

**The People's Committee of Kien Giang Province
Phu Quoc National Park**

**Ecotourism Development Strategy
of The Phu Quoc National Park, Kien Giang Province**
(Final draft)

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Abbreviations

PQNP: Phu Quoc national park

WAR : Wildlife At Risk

IUCN : International Union for Conservation of Nature and Natural Resources.

NĐ32 : Decree No 32/2006/NĐ-CP dated 30 March, 2006 of Government.

SDVN: Vietnamese Red Book.

Sub-FIPI II: Sub Institute of Forest Inventory and Planning II.

MARD: Ministry of Agriculture and Rural development.

DARD : Department of Agriculture and Rural development.

PPC : Province People's Committee

DPC : District People's Committee

EMSB : Ecotourist Management Steering Board

Introduction and Problem Statement

The Phu Quoc National Park (PQNP) was established in 2001 by upgrading the former Phu Quoc Natural Conservation Area, under the Decision No. 91/2002/QĐ-TTg of the Prime Minister dated June 8, 2001. The Park was described as a location where an important area of primary forests in the island has been maintained without large impacts. This area consists of tropical forest ecosystems with diversified floras and faunas, which were enriched by various biological components from other places in the world, as a result of past dispersions and immigrations. Its species biodiversity, including rare species or newly identified species for biological sciences and for Vietnam, was assessed as having an equal importance to other protected areas and national parks in Vietnam.

In addition, to conservation values, PQNP's natural resources have a high attractiveness for ecotourism development, generating a source of income that would effectively contribute to the conservation effort of the Park as well as socio-economic development of local people in the area.

Although ecotourism was highlighted in the project document as well as in the decision mentioned above to invest in the development of the PQNP and its buffer zone in the period 2001-2005, this component has not been adequately realized. According to the Decision No. 178/2004/QĐ-TTg dated October 10, 2004 of the Prime Minister, The Phu Quoc district-island should be developed towards a large and modern center for tourism and international trade of the Mekong Delta - South West region in the year 2020 and gradually towards becoming a recognized center for tourism and international trade at the regional and international scales.

Ecotourism is a form of tourism which is based on the nature and folk culture, integrated with environmental education and contributed to conservation and sustainable development efforts, with the active participation of local communities (General Agency of Tourism, 1999). Following this definition and issues mentioned above, ecotourism development issues of the PQNP should be reviewed, and the first step of this work is to develop an appropriate strategy for sustainable ecotourism development in the specific context and new opportunities of the island-district. The initiative has received concerns of several stakeholders, including provincial and district government agencies, local communities and international organizations.

With the assistance and support of the Wildlife at Risk (WAR), a strategy for ecotourism of the PQNP was drafted. The development process of this strategy has been implemented with the coordination and consultation of WAR, the Phu Quoc National Park Management Board, state management agencies relating to ecotourism and other institutions at the province and district levels.

