

## **Report of Dugong and seagrass survey in Vietnam and Cambodia**

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Ms. Tran Minh Hien, Marine and Coastal Coordinator of WWF Indochina Programme, invited me to assist the Marine and Coastal Programme of WWF Indochina design and set-up a dugong and seagrass habitat research and monitoring project in a few key sites in Vietnam and Cambodia in early July 2002.

The schedule of survey showed in Table 1. The teamwork were:

1. Dr. Ellen Hines from San Francisco State University, USA
2. Mr. Nick Cox from WWF, Vietnam
3. Ms. Kanjana Adulyanukosol, Phuket Marine Biological Center, Thailand
4. Mr. Nguyen Xuan Hoa Institutes of Oceanography, Nhatrang, Vietnam
5. Ms. Hoang Thi To Linh from WWF, Vietnam
6. Mr. Phay Somanya from WWF, Cambodia
7. Mr. Leng Somath from Department of Fisheries, Cambodia

In order to obtain all basic information of dugong and seagrass, we have to interview local fishers and observe the seagrass habitat. Our objectives of these trips in Vietnam and Cambodia were;

1. to interview local fishers about the status of dugong and seagrass
2. to investigate the fishing gear which caused injury to dugong and fishing gears which destroyed to seagrass habitat
3. to survey some seagrass area in order to know the density, species number of seagrasses and the status of seagrass habitat
4. to learn what the people believe in dugong such as the usage of dugong parts or any legend about dugong
5. to learn the opinions of the local people about dugong and seagrass conservation

**Table 1.** Dugong Conservation Project Development Scooping Survey Schedule

Date	Activity	Location	Survey team
Sun 7 <sup>th</sup> July	Arrive HCMC	HCMC	Nick Cox, Ellen Hines and Kanjana Adulyanukosol
Mon 8 <sup>th</sup>	Fly to Phnom Penh	Phnom Penh	As above
Tues 8 <sup>th</sup> – Thurs 9 <sup>th</sup>	Field surveys	Cambodian coast	As above, plus Phay Somany and Leng Somath
Fri 12 <sup>th</sup>	Back to HCMC and on to Vung Tau	HCMC/ Vung Tau	As above, plus Nguyen Xuan Hoa
Sat 13 <sup>th</sup>	Fly to Con Dao	Con Dao Islands	As above
Mon 15 <sup>th</sup>	Back to HCMC	HCMC	As above
Tues 16 <sup>th</sup>	Fly to Phu Quoc – VN481, 0720	Phu Quoc	As above plus Hoaung Thi To Linh (WWF)
Fri 19 <sup>th</sup>	Back to HCMC – VN842, 1105	HCMC	As above
Fri 19 <sup>th</sup> /Sat 20 <sup>th</sup>	Back to Hanoi/ Thailand	Hanoi	As above and Kanjana back to Thailand

**Result****Cambodia**

20 persons from Cambodia have been interviewed for dugong and seagrass information. From Kampot village down to Keb village, 8 species of seagrasses were founded namely; *Enhalus acoroides*, *Halodule uninervis*, *Halodule pinifolia*, *Thalassia hemprichii*, *Cymodocea rotundata*, *Cymodocia seerulata*, *Syringodium isoetifolium*, and *Halophila ovalis*. At present nobody studies on seagrass. Most of interviewed persons know little about how many species of seagrass. But they know that seagrass resources are the good habitats for marine economic species such as fishes, shrimps and crabs.

Trawler operated in seagrass area destroyed seagrasses. Most dugongs died from surrounding net that operated in seagrass area. Some people kept dugong parts such as dry skin, dry penis, skull, bone and rib for luck. Some of them have kept dugong parts over 10 years period. And some of them believed that the bone powder (especially the rib) could cure fever. Dugong teeth may be made necklace. Someone carved the rib to amulet. Dugong oil cured a wound. No legend talks about dugong. Some informed

that the dugong tusks could get high price. Since 1979, all marine creatures decreased including dugong.

