

Legal framework for Mangrove Forest  
Carbon Payments for Ecosystem Services  
in Viet Nam – A case study of Xuan Thuy  
National Park, Giao Thuy district, Nam  
Dinh province

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## 1. BACKGROUND

Mangroves have been well known for their provisions of different environmental services such as climate change regulation through carbon sequestration, buffer the impacts of storms, provide habitat for a variety of food resources and bird species, control coastal erosion, mitigate water pollutants, sediment retention, nutrient cycling (Farley *et al.*, 1997, Costanza *et al.*, 1997). Not only mangroves offer the ecosystem services, they are able to provide high economic income from fishery and aquaculture cultivation. Despite of these importance, the area of mangroves has reduced dramatically worldwide mainly due to overexploitation, conversion of land- use and water pollution which weaken the coastal ecosystem services.

In Vietnam, the area of mangrove forest in Vietnam has declined dramatically due to urbanizations and aquaculture production<sup>1</sup>. The Vietnam Sea and Islands General Department in Ministry of Natural Resources and Environment has alerted for measures to preserve and develop mangrove forests in order to prevent environmental pollution as well as climate change mitigation at the beginning of 2009 but there are limited responses to this. The National Action Plan for Climate Change also addressed the importance of mangroves forest and emphasizes the need to preserve them in the future but lack of detailed actions and approaches are proposed.

The challenge for reserving the remaining mangroves forests is to balance between local livelihood and environmental protection as mangrove forests are often the income source of coastal inhabitants. Balancing between commercial and environmental benefits requires an integrated approach and economic tool and mechanism. Given the expected strength and advantages of being able to provide the right incentives for the right providers and buyers, payment for environmental services (PES) and potentially REDD are proposed to be possible mechanism for mangrove protection. However, before forest carbon projects– that is, payments to rights-holders in return for increasing forest biomass or reducing deforestation and degradation beyond business as usual – can be tested in the mangrove context, some clarity is needed in terms of the legal, policy and regulatory frameworks that govern these areas.

Using Xuan Thuy National Park (XTNP) as a case study, this report reveals major differences between the law as written and as applied in terms of tenure and natural resource use and management. It also discusses potential opportunities and risks for a mangrove forest carbon project in that location, given the laws, regulations, and customary and traditional practices identified in the analysis.

The study employed a wide range of research methods. Secondary data on management plans XTNP and Nam Dinh provinces related to mangrove were collected and analysed. A four days site visit was also conducted during 12 – 15 May 2010 (see Annex 1 for detailed agenda). During this visit, two consultation workshops (one with National Park Management Board and one with representative of village and commune leaders and representative of existing projects in the site) were held to obtain stakeholders' perception on current and future mangrove management practices and plans in the areas. Discussions were formulated around the opportunities

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<sup>1</sup> <http://www.wrm.org.uy/bulletin/51/Vietnam.html>

for and constraints to mangrove protection and management in the area. There were five key informants attended in the first meeting and there were 25 people attended the second one.

Nine in-depth interviews were also conducted (1 with DONRE representative, 2 with representatives of XTNP management boards, 2 with stakeholders working in XTNP and 4 with local households). The interviews aimed to explore issues related to mangrove management of the area.

## 2. OVERVIEW ABOUT THE MANGROVE AREA

Xuan Thuy National Park (XTNP) was formally Xuan Thuy Nature Reserve which was established by Official Letter 4893/KGVX of the government of Vietnam in 1994. In 1988, it was designated as a Ramsar Site by the Bureau of the Convention on Wetlands of International Importance (Ramsar Convention) and was revised from nature reserve to national park, following Decision No. 01/TTg of the Prime Minister, dated 2 January 2003. XTNP is now also included as part of the Red River Delta World Biosphere Heritage Site by UNESCO.

The Park is located in Giao Thuy district, Nam Dinh province (about 150 km south east of Hanoi). The National Park and its buffer zones cover an area of c.15,000 ha. Of this area, 7,100 ha is core zone which consists of 3,100 ha of dry land and 4,000 ha inundated land. The core zone was divided into three functional zones (Table 1). The buffer zone (c. 8,000 ha) is under administrative area of five communes namely Giao Hai, Giao Xuan, Giao Lac, Giao An and Giao Thien<sup>2</sup>. According to Le Thi Van Hue (2004), the mud flats outside the Bai Trong sea dyke and along Giao Xuan, Giao An, and Giao Lac communes were all covered by mangrove forests.

**Table 1 – Zonation of XTNP**

<i>Functional Zone</i>	<i>Area (ha)</i>	<i>Bai Trong</i>	<i>Ngan Island</i>	<i>Lu Island</i>	<i>Xanh Island</i>	<i>Total</i>
Strictly-protected Zone			930	2602	2634	<b>6,166</b>
Ecological Rehabilitation Zone			338	578		<b>916</b>
Administrative/Service Zone		10	16	2		<b>28</b>
<b>Total</b>		<b>10</b>	<b>1,284</b>	<b>3,182</b>	<b>2,634</b>	<b>7,110</b>

*\*Notes: 10 additional hectares were taken from the buffer zone to develop the Park's Administrative/Service Zone (Nguyen Huy Thang, 2004).*

The Park is situated in the coastal zone of the Red River Delta, at the mouth of the main channel of the Red River, known as the Ba Lat river. The site comprises three islands and intervening intertidal mudflats. Ngan Island consists mainly of aquacultural ponds, most of which contain mangrove. Lu Island consists of a large sandy area, as well as coastal marshes and a small area of aquacultural ponds. Xanh Island, the smallest, is a thin sandy island, which is still increasing in size as a result of deposition of sediment carried by the Red River. The total area of mangrove forest in the core zone accounts for 25% of total area while the total area of mangrove forest accounts for 22% of the buffer zone area (Table 2).

<sup>2</sup> According to Decision 01/2003/QĐ-TTg

**Table 2. Area of mangrove forest in the core zone and buffer zone in XTNP (Unit:ha)**

	<b>Total area of mangrove</b>	<b>Total area</b>
<b>Core zone</b>		
Ngan Island	644	1284
Lu Island	1118	3182
Xanh Island	NA	2634
<b>Total</b>	<b>1762</b>	<b>7100</b>
<b>Buffer zone</b>		
5 buffer zone communes	NA	4276,0
Bai Trong	844,0	2764,0
Ngan island	880,0	960,0
<b>Total</b>	<b>1724,0</b>	<b>8000,0</b>

**Source:** Dang Thang Long 2004.

Natural mangroves are dominated by *Bruguiera gymnorrhiza* and *Kandelia candel*, particularly on alluvial soils where there is 80–85% land coverage with trees 2–3 m tall. *Sonneratia caseolaris* is widely scattered, the trees mainly 3–4, but up to 5 m tall and 5–8 cm in diameter. In places, the mangrove includes *S. caseolaris*, *B. gymnorrhiza*, *Aegiceras corniculatum*, *K. candel* and *Acanthus ilicifolius*, with the latter growing thickly at the margins. *Phragmites vallatoria* grows in large clumps in aquacultural ponds, sometimes with *B. gymnorrhiza* and *A. corniculatum* away from alluvial soils (Nguyen Duc Tu *et al.* 2006).