Part I

Legal documents for ecotourism development strategy establishment

- 1) Decision No 186/2006/QĐ-TTg dated 14 August, 2006 of Prime minister on Issuance of regulations for management of special-use and protection forest, and commercial natural forest.
- 2) Decree No 32/2006/NĐ-CP dated 30 March, 2006 of Government on management of endangered, rare, precious species of flora and fauna.
- 3) Notice No 233/TB-VPCP dated 18 December, 2004 of Government office on Ideas of Deputy Minister Nguyen Tan Dung in the meeting of Phu Quoc island development, Kien Giang province.
- 4) Decision No 178/2004/QĐ-TTg dated 05 October, 2004 of Prime Minister on approval of Master Plan for development in Phu Quoc island, Kien Giang province untill 2010 and vision to 2020. Kien Giang Provincial People Committe, 2004.
- 5) Instruction No 12/2003/CT-TTg dated 16 Mai, 2003 of Prime Minister on Strengthening urgent measures for forest protection and development.
- 6) Decision No 192/2003/QĐ-TTg dated 17 September of Prime minister on Approval of Management strategy for a protected Area system in Vietnam to 2010.
- 7) Decision No. 91/2002/QĐ-TTg of the Prime Minister dated June 8, 2001 of Prime Minister on upgrading the former Phu Quoc Natural Coservation Area to Phu Quoc National Park.
- 8) Decision No 97/2002/QĐ-TTg dated 22 July, 2002 of Prime Minister on approval of Strategy of Vietnam Tourism Development in the period of 2001-2010.
- 9) Decision No 178/2001/QĐ-TTg dated 12 November of Prime minister on Rights and obligations of households, individuals in land allocation, forest land contract for forestry purpose.
- 10) Decision No 08/2001/QĐ-TTg dated 11 January of Prime minister on Issuance of regulations for management of special-use and protection forest, and commercial natural forest.
- 11) Official document No 1251/ BNN-KL dated Mai 5, 2001 for upgrading the former Phu Quoc Natural Coservation Area to PQNP and investment in the period of 2001-2005).
- 12) Decision No 245/1998/QĐ-TTg issued 21 November, 1998 of Goverment on state management responsibility over forest and forest land at different levels.
- 13) The Socialist Republic of Vietnam. Tourism Law 2005.
- 14) The Socialist Republic of Vietnam. Land Law 2003.
- 15) The Socialist Republic of Vietnam. Law on Construction in 2004.
- 16) The Socialist Republic of Vietnam. Law on Environmental Protection 1993.
- 17) The Socialist Republic of Vietnam. Law on Forest protection and development 2004.

Part II

Current Situation and Issues Relating to Phu Quoc National Park Ecotourist Development

1. Basic Information relating to Ecotourism of the Phu Quoc National Park.

1.1. Location and Geography

The Phu Quoc National Park is located in the northern part of the Phu Quoc Island. Its area is belonging to the administration of the Ganh Dau, Bai Thom and Cua Can communes, and parts of Cua Duong, Duong To, Duong Dong and Ham Ninh the communes of the Phu Quoc district. The total area of the Park is 31.422 ha.

The Park is mainly covered with hills and mountains of three mountain systems in the island, namely Ham Ninh, Ham Rong and Ganh Dau. In its eastern and northeastern parts, there are high peaks as Chua (565 m.), Vo Quap (478 m.), and Da Bac (448 m.) of the Ham Ninh mountain system. A large proportion of this part is sloping land about 15-20° and in some cases, high stone extends to form a higher slop (> 45°). The northern part is restrained by the Dai beach chain, 200-250m in elevations and consists of Chao (379m) and Ham Rong (365m) mountains.

In general, the Park's topography is characterized with a reduction in elevation from the North to the South and from the East to the West. There are depressions which form typical wetland ecosystems locally called "lung", temporarily flooded in the rainy season and form attractive natural landscapes such as in Bai Thom.

1.2. Climate and hydrology

1.2.1. Climate

Governed by the southeast monsoon regime, the area has a very seasonal tropical humid climate. The annual average temperature is 25-27°C, with a year-round temperature variation of 3°C, less than diurnal amplitude of 6°C. The total rainfall in the area is about 3,038 mm. The rainy season lasts with the southeast monsoon, from June to November. The total number of rainy days is 23 to 24 per month and the quantity is 450 mm per month in July, August, and September. Southeast monsoon reaches grade IV, averaging 4-5 m/s. The dry season occurs in the remaining months of the year, i.e. from December to April of the next year.

Like in other provinces in the Mekong Delta, Phu Quoc has rarely been suffered with typhoons. In an observation period of 100 year, typhoons occurred in 1905 and 1997 with a wind speed more than 100 km/h. In general, the climate is favorable for year round tourism and outdoor recreation activities (except in heavily rainy months).

The following are climatic data of Phu Quoc.

Table 1. Climatic data of Phu Quoc Island.

