

INTERNATIONAL SYMPOSIUM ON CAPACITY BUILDING FOR SUSTAINABLE OCEANS

19-20 JULY 2016 | THE CAPITOL HOTEL TOKYU | TOKYO, JAPAN

SESSION THREE: SCIENCE FOR DECISION MAKING

Photo credit: Nick Hall

Citizen Science Fishermen Network

Southern Bangladesh, near the Bay of Bengal

1) What is the focus of this project?

The Citizen Science Fishermen Network project aims to balance community fishing needs with the need to protect endangered marine megafauna from becoming entangled in fishing gear. This is achieved through: a) improving science-based fisheries management decision making; b) strengthening adaptive fisheries co-management; c) enhancing the socio-ecological resilience of target communities; and d) reinforcing policy, power and incentives related to the Enhanced Coastal Fisheries Theory of Change. Activities are currently focused near the Bay of Bengal, around the towns of Bhola, Kuakata, Pathorghata, Pirojpur and Bagerhat.

2) Which organizations and other partners are involved?

The Wildlife Conservation Society (WCS), which saves wildlife and wild places worldwide through science, conservation action, education, and inspiring people to value nature, is the lead organization. The WCS Bangladesh Program is currently implementing this project with support from USAID/WorldFish under their EcoFish^{BD} project.

3) What activities or tools have proven successful in building capacity?

The following five capacity building related successes have been achieved:

- a. Trained 47 hilsa fishermen from 17 boats on rescuing live entangled cetaceans and turtles, collecting geo-referenced data on their fishing practices, catches and bycatches, and using a GPS to navigate at sea, and then equipped each boat captain with a GPS, illustrated manual for navigation and data collection, simple data sheets in Bengali language and a dolphin carcass sampling kit.
- b. Demonstrated the safety benefits of using a GPS for safe navigation and documented unanticipated benefits when one of the project's top performing hilsa fishing boat captains led a search and rescue effort after an extreme storm along systematic transects using his GPS, which helped him rescue 22 fishermen from almost certain death.
- c. Made detailed plans for data processing and analytical procedures to generate robust spatially explicit bycatch risk models for marine megafauna, and developed a spatial planning framework to optimize hilsa fishery benefits with protecting marine megafauna at risk of extinction from gill net entanglement.

- d. Contributed indirectly to progress through a WCS genetic study on 15 humpback and 17 bottlenose dolphins from Bangladesh (which are both bycatch in the hilsa fishery) indicating that both are significantly different from neighboring populations (clustering in separate phylogenetic clades) and should therefore be considered as taxonomically distinct conservation units.
- e. Made further indirect progress by linking fine-scale information available on marine megafauna distribution and spatial overlap with gill net fisheries in Bangladesh to a geographically more extensive “broad-brush” initiative funded by the US National Oceanic and Atmospheric Administration (NOAA) to develop similar bycatch risk assessments and spatial planning for coastal waters across the rim of the Bay of Bengal.

4) **What challenges have been experienced, specifically related to maintaining a focus on capacity building and/or replicating the project in other areas?**

The first challenge was the short duration of the hilsa fishing season (July-December) and a time closure for hilsa fishing between 25 October to 10 November. Trained fishermen dropping out due to illness, loss of GPSs due to irreparable damage and cyclones, and fishermen being abducted by pirates, were also significant challenges. Plus, although the GPS equipped captains reported significant safety benefits from using this equipment, it does not solve serious problems related to the seaworthiness of their wooden fishing vessels, nor does it help them receive timely weather predictions and respond appropriately.

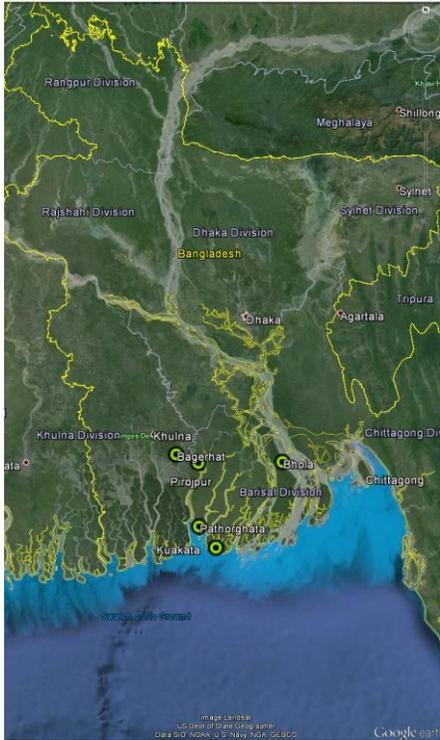
One other challenge encountered during implementation was that fishermen sometimes turned their GPS off to conserve batteries. This meant that their entire track during all fishing trips was not available. Obtaining a complete track of vessel movements is important for understanding the big picture of coastal hilsa fishing practices, including time/fuel spent and routes taken while traveling to and from their fishing grounds and between net sets, as well as for obtaining more accurate data on the drifting path of net sets. For analysis and mapping it was therefore necessary to use the straight line path between deployment and retrieval points, which does not reflect the meanders and changes in direction of the actual net drifting path due to the dynamics of currents and tides.

A specific shortcoming of the project’s educational outreach exhibition was the low number of adult female visitors.

5) **What are the next steps for the project?**

The project is developing by-catch risk models and engaging fishermen and government officials in establishing a decision making framework for marine spatial planning that optimizes the hilsa catch while protecting threatened marine megafauna. The WCS Bangladesh program is also looking forward to working more closely with WorldFish as the Citizen Science Fishermen Safety Network expands to include hilsa fishing communities operating in the estuarine waters of the Padma-Meghna River.

<http://bangladesh.wcs.org/>



Map: Yellow dots are showing the working areas of the project.