The dike system in Giao Thuy is 30,2km but only 10.5km of the dike was protected by 3,100 ha of mangrove forest. The total area of protection mangrove forest outside sea dike is 3100ha along 11km along the dike, the smallest area is 0.5km and the largest area is 3.5km (Vu and Tran 2008).

### **3. DRIVERS OF DEGRADATION OR CONVERSION OF MANGROVES IN THE AREA**

The mangrove forest coverage in XTNP has changed rapidly since 1960 due to both natural and anthropogenic causes (Le Thi Thu Van 2004, Béland *et al.* 2006). The stakeholders interviewed and those attended two consultation workshops claimed that (i) population pressure, (ii) intensive shrimp aquaculture in both core zone and buffer zone area, (iii) cattle raising and (iv) natural disaster/climate change have been the key drivers for mangrove deforestation and degradation.

#### **3.1 High population pressure**

In 2004, 46585 people (11,556 households) lived in the five buffer zone communities surrounding XTNP at a density of 1,206 people/km<sup>2</sup> (Table 3). The core zone and buffer zone with a large area of mangrove forests in it have played an important role in supporting local livelihood. The major economic activity in the buffer zone is agriculture with almost 80% of the labourers involved in crop production (mainly rice) and livestock grazing. There are limited off-farm activities and local livelihood strategies mainly derived from the exploitation of marine and wetland resources.

In their spare time, many of these people enter the core and buffer zone areas of the park for fishing, to collect shellfish and work for aquacultural pond owners during the algae harvesting season.

**Table 3 . Population and population density in XTNP buffer zone**

No.	Communes	Area (ha)	HHs	Village	Population (people)	Density (people/km <sup>2</sup> )
1	Giao Thien	993.5	2,346	14	10,088	1,023
2	Giao An	821.3	2,522	22	9,807	1,180
3	Giao Lac	740.7	2,315	22	9,986	1,331
4	Giao Xuan	757.7	2,598	10	9,985	1,291
5	Giao Hai	555.4	1,775	18	6,779	1,207
	<b>Buffer Zone</b>	<b>3,868.6</b>	<b>11,556</b>	<b>86</b>	<b>46,585</b>	<b>1,206</b>

Source: Tran Hieu Minh 2004.

High population also puts a great pressure on resources available in the area. Before 2002, mangrove was the main source to supply local need of firewood hence a large area of mangrove was cut down for this purpose. However, since 2002, all stakeholders interviewed claimed that the local demand for firewood has been reduced thanks to the access of electricity and other forms of cooking stoves. While the demand for firewood has been reduced, the mangrove areas were seriously degraded due to high population pressure with its consequences of increasing daily waste discharge (households wastes) and industrial residue (pesticides and fertilisers).

### **3.2 Intensive aquaculture farming in both core zone and buffer zone**

The steady intensification of aquaculture in the area has increased the rate of deforestation and degradation of mangrove forest in the area. From 1986 to 1998, the area of mangrove forest in the area reduced by 71.4% while the area of aquaculture pond increased by 660.9% (Centre for Resource and Environment Studies-CRES, 2002 cited in Dao *et al.* 2008). These aquaculture ponds were established during 1993 – 1994 and have reached its largest development during 1999 when these areas were put for bidding. There are a total of 1,800 ha of aquacultural ponds, mainly around Bai Trong and Ngan Island in the park's buffer zone producing mainly shrimp, crabs, algae and fish (RAMSAR information sheet of XTNP 2009). The major type of aquaculture in the area is extensive and semi-natural ponds. Three types of aquaculture production which have impacted mangroves in the area including:

#### **(i) Fishing and fish ponds**

During 1960 – 1975, stakeholders interviewed claimed that 80% to 90% of local people engaged in fishing activities. However, their products were sold at cheap price so many people gave up this occupation. During 1978- 1979, many people restarted their fishing activities and District People's Committee allowed cutting a large area of mangrove for fish gearing. The percentage of mangrove converted to fish ponds from 1986 to 2000 in XTNP is nearly 50 % (Chau 2007). There is still a large area of fish ponds in XTNP but stakeholders attended the workshop expressed their concerns about the increasing use of dynamite and electricity in fishing activities.

### **(ii) *Shrimp ponds***

The loss of mangrove forest area caused by shrimp aquaculture expansion has been widely recognized as an environmental issue (Boyd 2002, Hempel *et al.* 2002, Lebel *et al.* 2002, EJV 2003 cited in Béland *et al.* 2006). In XTNP, land accretion by sedimentation at the mouth of the river contributes to natural regeneration of the mangrove, while loss of mangrove forest area mainly due to construction of shrimp ponds (Béland *et al.* 2006). 63% of mangrove areas apparent in 1986 had been replaced by shrimp ponds in 2001 (Béland *et al.* 2006). By 2008, there are 4 shrimp ponds in the core zone with the size of 56 ha and about 135 ha in Ngan Island - all of these ponds were established before the establishment of the XTNP (XTNP 2007a, Dao *et al.* 2008). Not only a large area of mangrove was cleared because of shrimp ponds construction, intensive use of antibiotics in shrimp ponds leads to residues of antibiotics in water and mud and further degraded the remaining mangrove area (Le *et al.* 2005 cited in Chau 2007). In 2006, CORIN supported an environmental impacts assessment study on impact of shrimp ponds on the area. The findings of this study clearly show negative impacts of shrimp farming on mangrove forests and water quality. However, according to a representative of XTNP management board, there is a challenge to convince people to change their current practices because of high economic return of this activity.

### **(iii) *Clam collection***

There are many people collecting shellfish on the intertidal mudflats in the area. According to stakeholders and households interviewed, in the peak season, there are around 500- 600 people, most of them are women and the poor collect clam everyday.

The collection of requires flat areas with very few or no mangrove plants. Collectors often remove young plants if needed, resulting in destruction of pioneer mangrove communities along the coast. In the longer term, fewer mangroves can be natural regenerated in the intertidal area. The degradation is more severe when collector density increases.

### **(iv) *Meretrix clam production***

Since 2004, the high economic value of clam production has attract not only local people but also people from other province and district to illegally use the land and set up their farm to harvest these resources. In the high season (May to July every year), thousands of people and hundreds of means (boats and floats) participate in the sea product exploitation activities in the Xuan Thuy Area. This type of activities is sometimes out of control that caused the security disorders and lead to the exhaustion of the natural resources (XTNP 2007a).

