

## **MARINE BIODIVERSITY AND RESOURCE UTILIZATION OF CORAL REEFS AT BAI THUNG**

Bai Thung including two small beaches (Bai Thung and Bai Nho) is a small semi-sheltered embayment located in the north of Da Vach Cape. This location has favourable conditions for formation and development of coral reefs. Recent studies within the framework of UNEP/GEF project entitled "*Demonstration of Sustainable Management of Coral Reef Resources in the Coastal Waters of Ninh Hai District, Ninh Thuan Province, Viet Nam*" in 2011 reported that coral reefs in this location are largely distributed and considered important habitat (Hua Thai Tuyen *et al.*, 2011). With regards to reasons mentioned above, this location is considered as an important place for marine conservation and fisheries sustainability. In order to have a baseline for establishment and management at this location, a comprehensive assessment is considered as a necessary step.

Establishment of a baseline data was conducted through mapping of major marine habitats, assessing status of coral reefs and resource utilization and conservation potentials of Bai Thung. Mapping of major habitats was carried out using available data on distribution of marine habitats surveyed in 2011 (Hua Thai Tuyen *et al.*, 2011) and remote sensing data. Assessment of marine biodiversity was conducted at 1 site located at the north-western side of Bai Thung (11°71'40.4" N & 109°20'11.1" E) in March 2013 following the manual for tropical surveys (English *et al.*, 1997) and reefcheck (Hodgson and Waddell, 1998). Assessments of resource utilization were implemented in March 2013 through a local consultation with involvement of 14 people (fisheries local managers, fishers, buyers and farmers) from Vinh Hy village. Some major results are summarized as the followings:

- Coral reefs are major habitat at Bai Thung embayment, distributed along the shoreline and down to depth of 8 – 15m with a total area of 33.5 ha.

- In total, 61 species (24 genera and 11 families) of hard corals, 71 species (44 genera and 20 families) of reef fishes, 29 species (24 genera and 14 families) of macro-invertebrates (including 12 species of 11 genera and 8 families of molluscs and 10 species of 9 genera and 7 families of echinoderms) were recorded. Most of species found in the coral reefs are not target and commercial species.

- Status of coral reefs were not generally in good conditions with mean cover of hard corals of 18.1%, whereas covers of non-living substrata were relatively high such as coralline algae (9.1%), coral rubble (18.1%) and rock (39.7%). Major associated resources found in coral reefs in this location were mainly small fishes (< 20cm) of damselfishes, wrasses, butterflyfishes and sea urchins (Diadematidae), whereas target fishes with large sizes and macro-invertebrates were heavily harvested with an exception of pencil urchin and turbo snails.

- Fishing is a major activity found at Bai Thung with 7 fishing gears (hookah diving, round lift net, lobster lift net, barrier net, trammel net, purse seine and gleaning of seaweeds) and more than 75 boats, 4 round bamboo boats and 35 gleaners. Major fishing were mainly operated from March-July and November-February. Annual total of catch and revenue were about 326.3 tons and 10 billions VND, of which 156.4 tons and 4.5 billions came from fishes, 121.5 tons and 1.3 billions from seaweeds, 48.0 tons and 3.6 billions from molluscs, 0.3 ton and 0.3 billion from echinoderms.

- Destructive and over-harvested fishing, outbreaks of coral eating predators (COTS and *Drupella* snails) and degradations were major impacts to coral reefs at this location.

Increase of patrolling and enforcement to stop illegal fishing, technique improvement of seaweed harvestation, development of zoning plan for sustainable uses of space and resources, rehabilitation and restoration of degraded reefs, public awareness of local communities and other stakeholders responsible for conservation are considered as important solutions for sustainable uses of marine biodiversity and resources at this location in the future.