Characteristic		Values
(1) Temperature:	Annual average temperature	27,3° C
	Annual highest temperature	32,0° C
	Annual lowest temperature	21,8° C
	Amplitude	7,0° C
(2) Rainfall:	Annual average rainfall	3.038 mm.
	Annual highest rainfall	3.149 mm.
	Number of rainy days per year	174 days
(3) Relative humidity:	Average	83,3 %
	Highest average	94,6 %
	Lowest average	67,7 %
(4) Evaporation:	Monthly	116,2 mm
	Highest month	164,6 mm
	Lowest month	80,8 mm
(5) Wind:	Southeast Monsoon	May to October Grade IV, 4-5 m/s
	Northwest Monsoon	November to April

1.2.2. Hydrology and water resource

PQNP is limited by the sea in its North, East and West sides with a coast line of about 60 km in length and affected by a semi-diurnal tidal regime of the Gulf of Thailand. Surface water is abounding in the inland, due to high rainfall and spring and river density. The density of spring is 0,42 km/km² (largest density among islands in Vietnam). There are two main river systems in the island in which their watersheds are larger than 10 km². They occupy a total basin area about 25% of the total island area:

+ The Cua Can river receives water from Chua mountain, has a river length of 28,75 km, the total length of the springs is 69 km, and the watershed area is 147 km².

+ The Duong Dong River starts in Da Bac Mountain, has a river length of 18,5 km, the total length of the springs is 63 km, and the watershed area is 105 km².

Other rivers are Tram, Vung Bau, and Ca which are small in size.

In general although springs and rivers in the area are short and small, the network is well developed, due to high rainfall (more than 3,000 mm per year) and large remained forest. Besides, the landform of the area makes the rivers and spring concentrated more in the west part than in the east part. The flows are highly seasonal variable and therefore water way transportation on the springs is impossible.

Ground water is abounding. Shallow ground is evenly distributed over the area while true aquifer water in the northern part is more difficult; for instance, in Ganh Dau, two pits bored up to 30 - 40m in depth failed to produce water).

Surface water quality is soft i.e. does not contain high concentrations of calcium and magnesium. According to an analysis made by the Institute of Hygiene and Epidemiology, surface water meets requirements for domestic uses.

Fresh water supplying to local people in the island is ensured by two sources: ground water and rain water, in which ground water has a critical role. Water availability is also a constraint in the production and livelihoods of the local people, particularly in the dry season.

1.3. Ecotourist resources of the PQNP

1.3.1. PQNP Flora

PQNP has a high number of its forest plants species. A recent biodiversity survey enumerated 1.164 green plant species, belonging to 137 families and 531 genera, in which there are 5 species of Gymnospermae in 3 families and 4 genera.

In term of utilization, about 155 medicinal plant species has been identified, including 34 plant species for tonic medicine, and 11 species used in curing serious diseases; along with them are 23 species of Orchids including a new species for Vietnam named *Podochilus tenius*.

Phu Quoc flora and particularly PQNP's flora has close links with neighboring systems, as indicated by typical elements (Table 2).

Besides, as the Park is located in an island and the climate is strongly influenced by the sea, several wetland ecosystems such as mangrove, and Melaleuca forest (post-mangrove) are existed along with the primary dipterocarp forest, open dipterocarp forest, several forms of secondary forest, brushland and stunt forest on rocky side of mountains and other vegetation types.

Table 2. Geo-botanical Elements in the Flora of Phu Quoc Island.

Flora system	Typical elements	Number of Taxa
Malayano-Indonesian	Dipterocarpaceae	16 species in 6 genera
Hymalayano-Yunnan	Gymnospermae:	
	Podocarpaceae	4 species in 2 genera
	Gnetaceae	1 species in 1 genus
	Angiospermae:	
	Ulmaceae	1 species in 1 genus
	Oleaceae	3 species in 3 genera
	Aceraceae	12 species in 10 genera

Flora system	Typical elements	Number of Taxa
	Rosaceae	1 species in 1 genus
	Fagaceae	4 species in 2 genera
	Lauraceae	8 species in 6 genera
Indo-Mianma	Combretaceae	7 species in 5 genera
	Lythraceae	3 species in 1 genus
	Bombaceae	2 species in 2 genera

The following is a brief description of various vegetation types of the park.