Over 600 ha in the south end of Lu and Ngan Islands were fenced by the local people for planting of *Meretrix* clam (there are more than 400 fenced plantations). Of this, 400 ha is situated inside the core zone of the park. Recently, there is a large area of shrimp ponds was converted to clam larva raising grounds by bumping of sand into the ponds that caused the mass mortality of mangrove trees. These activities also require large equipments and machines causing serious impact on waterway and mudflat areas.

### **3.3. Cattle raising**

Cattle raising has been one of traditional practice of local people around the National Park. This practice has been established before the establishment of XTNP. The stakeholders interviewed pointed out that before 2007, farmers grazed over 500 buffaloes and 200 goats freely, which eat away at the mangrove forests and destroyed seedlings of mangrove forests in the area. Representatives of the XTNP asserted that natural regeneration rate of mangrove have been very low in the last few years because of this destruction. However, since 2007, with support of WAP and CORIN project, people have been assisted in finding alternative income (e.g. forming mushroom clubs), local people stopped grazing in the core zone area of the XTNP.

### **3.4. Natural disasters and climate change**

Natural disasters such as floods and storms have reduced a large area of mangrove in the area. Particular in 2005, most of mangrove forest has been cleared out after numerous intensive storms in August (XTNP 2006).

## **4. CURRENT AND PLANNED MANGROVE PRESERVATION ACTIVITIES**

Part of the Ramsar convention on biodiversity, the Xuan Thuy National Reserve was created in 1995 to protect the mangrove forest, which is an important habitat for migrating birds (Béland *et al.* 2006). A large area of mangrove forests were also planted under national program Program 327 and international support (e.g. Danish Red Cross project).

Between 1986 and 1992, 440 ha of adult mangrove trees had disappeared, whereas the mangrove extent increased by 441 ha between 1992 and 2001. This recovery is attributed to reforestation projects and conservation efforts that promoted natural regeneration (Béland *et al.* 2006).

The number of projects support mangrove preservation activities in Xuan Thuy has increased over time. These projects either take mangrove preservation as their primary goal or take it as one of the project components (The list of these projects is presented in Annex 2). This report does not intend to all projects but only mentions those that were discussed and highly appreciated by stakeholders during the interviews and site visit. Each of those will be discussed in the following.

Until this point, it's not clear to the reader how the park is managed. You may want to provide a bit information on how the park is governed, taking into account of MB, provincial and district PC? DARD and DONRE? – these are institutional issues you may want to look at.

Oh, I've just looked at the remaining sections, you have institutional analysis in sections 6-8. May be it is better to bring these sections up front.

#### ***(i) Danish mangrove forest plantation project (1997 – 2002)***

Before 1990, funding for mangrove reforestation in the area mainly comes from Vietnamese government. However, the stakeholders argued that the most prominent

conservation efforts were sponsored by Danish Red Cross to reforest mangrove in Nam Dinh Province since 1997. The project aimed to increase the extent of mangrove forest on district forest land and to reduce the vulnerability of local populations to natural disasters such as typhoons and flooding. Mangrove forests form a protective barrier that lessens the intensity of the waves and hence help to reduce their impact on population health and the environment (Béland *et al.* 2006). In this project, Red-cross pays farmers to harvest seeds and plant them out within the plantation area. The areas covered by mature mangrove increased 441 ha during 1992 and 2001 thanks to this project (Béland *et al.* 2006 cited in Chau 2007).

Since 2006, the project funding stopped and DONRE has provided its funding for forest protection through 661 programme. The project completed in 2005 but there has not been any document to transfer the management responsibilities so the current mangrove area under this project has “no manager” at this stage. Funding from 661 but this fund will stop in 2010. XTNP and the heads of villages in all buffer zone communes are discussing alternative funding mechanisms after this fund is stopped.

**(ii) Pilot program for sustainable use of aquaculture production in XTNP**

As mentioned earlier (see Section 3.2.), a large area of mangrove forest were degraded and removed from both the core zone and buffer zone due to intensive aquaculture production activities. Although this problem is well-recognised by all stakeholders, the economic benefits put the effort of mangrove protection and preservation in a difficult context. To address the issue, the XTNP management board, DARD and Giao Thuy District PC, proposed a pilot program on sustainable use of clam production from 2004 – 2006. On 7 March 2006, MARD issued Official Document No. 511/BNN-KL to allow the local communities to exploit the natural *Meretrix* clam larvae in the Red River Mouth area. The document also required a participatory plan for this exploitation that involved all relevant agencies in district and province to submit MARD for peer review before submitting Nam Dinh PPC for its approval in accordance to current legislation. In March 2006, XTNP Management Board in collaboration with functional sections of Nam Dinh DARD and Giao Thuy District prepared a project for Community Participatory in Management and Exploitation of the *Meretrix* Clam Larva Resources of the Wetlands in the Red River Estuary inside the Core Zone of Xuan Thuy National Park (XTNP 2006).

This project emphasises that while the core zone is strictly protected from intensive use, in the buffer zone, where aquaculture is allowed as long as certain good practices are employed, for example maintaining mangrove trees inside the ponds. The project also set up regulation for co-management among XTNP management board, local councils and clam farmers initiated by XTNP in 2006. The guideline/regulation clearly defined responsibilities and benefits of each stakeholder as the local harvest and culture clams on over 1,000 hectares of the mud-flat in the core zone of the park. As a result, clams were harvested under control (at appropriate times and areas) to preserve the shellfish resources while local people can continue to exploit and generate good income from wetlands resources and contribute to a management fund (through paying tax). Now, this co-management guideline has become a case study for other natural reserve sites in Vietnam and proved to the National Government

possibility to mitigate laws regarding to sustainable management of natural resources based on wise use and good livelihood practices of the local people (MONRE 2008).

***(iii) Wetland co-management project in XTNP***

A co-management guideline was developed by XTNP in cooperation with other institutions and communes in terms of aquatic resource collection and mangrove conservation. This project is established based on the request of local people, communes, and National Park. According to an interviewee, the need to have co-management activities in the park has been considered as urgent issue and was proposed to be implemented 6 months ago. However, due to limited staff number and the workload that the XTNP has to cover, this program was delayed until now.

Similarly to the sustainable use of aquaculture practice, the XTNP management is seeking for a sustainable management practices that benefits both conservation activities and livelihood strategies of the local people. The XTNP management is current drafting the regulations and conducting consultations with the heads of villages around the Park. CORIN/WAP and XTNP management is currently carrying out a piloting program on co-management of mangrove in Giao An commune.

