cultivated rice.







Golap Noor, 31, stands in front of a cyclone proof structure in the making, which is her soon to be home. She has been living outside the beri bundh in a shack with six of her children, making her highly vulnerable to cyclones. Her new house will keep her children safe and secure. .



The poor are especially vulnerable to the vagaries of climate; for low-income households just a strong gust of wind can spell trouble. IUCN recommends strengthening different parts of a rural house that are susceptible to deterioration and weakening by heavy winds, storms and rainwater, especially in a context where incomes only permit less durable building materials necessitating recurrent repair/rebuilding expenditures.





The new demonstration houses with improved structural interventions and minor modifications to house building materials have been erected at a number of pilot sites initially. Locally, masons and carpenters have been trained for replicating this model, which seems to have already gained acceptance from the villagers. More over, the use of local construction materials like bamboo, tin and mud ensures affordability by the poor and vulnerable population.





While the NCAP project proposed a number of structural measures for facilitating adaptation, it also advocated some non-structural interventions, such as awareness creation amongst sea-going fishermen. A training workshop was organized at the local level for fishermen, for enhancing their understanding of cyclone signals and warnings. Radios were also distributed to these extremely vulnerable fishermen, in an attempt to sensitize them and reduce mortality.





Sluice gates regulate the flow of water, thereby controlling salinity in coastal areas. Over the years, these structures have proved to be very effective in fighting sea level rise. Along with adaptation measures, sluice gates and dykes are an essential component in combating the perils of climate change effects.