(1) Mangrove

Mangroves occur in patches in coastal river and creek mouths, mostly in Tram river mouth. The plant composition of mangrove in Phu Quoc includes *Rhizophora apiculata*, *Bruguiera gymnorhiza*, *Sonneratia alba*, *Lumnitzera racemosa*, *Ecoecaria agallocha* and particularly *Lumnitzera coccinea*, which has been found in Phu Quoc but not in other mangroves of the Mekong Delta.

(2) Melaleuca Forest

This edaphic forest type has been found in three topographical conditions in Phu Quoc:

- In permanently flooded depression with a pH about 6, *Melaleuca* was found in combination with *Melastoma villosum*, *Euriocaulon echinulatum*, *Xyris pauciflora* etc. Melaleuca stands have a high density but the trees are usually small-sized.
- In seasonal wetlands temporarily flooded during the rainy season on sandy clay alluvial soil which is compact and acid, *Melaleuca* was found in combination with drought resistance plants such as *Leptocarpus diajunotus*, *Baekkea frutescens*, *Drosera burmannii*, *Xyris pauciflora*, *Eriocaulon echinulatum*, and *Imperata cylindrica* etc. Melaleuca stands have a lower density but trees are spread-crowned and diameter are larger (dbh = 30-40 cm).
- In fixed sand dunes rarely flooded in the rainy season, *Melaleuca* was found mixed with *Parinari anamensis*, *Archylea valali*, *Dillenia ovata*, *Rhodomyrtus tomentosa*, *Melastoma candidum*, *Menecylon harmandii*, *Thunbergia fragrans* etc. *Melaleuca* trees are stunt and slow grown.

(3) Brushland with *Oncosperma tigillaria*

This vegetation type occurs in small and dispersed patches in depressed area and temporarily flooded even in the dry season. Plants are usually short but densely grown. The vegetation has low species diversity, dominated by *Oncosperma tigillaria* which occurs in association with *Lincuala soirosa*, *Caryota mitis*, *Pandanus usii*, *Ardisia sp.*, *Macaranga tribola* and *Stenochlaena palustris* etc.

(4) Dry forest

This vegetation type is distributed in sand shore along the coastline and the road K7 to Bai Thom. The plant composition consists of *Randia tomentosa*, *Rhodomyrtus tomentosa*,

Rhodomirtus sp., *Tarenna quocensis*, *Morinda citrifolia*, *Aporosa plancholia*, *Memecylon harmandii*, *Connarus cochinchinensis*, *Strophanthus caudatus*, *Aganosna marginata* and *Melastona polyanthum* etc.

(5) Open Dipterocarp forest

This forest type usually distributed on fixed sand dunes in the coastal. Trees are slow grown, small sized, low quality and early flowering and fruiting. The plant composition consists of *Hopea odorata*, *Dipterocarpus intricatus*, *D. obtusifolius*, *Panirari anamensis*, *Syzigium sp.*, and *Dilenia ovata* etc.).

(6) Imperata grassland

This secondary vegetation type reflects a high degree of degradation after forest cutting and successive fires. It occurs in the southwestern part of the PQNP, on foots of Tuong and Chop Chai mountains and in the southern part of the island. Along with *Imperata cylindrica*, there are light-demanding species such as *Trema vingaris*, *Grewia paniculata*, *Memecylon harmandii* and *Croton poinanei* etc.