***(iv) Mushroom production as an alternative livelihood for farmers in Vietnam's<sup>3</sup>***

As discussed in section 3.3. above, cattle raising is one of causes destructing the mangrove area in XTNP. To address the problem, XTNP and a group of farmers have given support by CORIN-Asia to find alternative sources of income from mushroom production to reduce pressure on the park and the mangrove areas. CORIN-Asia in coordination with XTNP officials, Department of Natural Resources and Environment (DoNRE) of Nam Dinh and vocational training center of Nghia Hung district provided trainings and study tours to the farmers on mushroom production. The household's interviewees and representative of XTNP claimed that the current supply of mushroom currently cannot meet the local market demand. CORIN in collaboration with other research institutes are working on branding the products and register the brand name in the national system. At the beginning, the club was formed with 4 -5 people. The number of current households participating in the project has increased to more than 70 people. The interviewee of representative project claimed that the challenge does not lie on how to involve more people in the project but how to make the existing members take the ownership of the project. They were worried about the sustainability of the project once the funding is stopped.

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<sup>3</sup> Further details can be obtained as <http://corinasiavietnam.org/en/Default.aspx?task=29&T=18ab0a3866434525bc54&aid=16&Ts=viewNews&type=Articles>

## 5. LIKELY COSTS AND OPPORTUNITY COSTS OF ENGAGING IN MANGROVE PRESERVATION

### 5.1. Economic evaluation of mangrove forest in the area studied

The economic value of mangrove forest in the area includes direct value and indirect values. Direct value includes forestry products including firewood, aquaculture production, medical plants, honey, and ecotourism. Indirect value include ecotourism and environmental services (Table 1)

**Table 4: Direct and indirect value of mangroves in XTNP area**

Values	Low value		High value	
	Estimated value (VND)	USD	Estimated value (VND)	USD
<i>Direct value</i>				
Timber	103.620	6.77	108.200	7.07
Firewood	85.500	5.39	86.400	5.65
Aquaculture production	13.500.000	882.35	15.000.000	980.39
Marine resources	2.640.000	172.55	2.860.000	186.93
Honey bee	112.000	7.32	132.000	8.63
Medical plants	15.600	1.02	18.500	1.21
<i>Indirect value</i>				
Tourism	12.000	0.78	15.000	0.98
Stabilise micro climate, improve air quality, water and minimise sea level raising	15.100.000	986.93	16.400.000	1.071,90
<b>Total value</b>	<b>31.565.720</b>	<b>2.063,12</b>	<b>34.620.100</b>	<b>2.262,75</b>

Source: Vietnam's Environment Protection Agency, 2005

With the current calculation, the total indirect value (environmental protection) of mangrove in XTNP area is lower than total direct value of mangrove (e.g. agriculture and aquaculture production). Another assessment of economic evaluation of costs and benefits of mangrove reforestation particularly the role of mangrove forest in reducing storms and sea level and climate change conducted by Dao et al. 2008 also find the similar findings. This study found that direct use of mangrove forest (timbers, firewood, aquaculture production, honey bee collection) was 1.660USD/ha/năm. Indirect value (avoided costs for dike maintenance and avoided consequences due to storms and natural disaster due to sea level was 195, 95 USD/ha/year. According to this study the total economic value of mangrove forest is 1.855,95USD/ha/year (Dao et al. 2008).

### 5.2. Costs of mangrove preservation

There are currently 2 figures available for the costs of mangrove preservation in the area. Both figures were calculated based on damage cost avoided for dike repair and maintenance as well as avoided consequences due to storms and natural disaster due to sea level. The first study conducted by Dao et al. 2008 released the figure of 195, 95 USD/ha/year. The second figure came out of a study named "Forest pricing in Vietnam" implemented by Research Centre for Forest Ecology and Environment

(RCFEE) of the Forest Science Institute of Vietnam (FSIV). The research results indicated that an area of 3.100 ha of mangrove forests can annually save about 2 billions VND in term of costs for repair and maintenance of this sea dyke system. On average value of 1 hectare of mangrove forests for sea dyke protection is about 633.000VND (35.2USD) per annum (Vu and Tran 2008). The two figures are slightly different because the first figure also includes the avoided consequences due to flood and storm and avoided cost for dike maintenance while the second figure only focuses on avoided costs for dike maintenance.

### **5.3. Opportunity cost**

REDD scheme can only be realistic and viable if its level of payment can cover the opportunities that bring to people. However, in the case of XTNP, the high value of both direct and indirect value of mangrove (see table 4) as well as the high opportunity costs identified by local people make the schemes difficult to implement in practice.

The opportunity cost for mangrove protection can be seen from two main sources (i) labour cost and labour time people have to trade off for mangrove preservation and protection activities and (ii) forgone economic return

#### ***(i) Labour cost and labour time***

Interviewee claimed that to protect the forests, people will have to visit the site daily. However, according to all stakeholders interviewed, the current payment for mangrove forest in the area either is zero in 4 communes (except Giao An which has the funding from 611 program) and 100.000VND/hecta/year in Giao An cannot cover the opportunities costs that the local people have to make the trade – off.

For small and poor households, since they do not have capital and land, they either have to work as labour for other wealthy households in the village or collect clams and conduct fishing in a small scale. According to local authorities and households interviewed, each day a shellfish collector can earn 100.000VND/day and those who do the dynamite fishing can earn up to 60.000 to 120.000/day while they have to work hard for the whole year to protect the mangrove to earn 100.000VND/day. Therefore, the local people are not interested in preserving the mangrove.

#### ***(v) High income from aquaculture production***

During 2004 - 2005, local communities earned 7-8 billion VND from selling *Meretrix lusoria* and *Meretrix lyrata* (XTNP 2007). Stakeholders interviewed also claimed that each household can earn up to 2-3 billions VND/month for clam selling and 295 – 300 millions VND for shrimp selling in the last few years. Aquatic resource collection contributes an average of 8 million VND per year (about 550 USD) for the household which is higher than the average income from rice farming (about 400 USD), but lower compared to boat fishing and shrimp farming (about 2,000 USD).

All stakeholders attended the workshop and those interviewed agreed that the opportunity costs for mangrove forest protection and preservation is high and the current payment for mangrove protection and preservation cannot cover such costs.

## 6. STAKEHOLDERS AND THEIR PRACTICE, RIGHTS AND POWER IN THE PROJECT AREA

Stakeholders in the area can be classified into the following groups:

### 6.1 Resources owners and managers

According to the Land Law (2003), the state represents its citizens to manage the land. To carry out this task, the State has assigned this job to its government agencies.

#### *6.1.1. Primary resource managers<sup>4</sup> identified in the area including:*

***Nam Dinh People's Committee:*** Article 2 of the Decision No. 01/2003/QĐ-TTg, dated 2 January 2003, on upgrading Xuan Thuy Wetland Nature Reserve to Xuan Thuy National Park, Prime Minister prescribed “Assign the Nam Dinh PPC to manage Xuan Thuy National Park, direct the preparation and submission the investment plans for the park and its buffer zone, and to develop eco-tourism in the park in accordance to current legislation (To Van Thao 2004).”