### **Vietnam**

20 persons from Con Dao Island and Phu Quoc Island of Vietnam have been interviewed.

**1. Con Dao Island** seems to be good habitat for dugong because it's remote island and the majority areas both on land and in the sea belong to Nation Park. In general, there are regulations of marine park to protect the coral and seagrass resources and marine organisms especially endangered dugong and sea turtle. There might not have big fishing gears operated here such as near shore trawler. Some one said dugong rib can be made the pipe. 9 species of seagreass were reported by Nguyen Xuan Hoa namely; *Enhalus acoroides*, *Halodule uninervis*, *Halodule pinifolia*, *Cymodocia seerulata*, *Thalassia hemprichii*, *Syringodium isoetifolium*, *Halophila ovalis*, *Halophila decipens* and *Halophila minor*. During our survey, we observed that there is very abundance area of *H. ovalis* at Lo Voi Bay. Unfortunately we could see any dugong at Dat Doc Bay during 3 hours observation from the top of the hill.

**2. Phu Quoc Island**, in the past, a large group of dugongs inhabited the waters around this island especially in the east coast from north to south. Abundance seagrasses habitat were observed and 9 species of seagrass were reported by Nguyen Xuan Hoa namely; *Enhalus acoroides*, *Halodule uninervis*, *Halodule pinifolia*, *Cymodocea rotundata*, *Cymodocia seerulata*, *Thalassia hemprichii*, *Syringodium isoetifolium*, *Halophila ovalis*, and *Halophila minor*.

At least in the past there used to be 5-6 dugong hunters in this island. Some dugong hunters were interviewed. They used the special net, string ray gill net, to catch the dugong, green turtle, shark and ray. They used to get 1-2 dugongs per year and sometime they get cow-calf pair. If they got the dugong they could earn a lot of money, every parts of dugong could be sold. Comparing among various parts of dugong, tusk was the most expensive, following by the skin and meat, respectively. They believed that grinding rib could cure fever. The oldest dugong hunter, having 60 years in fishing, decorated the wall of his house with dugong ribs for hanging his hat and shirt. Dugong hunters always kept a pair of tusks for their luck. If they got the longer tusks they would sell the shorter ones. The longer tusk was more expensive than the shorter one.

### **Comment**

It seems to me that Cambodian people has more knowledge about the seagrass ecosystem and the relation between dugong and seagrass habitat than the Vietnamese people. The Cambodian fishermen know that the marine organisms are now decreasing and they care about conservation of coastal resources including dugong and seagrass. Someone said crabs collected from seagrass beds tested better than from other area. Basic questions are to reduce or ban the near shore trawler (operate in seagrass area) and ban the surrounding net operated in seagrass beds. In general, local people has poor education, we need to educate them especially on the coastal conservation and management. The officers also play an important role for the dugong and seagrass conservation.

Most of Vietnamese fishermen don't care about dugong, sea turtle, and seagrass conservation. They said if they either kill or didn't kill the dugongs, there is still dugong in the sea. Some said for the turtles, they lay a lot of eggs and many hatchlings in the sea, so they don't believe that turtle will become extinct.

One serious problem as we have seen is the great numbers of green turtle shells were sold at Vung Tau village. Salesman informed that many new shells came often from Con Dao Island and most customers were foreigners i.e. Taiwanese. During our survey in Phu Quoc we met a middleman, who's carrying an alive green turtle (76 kg in weight) to the market. He informed us he got about 20 green turtles per month. There is one shell factory produces the souvenirs made from hawksbill turtle including turtle shells in Phu Quoc Island. A fact that the sea turtles are the world population, some tagged turtles from Thailand also migrate to feeding ground in Vietnamese waters. It's urgent to conserve the sea turtle in Vietnam.

It's urgent in Vietnam to educate people about the conservation of endangered dugong and sea turtle. And the officers and government should put more effort for marine endangered species conservation including seagrass, mangrove and coral reef.