(7) Secondary forests

Secondary forests are distributed mainly in flat and low elevation hills where the forest structure has been recovered after selective cutting and other human impacts. Three sub-types can be distinguished:

- Secondary forests after slash and burn cultivation are one storied forests, consists of light-demanding species such as *Paranephelium sp.*, *Litsea sp.*, *Eugenia sp.*, *Lagerstroemia indica*, *Croton sp.*, *Grewia paniculata* etc. Trees have average 10-15 cm in dbh and 8-10 m in height and are quality usually low.

- Secondary forest developed after selective cutting: consist of one storey of trees and one under-storey of brush. The tree storey has an average 16 -18 cm in dbh, and 10 - 15 m in height. The common species are *Hopea pierrei*, *Eugenia sp.*, *Calophyllum dryobalanoides*, *Trestonia merquensis* , *Memecylon eduta* , *Dipterocarpus dyeri*, etc.

- Secondary forest degraded by over-exploitation: the forest structure is disturbed and forms multi-storied architecture with abounding lianas and brushes and remaining low quality trees. Common species include *Hopea pierrei*, *Diospyros sp.*, *Xerospermum glabrum*, *Grewia paniculata*, *Arporosa ficifolia*, *Acronychia lauriflora*, etc.

(8) Primary Dipterocarp Forest

This forest type is distributed on deep and moist feralitic soil developed on sandstone, in three locations: Ky Da spring, sides of Ham Ninh and Chao mountains. The composition is dominated with species of Dipterocarpaceae such as *Dipterocarpus dyeri*, *Dipterocarpus costatus*, *Hopea pierrei*, and other species of *Dipterocarpus sp.*, and *Shorea hypochra*; these species, although have few individuals and sparely distributed, occupy the dominant stratum of the forest. Other species are: *Xerospermum glabrum*, *Eugenia sp.*, *Diospyros sp.*, *Adina sp.*, *Calophyllum sp.*, *Garcinia sp.* and rattan, etc.

(9) Forests on stony hills and mountains:

This forest type is distributed on hills and mountains, sloping and stony lands, on tops and sides of the mountains of the Ham Ninh mountain system, and on Chao and Ham Rong mountains, with the elevations higher than 250m. The forests are not seriously impacted by human activities. However, due to unfavorable topographical, edaphic and climatic (particularly windy) conditions, forest trees are usually small-sized, stunt and malformed with spreading crowns. Trees, although mature, are dominantly under 20 cm in dbh. (Very few trees reach 30 cm in dbh and 10-13 m in height.).

The flora is similar to secondary forests, but the pristine conditions are maintained due to low human pressure. Typical composition consists of broad-leaved species such as *Tristaria merquensis* (Myrtaceae Family), *Callophyllum sp.*, *Hopea pierrei*, *Diospyros sp.*, *Eugenia sp.*, *Vatica sp.*, *Aquillaria crassna*, *Quercus sp.* etc. For Gymnospermae, *Dacrydium pierrei*, the only conifer species in this forest distributed in uneven patches in the upstream of Ky Da spring, along the road K7 to Bai Thom.

The value of rare and precious species of phu Quoc flora can generalize as follows:

- 9 rare and precious species of 7 plant families were classified as endangered according to Decree No 32/2006/ND-CP of the Government such as *Cupressus torulosa*, *Aquillaria crassna*, *Diospyros maritima*, *Decussocarpus fleuryi*, *Nageia wallichiana*, *Dalbergia cochinchinensis*, *Cycas circinalis*, *Cinamomum verum*, *Cinamomum longepetiolatum* (Sub-FIPI, 2003).
- 5 conifer species of Gymnospermae belong to Hymalayano-Yunnan flora system, China, including: *Cupressus torulosa*, *Dacrydium elatum*, *Decussocarpus fleuryi*, *Nageia wallichiana*, *Podocarpus imbricatus* (Sub-FIPI, 2003).
- 12 species have the scientific name with Phu Quoc geographical name involved such as: *Croton phuquocensis* Croiz., *Phyllanthus phuquocianus* Beille., *Trigonostemon quocensis* Gagn, *Salacia phuquocensis* Tard., *Aglaiia quocensis* Pierre, *Ximania americana* Willd., *Archidendron quocense* (Pierre) I. Niels., *Hedyotis quocensis* Pierre ex Pit., *Tarenna quocense* Pierre ex Pit., *Xantonnea quocensis* Pierre ex Pit., *Connarus semidecandrus* Jack, *C. quocensis* Pierre, *Dysoxylum cyrtophyllum* Miq var. *quocensis* Pierre (Sub-FIPI, 2003).
- In comparison with other national parks in the South of Vietnam such as Cat Tien, Nui Chua, PQNP has plant composition with abundance and species diversity (Table 3)