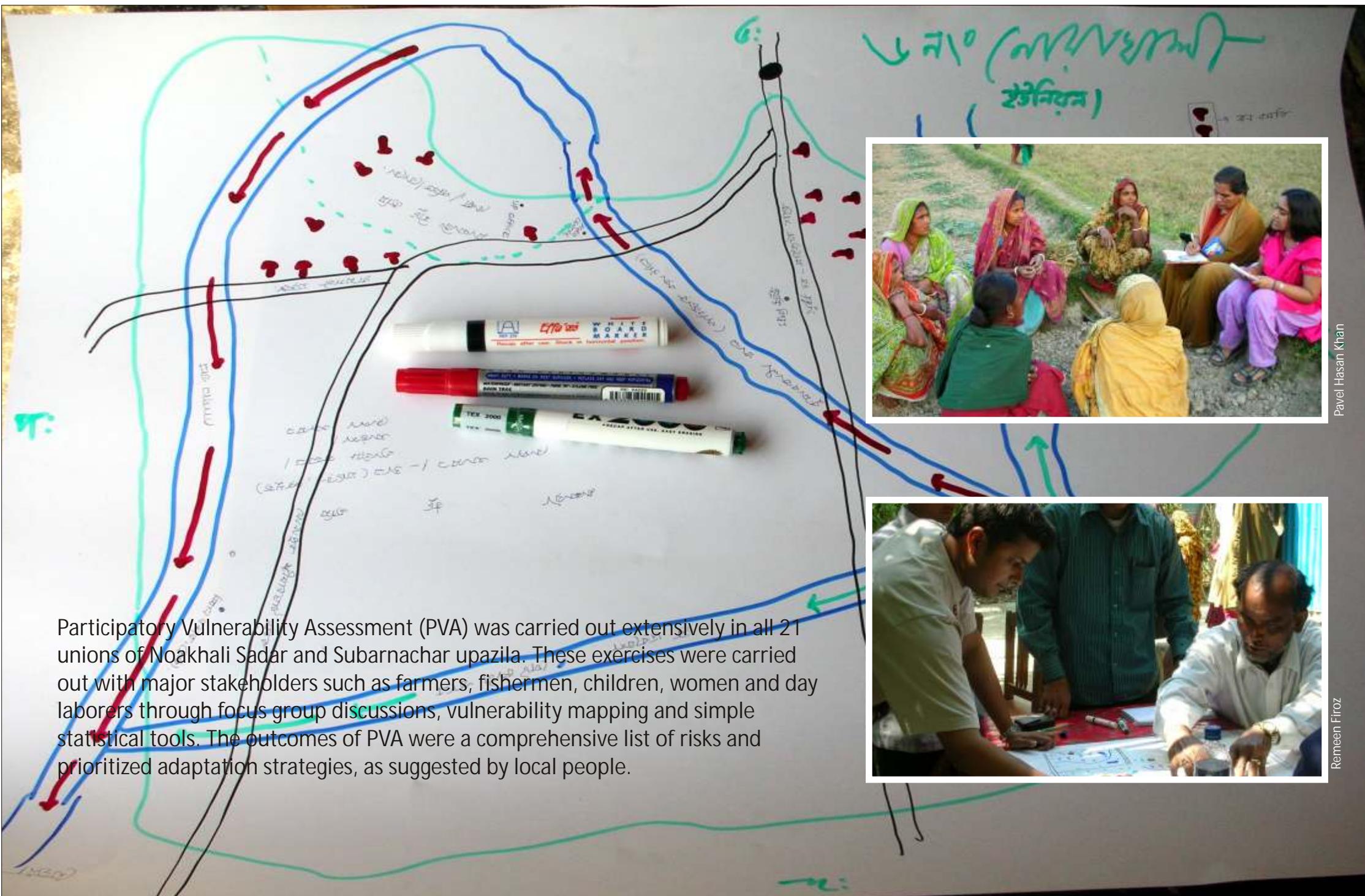


A photograph of a rice field. The foreground is filled with rice plants, some with green leaves and some with golden-brown stalks. In the background, a line of white plastic mulch is visible, stretching across the field. The background is a dense line of green trees.

Although there has been a major shift in agriculture, from rice to vegetable and fruit production, rice is still the staple diet. One of the major interventions proposed by IUCN-NCAP is to address the problems of food security. Towards this, saline tolerant variety of rice, namely BR 47 is being tested at some pilot sites during Aus season, the fallow period from May to August.



Priyanka Bala Das, a student of class 7, helps out her family in the field after her school hours. New crops such as ground nut, soybean, watermelon, chili, lentil, etc. are making an inroad under the changing climatic scenario.



Participatory Vulnerability Assessment (PVA) was carried out extensively in all 21 unions of Noakhali Sadar and Subarnachar upazila. These exercises were carried out with major stakeholders such as farmers, fishermen, children, women and day laborers through focus group discussions, vulnerability mapping and simple statistical tools. The outcomes of PVA were a comprehensive list of risks and prioritized adaptation strategies, as suggested by local people.



Pavel Hasan Khan



Remeen Firoz

Final Workshop on
Promotion of Adaptation to Climate
Change and Climate Variability
Case Studies from Noakhali
11 May 2008
United Nations Program on Climate Change
IUCN

One of the major objectives of IUCN-NCAP project was to sensitize and involve local level administration, especially Union Parishad Members and Chairmen. Towards that, a series of workshops and meetings were held in Noakhali Sadar Upazila. District level government officials were also sensitized in the process. A national workshop was organized to disseminate the experiences of Noakhali.



Mahbubur Rahman Masum

Mahbubur Rahman Masum



Throughout history, the people of Bangladesh have shown their courage and innovation in fighting against all odds and wrath of nature. It is expected that alternative development interventions proposed through the IUCN-NCAP, will fortify people's adaptation strategies and foster a future generation, able to cope with climate change and variability.





To address future uncertainties, interventions have been suggested to promote adaptation and coping strategies. These include demonstration of improved designs of fishing boats and houses, saline tolerant crop varieties, simulation studies and participatory vulnerability assessment exercises. Awareness building and sensitization of the communities and local administration have also been done through training workshops and meetings at the local level.

This pictorial book 'Preparing for anticipated climatic extremes: Stories from Noakhali Sadar and Subarnachar low lying deltaic areas of Bangladesh' has tried to capture the lives and livelihoods of the farmers and fishermen in the NCAP-IUCN project area, along with adaptation measures for current and future changes in climate regime.

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Ainun Nishat, Ph.D
Country Representative





IUCN (International Union for Conservation of Nature)

Founded in 1948, IUCN brings together States, government agencies and a diverse range of non-governmental organizations in a unique world partnership: over 1000 members in all, spread across some 140 countries.

As a Union, IUCN seeks to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable.

IUCN builds on the strengths of its members, networks and partners to enhance their capacity and to support global alliances to safeguard natural resources at local, regional and global levels.

IUCN Bangladesh Country Office established in 1991 has been providing support to the national institutions both government and non-government by advising them on environmental planning and assessment, sustainable management of natural resources, formulation of environmental policies, habitat conservation and restoration, ecosystem and livelihood management, water management, biodiversity conservation, demonstration of knowledge application through pilot interventions, institutional capacity strengthening, environmental education and awareness promotion, environmental law and water and climate change issues.