***Xuan Thuy National Park:*** According to Decision 872/2003/QĐ-UBND dated 24/4/2003 of Nam Dinh People's Committee, XTNP has the responsibility to manage the whole NP area. XTNP is now under the management of Nam Dinh Provincial People's Committee. On 20 October 2003, a new investment plan for Xuan Thuy National Park was approved by decision No. 2669/QĐ-UB of Nam Dinh Provincial People's Committee. The national park management board currently has six members of staff based at the headquarters. The management board is under the management of Nam Dinh Provincial Department of Agriculture and Rural Development (DARD).

***Provincial Department of Agriculture and Rural Development (DARD):*** is assigned by PPC to directly manage XTNP. DARD supervises and directs the XTNP on its technical, scientific activities as well as manages personnel, staff salary and payment. Direct the establishment of Forest Protection Unit within XTNP according to Decision No. 1859/2003/QĐ-UB dated 11 July 2003 of the Nam Dinh PPC on the establishment of the Xuan Thuy National Park's Forest Protection Unit. DARD is also the focal point to report to PPC as well as Central agencies and international agencies on implementation of government conservation and development planning and plans for XTNP. Advice for District People's committee on production planning and development Responsible for develop projects and programs, protect for sustainable use of aquaculture resources. Develop models of forestry- marine practices.

***Giao Thuy District People's Committee:*** is the administrative manager for XTNP. Has the responsibility to work closely with the XTNP on disseminate and educate people in the core zone and buffer zone on importance of environment and the need to comply with environmental policies. Direct all technical departments in the district

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<sup>4</sup> In this report, we define primary resources managers as organisations/agencies which act as the key drivers and shaper of natural resources management in the area.

and People's Committees of buffer zone communes to manage activities to protect and preserve environment. It also needs to support XTNP to manage its core zone area, monitors and assign commune to conduct detail land use planning, manage production, evaluate land use, collect land renting fee.

**Provincial of Department of Natural Resources and Environment (DONRE):** advises PPC on protection and management of natural resources in XTNP. In collaboration with Provincial Interior Department in identifying the boundaries of XTNP and administrative boundaries of buffer zone communes. Conduct planning and issue mapping and zoning for sustainable use of natural resources within the XTNP. Support the conservation and protection and sustainable use of wetland resources.

**Commune District People's Committee:** Have administrative management role in mudflat area. In the buffer zone: direct conduct landuse planning, manage production, evaluate land use, collect land renting fee.

The XTNP management and Forest Protection Units in the area used to be two separated units. However, by the end of this year, the Director of XTNP will also be the Director of Forest Protection Unit. He will establish his own Forest Protection Unit in the National Park and the power of the Park will be increase. Staff working from previous Forest Protection Units will be transferred to work in either district or province unit.

#### **6.1.2. Secondary resources managers<sup>5</sup> identified in the area including:**

**Provincial department of Culture and Tourism:** Develop planning activities for tourism activities within the National Park.

**Xuan Thuy National Park's Forest Protection Unit:** established under the Decision No. 1859/2003/QĐ-UB, dated 11 July 2003 of the Nam Dinh PPC. The functions and responsibilities of the Unit was prescribed as per Law of Forest Protection and Development (2005), Prime Minister's Decree No. 08/2001/NĐ-CP on sustainable use forest management, Decision No. 17/2004/QĐ-CP on administrative treatment in the field of forest management and protection, and Decision No. 09/2006/NĐ-CP on forest fire prevention.

**Police, Army and Military:** will need to work closely with DARD and XTNP Management Board to ensure the security in the area.

**Mass organisation:** Father Front Land, Farmers Association and Women Union need to closely work with other stakeholders on dissemination information on environment protection activities in the region.

Although there are many government agencies with different working in the same area and have different tasks and functions, their operation and collaboration are

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<sup>5</sup> In this report, we define the secondary resources managers are those who not directly make any decision to management of resources but often in collaboration or back up the primary resources management in their management practices.

governed by PPC by Decision No. 1892 /QĐ-UBND, dated 11/08/ 2006 of Nam Dinh PPC which will be briefly discussed in the following:

- DARD also led the collaboration between XTNP and other technical departments in the province to solve issues within XTNP. DARD also in collaboration with Giao Thuy District People's Committee to establish, implements activities to ensure the effective implementation of activities within XTNP.
- The Management board of XTNP has the responsibility to report to Giao Thuy District People's Committee and other Provincial Department on emerging issues related to the Park and will in collaboration with these department to solve the problem
- Provincial department of Culture and Tourism will need to work in collaboration with Giao Thuy District PC and XTNP Management board to organise and manage ecotourism activities in XTNP.
- Police, Army and Military: will need to work closely with DARD and XTNP Management Board to ensure the security in the area.
- Mass organisation: Father Front Land, Farmers Association and Women Union need to closely work with other stakeholders on dissemination information on environment protection activities in the region.

## **6.2. Resources users**

Local people and private sector have involved in natural sources utilisation in the area. These resources users can be individuals, households, self-formed group and business enterprise. Between 1960 – 1964, collective aquaculture pond was established. After 1988, old collective ponds were put for public bids for use rights by household groups.

## **6.3. Resources management support groups (projects and programs)**

There have been a large number of programs and projects supporting conservation of XTNP in general and mangrove in particular in the area (Annex 2).

## **6.4. Rights of stakeholders, duration, heritability and transferability of these rights**

Regarding to the land tenure/ownership, the core-zone of National Park is under management of the XTNP management board. While the rest including large areas of aquacultural lands and water faces are under management of the Giao Thuy District People's Committee. Some areas of mudflats site are now allocated to the local households for shellfish farming.

All the surrounding areas (buffer zone communes) are under management of the Giao Thuy District People's Committee. In pursuance to the Instruction No. 364/CP dated 6 November 1991, the administrative boundaries of the coastal communes of Giao Thuy District limited beyond national sea dikes, only it of Giao Thien commune was demarked to the Vop River. The rest are mud- and sandy-flats are now under management of Giao Thuy DPC. In 2003, Giao Thuy DPC temporarily assigned the administrative jurisdiction upon the alluvial flats for 9 coastal communes, which included 5 buffer zone communes of the XTNP. This practice therefore expanded the buffer zone of the park to include the temporary land jurisdiction of the 5 communes.

The landuse master planning of buffer zone communes in 2010 included the changes in comparison to 2004 plan, namely, the forestry land was increased by 30 ha due to the landuse category change from islands and sandy flats to forestry land for mangrove plantation (FIPI 2004).

The Commune PCs are now managing the mangroves but have no forest ownership. The reason is in according to the Prime Minister's Decision No. 245/1998/QĐ-TTg dated 21 December 1998 on implementation of state management of forests and forestry lands of administrative levels and the Article 6 of the Decree No. 123/2006/NĐ-CP dated 3 March 2006 on implementation of the Law of Forest Protection and Management. The Commune PCs are temporarily responsible for management of forest lands which is not leased or allocated by the Government.