Table 3: Comparison of plant composition in PQNP and in two other national park in Southern Vietnam

National Park	Area (ha)	No species	No families	No orders	Year of inventory
Phú Quốc NP	31.422	1.164	137	66	2003
Cát Tiên NP	74.219	1.610	162	75	2000
Núi Chúa NP	29.673	1.265	147	85	2002

Source: Sub-FIPI (II), 2003

1.3.2. PQNP Fauna

PQNP is the sanctuary of 95% of the island's animal species composition. In general, the PQNP fauna is richer both in number of species and number individuals than in other island national parks such as Con Dao and Cat Ba (Table 4 and 5).

(1) Species composition:

Results of a wildlife survey made by the Institute of Ecology and Biological Resources in 2005 shown that the total number of wildlife species in Phu Quoc was 206 in 75 families, 24 orders, 4 classes. PQNP has 28 species of animals, 119 species of birds, 47 species of reptiles and 14 species of amphibians.

In the above composition, 42 rare and precious species are recorded (20,39% of total wildlife species of the park), including 8 species of species of mammals, 10 species of birds and 24 species of reptiles. Of them, 19 species (6 species of mammals, 4 species of birds, 9 species of reptiles) are listed in the IUCN Red book (2004); 26 species (5 species of mammals, 3 species of birds, 18 species of reptiles) are listed in the Vietnamese Red book (2000) and 25 species (7 species of mammals, 7 species of birds, 12 species of reptiles) are listed in the Decree 32/2006/ND-CP of the Government.

(2) Comparison of species composition Phu Quoc, Con Dao and Cat Ba National Park.

- Mammals:

The number of mammal species in the PQNP is not high (28 in total 252 species recorded in Vietnam or 11%). The low species diversity of mammals is a general characteristic of many island faunas. In comparison with other national parks on islands in Vietnam, i.e. Cat Ba and Con Dao, PQNP has similar species diversity although its area is larger (Table 4).

Table 4. Comparison of mammal species diversity of PQNP with those in two other national parks on islands in Vietnam

National Park	Area (ha)	No. species	No. families	No. orders
PQNP	31.422	28	14	6
Con Dao National Park ¹	15.043	29	16	10
Cat Ba National Park ²	15.200	31	17	9

Source: (1) Sub-FIPI (II), 2004, (2) Dang Huy Huynh et al., 1996

- Birds:

Table 4. Comparison of bird species diversity in PQNP and in two other national parks on islands in Vietnam

National Park	Area (ha)	No. species	No. families	No. orders
PQNP	31.422	119	41	16
Con Dao National Park ¹	15.043	67	26	11
Cat Ba National Park ²	15.200	65	26	13

Source: (1) Project Proposal for Con Dao National Park, (2) Furey N., et al., 2002.

Table 4 shown that PQNP has the number of bird species higher than those of other national parks in islands in Vietnam. Although PQNP occupies only 15% of the number of total species, it has up to 84% of the total number of orders and 57% of the total number of families of the country. Again, this affirms that PQNP has a high potential to develop bird conservation activities and biodiversity conservation in general in the future.

