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The Second Annual Coastal Forum: Field trip information sheet

Building Resilience to Climate Change Impacts: Coastal Southeast Asia

Bac Lieu Province, Viet Nam

Hosted by GIZ

Background

In 2011, Australia and Germany entered into an expanded partnership programme to support Viet Nam in coping with the impacts of climate change across five provinces in the Mekong Delta region (Bac Lieu, Soc Trang, Ca Mau, Kien Giang and An Giang) and at the national level. This programme is called "Integrated coastal and mangrove protection in the Mekong provinces for the adaptation to climate change (ICMP)/Climate change and coastal ecosystems program (CCCEP)" or in short ICMP/CCCEP.

The ICMP/CCCEP is supporting Viet Nam in managing its coastal ecosystems in order to strengthen the resilience and reduce the vulnerability to expected impacts of climate change to protect the Mekong delta as a living and economic region. Tailored to the particular needs of each province, the programme focuses on four main thematic topics: area management, coastal governance, environmental awareness and sustainable livelihoods. A national-level component is working to develop and implement integrated policies and legal frameworks. The programme integrates and builds on the experiences of three independent GIZ projects which have been active in the Delta since 2007. The ICMP/CCCEP programme is thus providing a practical solution to address a whole range of challenges faced by coastal ecosystems.

In **Bac Lieu Province**, GIZ is implementing the project "Adaptation to Climate Change through the Promotion of Biodiversity", funded by the German Ministry for the Environment, Nature Conservation and Nuclear Safety since 2009.

Key pilot activities include the rehabilitation and diversification of the coastal protective forest in order to increase its resilience to climate change and decrease erosion. Through the implementation of adapted production methods in aquaculture and rice farming and the generation of alternative income opportunities for farmers and landless coastal residents, their dependence on natural resources is reduced. And to ensure sustainability and trigger a habitual change, curricula development for environmental education in schools is supported as well as capacity development for local authorities.

Bac Lieu Province, Viet Nam

Bac Lieu Province is located on the south-eastern coast of the Mekong Delta. It borders Soc Trang Province to the east, Ca Mau to the west, Kien Giang and Can Tho Provinces to the north and the East Sea to the south.

The Mekong Delta with Bac Lieu Province highlighted

The coastline is characterised by a dynamic process of accretion and erosion. In some areas, the loss of land of up to 30 m per year due to erosion has been recorded, while in other areas land created through accretion can reach up to 64 m per year. In a lot of places the coastline is protected from erosion, flooding and storms by a narrow belt of mangrove forests.

Mangroves are the characteristic littoral (intertidal zone) plant formations of tropical and subtropical sheltered coastlines. Mangroves depend on terrestrial and tidal waters for their nourishment, and silt deposits from upland erosion as substrate for support. They provide a wide range of ecosystem services, including carbon sequestration and coastal protection.

Despite their importance for coastal protection, carbon sequestration and livelihood of coastal communities, mangroves are under great threat worldwide. Drivers of change include coastal development, agriculture, aquaculture, tree cutting, river discharge changes and changes in hydrology leading to ground subsidence. Some threats to mangroves will be exasperated by global warming and sea level rise. In such a setting, with overlapping multiple interests of many different stakeholders and natural threats, any adaptive solution requires an integrated multi-sectorial approach, as implemented by the GIZ project “Adaptation to Climate Change through the Promotion of Biodiversity”.

Silvo-Aquaculture

Silvo-aquaculture is an extensive farming method that incorporates mangrove forest in aquaculture ponds. Through cultivation of a species mix, the natural filtering function of the trees and the use of probiotics instead of chemicals, this farming method is environmentally friendly while being less risky than conventional extensive (shrimp-) farming.

Existing silvo-aquaculture farms are often established in the Buffer Zone of the protective mangrove belt along the coast. Due to inappropriate farm techniques, water management problems and lack of capital the (mostly shrimp) cultivation is adherent with risks and subsequent periodical loss of profit.

Mangrove Aquaculture farm in Vin Hau, Bac Lieu

In order to improve the famers’ livelihood while promoting environmentally friendly aquaculture, the GIZ project in cooperation with the Bac Lieu Research Station for Aquaculture (BLESA), piloted a strategy consisting of two tools: the promotion of Best Management Practices for Silvo-aquaculture and the simultaneous establishment and support of Farmer Interest Groups.

The north-eastern coast of Bac Lieu Province: The breakwaters reduce wave power and trigger sedimentation for future rehabilitation. Barren, saline land between the coast and the dyke is being rehabilitated and the hinterland is protected.

Mangrove rehabilitation

To increase the mangrove forest's resilience and capacity to fulfil its functions, the project pilots different rehabilitation methods. Emphasis is put on site specific solutions, as the heterogeneity of the Mekong Delta coastline does not allow for one single mangrove rehabilitation approach.

Mangroves are plants of sheltered coastal areas. If they are to be rehabilitated in wave exposed sites, the eroding forces have to be reduced and sedimentation (floodplain growth) has to be stimulated. To achieve the desired effect and avoid destruction in other areas, any coastal protection measure has to be site specific and designed carefully.

At erosion sites in Bac Lieu and Soc Trang (through the GIZ Project Management of Natural Resources in the Coastal Zone of Soc Trang Province, funded by the German Federal Ministry for Economic Cooperation and Development) T-shaped bamboo breakwaters were installed connecting existing headlands to reduce erosion and trigger sedimentation. Once the protection measures are established, rehabilitation of the degraded forest and planting of pioneer mangrove species on the sedimentation area behind the breakwaters is possible.

Mangrove rehabilitation between bamboo breakwaters in Vinh Trach Dong, Bac Lieu.

What visitors can expect from the field trip

There are 3 main sites that will be visited in Bac Lieu Province -:

- **Silvo-aquaculture** in Vinh Hau Commune: Participants will visit two different farms and get an introduction to the farming system and its benefits. One farm is located in the Buffer Zone of the coastal Mangrove belt in front of the dyke and one in the economic zone behind the dyke.

- **Mangrove rehabilitation** in Vinh Trach Dong Commune: Participants will see multi species Mangrove rehabilitation on barren, elevated, saline land and on a re-established mudflat behind bamboo breakwaters.

- **Erosion control** in Vinh Trach Dong Commune: Participants will visit an erosion site at which T-shaped bamboo breakwaters have been installed.

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Adaptation to Climate Change through the Promotion of Biodiversity in Bac Lieu Province

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