The Commune PCs are responsible to prepare the plans for forest allocation and lease to submit for the approval of relevant state agencies and landuse plans for the use of areas which is not yet leased or allocated by the Government to submit the District PCs. Thus, the rights of each type of forest owners are varied depend on the specific ownership and allocated/leased forest types. The forest owners are guaranteed by the Government upon their legal rights and benefits, including the benefits from Carbon services.

*For agricultural land:* Following the governmental instructions, each labour can own 1.2 Tonkin “Sao” of rice field (or c. 430 m<sup>2</sup>). In XTNP buffer zone, there is a total of 373 Sao of paddies were allocated for 362 labours (or only 1 Sao for a labour) because of the parents have to share the lands for their children when they established the new households (XTNP and WAP 2007).

*For aquaculture pond:* The land tenure of aquacultural ponds are now belonging to the pond-owners who had to buy from other individuals or organisations (who held the landuse contracts) with the price of c. VND 200 million per ha per year (upon 20 years contract started from 1993). Over the time, the pond tenure ownership is changing with the change of household participation (Dao *et al.* 2008). Mangrove habitats, although intensively used by dwellers commonly have no defined property rights (Adger and Lutrell 2000) and are often considered as a convenient location for the construction of low investment ponds that use tidal movements for required water exchange instead of mechanical means such as pumps (or trucks) Béland *et al.* (2006).

*For forest land:* under the current legislations, the organisations, households and individuals who receive the contracts for forest land allocation or lease from government, and the communities which receive land allocation for long-term forestry landuse purposes are recognised by the law as “forest owners”.

### **6.5. Conflicting interests in the land or the natural resources or rights that are inconsistent with contemplated payments for ecosystem services**

A critical requirement for PES is to have a clear tenure over the mangrove forest and mangrove area. However, the situation in XTNP is complex.

### **6.5.1. Customary rights-holders that may have legal interests in the area**

The XTNP is the owner of National Park core zone area which is prohibited from all destructive and livelihood generation activities. However, as discussed area aquaculture production and cattle raising have been traditional practices in this area and existed before the establishment of the Nature reserve (Nguyễn Huy Thắng 2004, XTNP 2007a). This creates a tense conflict between the National Park and the local communities over the resources use and management. In addition, the high economic return from these activities also makes the management and protection of the core zone become a challenge.

### **6.5.2. Confusion or dispute over rights in the area, and mechanisms for clarifying this confusion resolving the dispute(s)**

#### **(i) Who is the real owner of mangrove forests in the buffer zone?**

While it is clear that XTNP management board is the owner and manager of all mangrove forests within its core zone, all forests in the buffer zone do not have the real managers. In principle, all forests in the buffer zone are under management of

The District People Committee and the communes only have the administrative manage role over these forests. The fact that the commune's people committee supposed to be grassroots management level of the forests but are not granted the management role make the forests in the buffer zone under "no manager". In addition, although XTNP buffer zone area contains of 8000 ha but due to economic development, the local authorities allow to use 30% of total area to carry out aquaculture production, shrimp farming (Dao *et al.* 2008). All stakeholders claimed that the mangrove forest protection and preservation activities are difficult to implement in this context and suggested that the district should delegate this management role to the communes so that the communes both administrative and management role over these forests.

#### **(ii) Co-managers over the marine resources**

Given history of the area and the high economic benefits the wetland area can provide to local communities, all stakeholders asserted that there is a need to have co-management regimes which share the rights and responsibilities of all stakeholders in both the core zone and buffer zone area. To address this issue, XTNP Management Board in collaboration with fishery sector to prepare a plan for conservation and sustainable exploitation of the *Meretrix* clam larva resource in accordance to the Prime Minister's Decision No. 131/2004/QĐ-TTg dated 16/7/2004 on "approval of a programme for protection and development of the fishery resources to 2010". According to this programme, XTNP will identify the suitable areas for the seasonal lease of surface water for clam larva exploitation. Revenue from the lease will serve for natural resource management work of XTNP management board (c. 15%), operational of a management board for clam larva exploitation (c. 5%), and to the local state treasure (80%) (XTNP 2007).

There is a need of establishment a permanent demarcation system, and preparation an environment sound management protocol for the fixed aquacultural ponds and clam plantation. The local governments will help XTNP management board to manage

fixed aquacultural production areas. Revenue from fees for the aquacultural production will be paid to XTNP (30%) and to the local government (70%) (Dang Quang Thuyen 2004).

**(iii) Differences in ability to benefit from payments for ecosystem services between stakeholders (potential conflict)**

To protect the forests within the core zone area, all government and donors findings will be channelled directly to the XTNP management board. It is the responsibility of the XTNP management to manage this budget and contract households to protect the forests in the area. The level of payment will need to follow the governmental cost norms and guidelines but as it has been discussed earlier that it has not been an attractive source for local people.

To protect the forests in the buffer zone area, the current payment from 661 programs is currently transferred to the commune people committees. According to the interviewees, in principle, this money will need to pay for those who protect the forest including (i) commune forest protection self-formed group<sup>6</sup> and (ii) households who are allocated forests to protect. In practice, the stakeholders interviewed claimed that since the budget is very small, this money is currently only shared amongst the commune forest protection self- formed group and is not paid to any households in the area. This can potentially create a conflict between these groups if the payment mechanism is not transparent.

All stakeholders interviewed also identified possible unbalances of rights and benefit distribution. 60% of the heads of the villages claimed that the benefits generated from aquaculture production mainly benefit the wealthy groups. These groups often obtain a large area of land and have the capital to transfer land to others. The local people can convert a small area of land but the wealthy can convert a large area for another purpose. When the payment is made to mangrove protectors groups, this payment might only benefit the wealthy groups while it would be difficult for the poor and small households to participate in the schemes.

## **7. STAKEHOLDER CAPACITY**

There are different and even contradict views of related stakeholders on the understanding of rights and responsibilities under the law.

**Resources users:** The XTNP Management board and 50% of heads of villages attended the consultation workshop claimed that the resources users do not have a good understanding of their rights and responsibilities towards environment protection law compliance, hence they continue their destruction activities. An interview from a project in XTNP also argued that most local people cannot distinguish between the core zone and buffer zone so they did not see the need to stop or reduce their activities in the core zone area. In contrast, 50% of heads of villages attended the consultation workshops disagree on these views. They asserted that many

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<sup>6</sup> This group is often formed by members of commune management board and commune policies.

awareness raising campaigns and programs have been carried out in the area and this has improved understanding of local people significantly on their rights and responsibilities under the law. Moreover, a representative of Giao An commune also highlighted that since 1932, the Article 2 in the commune's "huong uoc" already prohibited people to cut down the mangrove and any violators had to pay a high fine by the head of the village.

However, due to high economic returns, although they understand, they cannot comply with. In addition, interviewees also highlighted that many households in the area understand that aquaculture production might cause negative impacts on the area and only generate benefits for the first few years only; it is generation's belief that it is not the right things to stop this practice. They are not interested to change into other practices.