- *Reptiles and amphibians:*

Table 5: Comparison of reptiles and amphibians in PQNP and in two other national parks on islands in Vietnam

National Park	Area (ha)	No. species	No. families	No. orders
PQNP	31.422	61	20	4
Con Dao National Park ¹	15.043	46	17	5
Cat Ba National Park ²	15.200	34	13	3

Source: (1) *Sub-FIPI (II), 2004*, (2) *Dang Huy Huynh et al., 1996*

Table 5 shown that in taxonomical composition of known species, the total species of reptiles and amphibians in the PQNP is 1,79 times higher than those in Cat Ba National Park and 1,32 higher than those Con Dao National Park. The number of rare and precious is also 2 to 2,4 times higher than in other national parks on other islands in Vietnam. The following are the explanations:

- The PQNP has a larger area, 2 times as compared with Cat Ba and Con Dao national parks;
- Forest habitats in PQNP are more diversified, less fragmentized and in better quality than the two remaining parks (Con Dao has 14 small islands separated from the main island, and Cat Ba has also many small islands in the eastern).

1.3.3. Rare and precious species

The following documents were used in the assessment of rare and precious animal species:

SDVN 2000 - “Vietnamese Red Book. Part Animals”: V - Vulnerable, R – Rare.

IUCN 2004 - Red List of Threatened Species (South and Southeast Asia) (Mammals): VU - Vulnerable, DD – Data deficiency, LR/nt – Near endangered.

NĐ32 2006 – Decree No. 32/2006/NĐ-CP of The Government, dated 30 March, 2006 indicated: Group IB: Wildlife species that are strictly prohibited to any hunting and use; Group IIB: Wildlife species that can be limitedly hunted and used under strict control.

- *Mammals:*

Although the species composition is relatively poor, the PQNP fauna has a high significance in biodiversity conservation, with 5 rare and precious species in critical situation in the country or globally (Table 6). Of them, 4 species are listed in the Vietnamese

Red Book (2000), 4 species are listed in IUCN Red Book (2004), and 4 species are listed in the Decree 32/2006/NĐ-CP (2006).

Table 6. Rare and threatened species in PQNP

No.	Vietnamese Name	Scientific Name	IUCN 2004	SĐVN 2000	NĐ32 (2006)
1	Cu li lớn	<i>Nycticebus coucang</i> <i>Nycticebus bengalensis</i>	DD	V	IB
2	Cu li nhỏ	<i>Nycticebus pygmaeus</i>	VU	V	IB
3	Voọc bạc (Cà Khu, Lộ nổi)	<i>Trachypithecus germaini</i>	DD		IB
4	Rái cá vuốt bé	<i>Aonyx cinerea</i>	LR/nt	V	IB
5	Sóc Đỏ Phú Quốc	<i>Callosciurus finlaysoni</i> <i>harmandi</i>		R	

Two species of *Nycticebus spp.*, namely *Nycticebus bengalensis*, and *Nycticebus pygmaeus*, and a species of long-tailed monkey, *Macaca fascicularis*, are still commonly existed in the PQNP. They can be found in almost all forest habitats in different localities of the Park.

Another primates species, *Trachypithecus germaini*, has commonly existed in PQNP. They have activities mainly on high trees in mountains in Hon Chao and Ham Rong mountains and occasionally come to near resettlements (near the Bai Thom Forest Checkpoint). *Semnopithecus cristatus* live in flock up to 10 individuals. The hair color of individuals in Phu Quoc differs with those in the mainland: they have black hair in the body and whitish color in face. However, newborns have yellow hairs.

According to local key informants, there is presently in PQNP only one species of *Aonyx* which is *Aonyx cinerea* existed in limited number of individuals. Recently (2004) several individuals were found in the backyard of a farmer's house, Mr. Viet, and an area in Cai River near the Forest Control Station.

A red squirrel of Phu Quoc, *Callosciurus finlaysoni harmandi*, was described in 1876 by Milne-Edwards, but up to now, little is known about this endemic sub-species. The sub-species in Phu Quoc differ from other sub-species of red squirrel by its darker hairs and lack of a red band of back hair as in U Minh. The sub-species still common in almost all places in PQNP, including along the road that cross the park.