**Resources managers and owners:** Not only some local communities have limited understanding about environmental laws and their rights and responsibilities, local authorities and government agencies also have weaknesses. XTNP management board claimed that although the Forest Protection Unit was established in the area of the Park, this Unit did not have a good understanding of their management areas and forest classification. Most of the work carried out mainly by the XTNP staff not this Unit. Interview with the representative of DONRE also indicate the limited understanding of mangrove ecosystem and forest classification amongst the staff at DONRE.

The stakeholders also emphasises that at the macro level, the lacking long-term and scientific planning has led to irrationality in conserving and developing natural resources. Destructing newly-planted mangrove forests for shrimp-farming is an example that how weak planning would result in massive destruction of resources in the future (MONRE 2008). All stakeholders attended the consultation workshops also highlight the limited understanding of PES and REDD which make it is difficult for them to participate in program design, implementation and monitoring.

## **8. APPLICATION OF LEGAL AND INSTITUTIONAL FRAMEWORKS TO THE MANGROVE AREA**

### **8.1. Areas of overlap over jurisdiction**

According to Decree No. 109/2003/NĐ-CP dated 23/9/2003 of Government of conservation and sustainable exploitation of the wetlands and The Minister of Natural Resources and Environment (MONRE)'s Decision No. 04/2004/QĐ-BTNMT dated 5 April 2004 on approval of an Action Plan for Wetland Conservation and Sustainable Development for the 2004-2010 on a mechanism for inter-sectoral coordination in conservation and sustainable development of the wetlands, MARD and its provincial department (DARD) are responsible for managing forest ecosystems and marine protected areas while MONRE/its provincial DONRE is responsible for establishing and managing wetland protected areas (wetland ecosystems). However, these ecosystems are always co-existing in a protected area like XTNP so there is a confusion in terms of management responsibilities for MARD/DARD, MONRE/DONRE and XTNP Management Board.

In addition, MONRE/DONRE is responsible for administrative management forestry land while MARD/DARD is responsible for forest management – forests are seen as products and the resources in the land. This creates challenges for collaboration and coordination amongst sectors and ministries in developing landuse planning develop forest development and protection planning, forestry land allocation, issuing landuse rights. For example, DONRE is responsible for issuing land use rights for those who are allocated forestry land. However, if there is forest in the land, they need to certify forest use rights. In other words, in the landuse right certificate and catastrophic documents has to contains information on forest type, forest status, forest area etc. This requires close collaboration between DARD and DONRE.

Furthermore, both DARD and DONRE have monitored land planning and allocation and forestry land inventory but their figures have never reach to an agreement. Interviewee with National Park staff pointed out this is not because of different methods applied but because each agencies used different source of data. He argued that currently there is no field work measurement and both agencies used remote sensing and GIS to monitor and change of forest. However, these set of data might be produced by different years and different providers so the data did not match. The data from different projects which were reported to the agencies were also different so very confusing.

The recent establishment of Vietnam Administration of Seas and Islands (VASI) at the central ministry (MONRE) and current reviews for future establishment of its provincial units are central debate of stakeholders in the site investigated. According to the DONRE representative, mangrove forests in XTNP area are critical important for Seas and Islands protection. Therefore, all mangrove belonged to DARD before but will be soon transferred DONRE for its management. In other words, any management decision over these mangrove forests should be come from DONRE mainly. Before this transfer, DONRE supported the land planning and land allocation process and DARD was responsible for planting and protecting trees. This change according to DONRE will have no impact because DONRE will manage mangrove as assets and properties of island while DARD will continue to support for tree plantation and protection. Since both DARD and DONRE will play a role, the carbon rights between these two partners should be decided by PPC as DARD and DONRE are just to hands of PPC groups. They need to follow this arrangements. DONRE did hear about the carbon credit but did not see it is practical and have not heard about actual case on the ground.

Different from the view of DONRE, stakeholders interviewed claimed that although DONRE has a broader mission and vision compared with DARD, they do not have staff at all level like DARD does, and therefore, their capacity to enforce law would be limited. In addition, the current interest of donors to fund REDD in Vietnam is to use the Forest Protection and Development Fund as the formal mechanism. However, DONRE has limited understanding about Forest Protection and Development Fund and believe that whatever the arrangement of this Fund should be decided by the Provincial People Committee.

I think you should bring PPC and district back in. They are very much keen on economic development thus (and probably) contradiction between conservation and development. This has direct implications for a REDD project.

And any particularity about institutional and power relationships of DARD/DONRE/PCC/DPC, MB?

## **8.2. Gaps or areas of uncertainty**

The establishment and the management plans of XTNP are under the following international and national regulations:

- Ramsar Management Regulation also serves as the basic and master management plan for the whole national park
- The Park is included in the list of special use forest under MARD decision. According to government Decree 08, this will need to be prohibited from any landscape changes, cattle raising, introduction of invasive plants and animal species
- IUCN guidelines (2000) for protected area on reduce human intervention and changes to landscape
- Prime Minister's Decree 25/2009/NĐ-CP dated 6 March 2009 on integrated marine and island resources and environment: Government have to issue the policies to protect coastal environment, secure sustainable livelihood and socio-economic development, monitor the coastal changes, assess status, forecast the trends of changes etc. and to identify and locate the coastal sites of high vulnerability such as alluvium flats, erosion coastlines, sandy-flats, coastal protection forests and coastal wetlands to propose and adopt of appropriate management and protection solutions.
- Decree No. 249/QĐ-TTg dated 10 February 2010 on approval of the project on development of environmental services to 2020: to prepare a strategy for development of environmental services to 2020 and vision to 2030, develop and strengthen a legislation framework for development of environmental services in Vietnam, propose to develop a network of of environmental service business.
- MARD Project on Mangrove forest restoration and development for the period of 2008-2015 in the context of climate change and the awareness enhancement on mangrove forest restoration and development for climate change mitigation and adaptation. The project aims to expand the total area of mangrove from 209,741 ha to 307.295 ha in 2015. The solutions focus on furtherance the land allocation for the local communities for production, plantation and protection.

However, the current activities in XTNP (e.g. clam production, shrimp ponds) conflicted with the requirements of international regulations such as RAMSAR as well as national development strategies (XTNP 2007, Dao *et al.* 2008). The interviewees of XTNP claimed that how to harmonise the need of local people and conservation goals as well as harmonise multiple objectives of different international regulations and agreements is a challenge for the national park.

### **8.3. Compliance with the law**

There is no doubt that the XTNP management board has put a great effort in preserving and protecting the mangrove area. However, as discussed earlier, their compliance with the law is limited because of the following reason:

***Weak and unclear management authorities.*** In addition, the wetland area of XTNP includes the buffer zone area which is under management of different authorities and agencies but there is no focal point which has management power over the resources. This leads to poor management of the resources and illegal exploitation of wetland resources cannot be controlled (XTNP 2007).

***High economic return of wetland resources creating difficulties in minimising human impacts on available resources.*** The opportunity costs and the economic benefits generated from exploiting wetland resources are too high. This not only makes the conservation efforts and payments ineffective to the local people but also poses great challenges for the XTNP management board to preserve the resources.

***Limited capacity and findings for mangrove protection and preservation.*** Limited number of staff and funding for mangrove protection also affect the implementation of law on the ground.

### **8.4. Legal and institutional capacity**

#### ***(i) Governmental or institutional resources for mangrove management***

MONRE/DONRE, MARD/DARD, XTNP management boards and commune people committee are the key government agencies in governing mangrove management. Both ministries are allocated certain budget for their operation and management activities. However, the overlap in functions and responsibility between MONRE/DONRE and MARD/DARD both at central and local level confused the local stakeholders on actual implementation of the law on the ground.

#### ***(ii) Capacity of central or local governments to enforce contractual or legal obligations***

All stakeholders interviewed claimed that the capacity of local government to enforce legal obligations has been strengthened thanks to trainings provided by donors and government. However, at the local level, the commune leaders also expressed their concerns about the fact the leaders in district and communes also have the ponds in the area and the commune cannot enforce the rules to these groups. These groups also issued different documents to allow aquaculture activities and the communes cannot against it.

#### ***(iii) Governmental or institutional capacity for project monitoring and verification***

There are different views on contract and law enforcement. All heads of the villages argued that the current fine system is not strong enough so people are not afraid of violating the laws. They suggested that those who violate the law will have to pay high fine and even should be put in jail. However, the national park suggests that it is often difficult for the Park and the Heads of the village to do so because most of violators are their friends and communities members where they live. They suggested

that informing the violations in the community radio system so that violators feel to be ashamed of their actions is more effective in this context.

The heads the village also claimed that the monitoring capacity of both XTNP and the local authorities is limited. They often know the violation when it has already occurred. Also, it is difficult for the National Park to ensure that the people who are allocated land implement what they are allowed to do.

*(iv) Accessibility of dispute resolution mechanisms*

All stakeholders interviewed claimed that the violation often occur in all communes. There is leakage identified that when a commune stopped one activities, people move to other communes to log down the forests. At the moment, each commune has to manage the problems themselves and the commune PC does not have the power to resolve the conflicts. Therefore, they proposed for cross-commune management board. The District People's Committee will lead the boards and XTNP management board and the head of the communes will work closely to resolve any conflicts and violation in the area.

## **9. Conclusion**

XTNP has a great potential for development of a REDD scheme due to the ecological importance of mangrove in protecting the local livelihood and reduce natural disasters in the region. However, for the REDD scheme to work in XTNP, institutional barriers (e.g. overlapping in functions and responsibilities amongst governmental agencies, unclear owners of the forests) should be addressed. Given the high opportunity costs the local people have to make a trade off for mangrove protection and preservation, the level of REDD schemes will need considered to cover such costs. It is suggested that the direct payment (by cash) cannot cover such costs. Therefore, combining direct payment and indirect payment (e.g. sharing the rights and responsibilities for local communities over the resources management) is suggested as a future approach for designing benefit sharing mechanism for REDD schemes. The current capacity of local authorities on legal and contract monitoring is limited and further trainings to strengthen these capacities would help potetial REDD schemes sustainable.

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**Annex 1: Working agenda**

<b>Day</b>		<b>Activities</b>
12 May	Am	<ul style="list-style-type: none"><li>• Travel from Hanoi to Nam Dinh Province</li><li>• Interview DONRE representative</li></ul>
	Pm	<ul style="list-style-type: none"><li>• Travel from Nam Dinh Province to XTNP, Giao Thuy District</li><li>• Interview one representative of XTNP Management Board</li></ul>
13 May	Am	<ul style="list-style-type: none"><li>• Consultation meeting with the head of villages and communes</li></ul>
	PM	<ul style="list-style-type: none"><li>• Consultation meeting with the XTNP management board</li><li>• Interview XTNP Director</li></ul>
14 May	AM	<ul style="list-style-type: none"><li>• Interview two representatives of Wetland Alliance Program and CORIN Asia</li></ul>
	PM	<ul style="list-style-type: none"><li>• Site visit to Giao Thien commune</li><li>• Interview two households living in mangrove areas in Giao Thien commune</li></ul>
15 May	AM	<ul style="list-style-type: none"><li>• Site visit to Giao An commune</li><li>• Interview two households living in mangrove areas in Giao An commune</li></ul>
	PM	<ul style="list-style-type: none"><li>• Travel from XTNP, Giao Thuy District to Hanoi</li></ul>

## Annex 2: Some programs and projects in the study area

<b>Project name</b>	<b>Donors/implementer</b>	<b>Objectives</b>
Conservation of Important Bird Areas in Asia - Follow-up actions for IBAs in Vietnam and Timor-Leste 2005- 2006	Birdlife International Funded by Keidanren Nature Conservation Fund with 50.000USD	Review Coastal IBAs establishment and strengthen of IBA Site Support Groups in Xuan Thuy and Tien Hai
A two-year project on “community-based ecotourism development in Giao Xuan commune, buffer zone of Xuan Thuy National Park” during 2006 - 2007	The Centre for Marinelife Conservation and Community Development (MCD). An amount of US \$100,000 funded by the European Union and McKnight Foundation.	Strengthen capacity for community and other relevant bodies through developing an eco-tourism model in Giao Xuan Commune.
Project: Management and sustainable use of fishery resources at Xuan Thuy Ramsar Site		
Project: Integrated Coastal Management	VN-ICZM (Integrated Coastal Management in Nam Dinh province) to implement co-operative coastal management programme ( CCP ) funded by Netherlands Government Nam Dinh DONRE	Complete the management plan for XTNP Training for technical staff on utilisation of GIS on resource and environment protection
Project: Capacity building for Xuan Thuy National Park	Funded by Royal Netherlands Embassy From Sep. 1998 to Oct. 1999, budget: USD 33,000	Capacity building for Xuan Thuy National Park Management Board Awareness raising in buffer zone to gradually decrease pressures on natural resources in the park.
Strengthening Community Support for Conservation at Xuan Thuy National Park in 2005	Birdlife International funded by US Ambassador Fund with 20.000USD	Strengthen the capacity of the SSG at Xuan Thuy in 3 main aspects: (1) participation in the overall natural resource management and land-use planning at the local levels (commune and district); (2) planning and implementation of conservation actions, such as conservation awareness raising, conservation threat

		reduction monitoring, and actions to reduce threats to biodiversity loss; and (3) working towards self-sustainability.
Project: Awareness raising and support local communities to conserve biodiversity in Xuan Thuy Ramsar Site	GEF-UNDP: USD 18,000 (from Oct. 1999 to March 2001) implemented by the Giao Thuy's District Farmer Association to collaborate with Xuan Thuy Nature Reserve	