The presence of a gibbon, *Hylobates pileatus* in PQNP has been a debate. In 1957, Simonetta, in the first time, reported this species in Phu Quoc, based on a specimen who was reported to be from Phu Quoc Island, but several other foreign scientists did not agree about the source of this specimen and therefore the distribution of this species in Phu Quoc Island was not recognized.

- *Birds:*

Results of surveys and compilation shown that PQNP has 3 globally endangered species: *Buceros bicornis*, *Ichthyophaga ichthyaetus*, *Polihierax insignis*, 3 species are recorded in the Vietnamese Red Book and 6 species are listed in the Decree 32/CP, they occupy 8% of the total species recorded in the area.

Table 7. Rare and precious bird species in PQNP

No.	Vietnamese Name	Scientific Name	IUCN 2004	SDVN 2000	NĐ32 (2006)
1	Hồng Hoàng	<i>Buceros bicornis</i>	T	NT	IIB
2	Diều cá Đầu xám	<i>Ichthyophaga ichthyaetus</i>		NT	
3	Sả mỏ rộng	<i>Halcyon capensis</i>	T		
4	Cắt nhỏ họng trắng	<i>Polihierax insignis</i>		NT	IIB
5	Dù di hung	<i>Ketupa flavipes</i>			IIB
6	Chích choè lửa	<i>Copsychus malabaricus</i>			IIB
7	Yúng	<i>Gracula religiosa</i>			IIB
8	Cao cát bụng trắng	<i>Anthracoceros albirostris</i>			
9	Cú lợn lưng xám	<i>Tyto alba</i>			IIB

- *Reptiles and amphibians:*

In the total of 61 species of reptiles and amphibians recorded in the Phu Quoc National Park and its buffer zone, 24 were identified as rare and precious species (39,34% of total species). This number of rare and precious species is highest among national parks on islands in Vietnam, before Con Dao National Park (12 species) and Cat Ba (10 species).

- Eighteen (18) species of reptiles and amphibians in PQNP (29,50% of total species) were classified as nationally endangered, according to the Vietnamese Redbook (2000), in which 5 species are in E (endangered), 8 species in V (vulnerable) and 5 species in T (threatened) categories.
- Nine (9) species (or 14,75 % of total number of species) were recorded from nearly threatened to critical in the Red List of IUCN (2004), in which 3 species are in CR (critical), 3 species in EN (endangered), 2 species in VU (vulnerable) and 1 species in LR/nt (near threatened) categories.
- Twenty-one (12) species (or 17,43% of total number of species) was registered in the Decree No. 32/2006/NĐ-CP of the Government, including 1 species of the Group IB (all catching and using activities are strictly prohibited) and 11 in group IIB (limited catching and using activities).

Table 8: Rare and precious reptiles and amphibians species in PQNP

TT	Vietnamese Name	Scientific Name	SĐVN (2000)	IUCN (2004)	NĐ32 (2006)
1.	Tắc kè	<i>Gekko gecko</i>	T		
2.	Rồng đất	<i>Physignathus cocincinus</i>	V		
3.	Kỳ đà vân (càng cuốc)	<i>Varanus bengalensis</i>	V		IIB
4.	Kỳ đà hoa	<i>Varanus salvator</i>	V		IIB
5.	Trăn đất	<i>Python molurus</i>	V	LR/nt	IIB
6.	Trăn gấm (trăn dây)	<i>Python reticulatus</i>	V		IIB
7.	Rắn sọc xanh	<i>Elaphe prasina</i>	T		
8.	Rắn sọc dưa	<i>Elaphe radiata</i>			IIB
9.	Rắn ráo thường	<i>Ptyas korros</i>	T		
10.	Rắn ráo trâu	<i>Ptyas mucosus</i>	V		IIB
11.	Rắn cạp nia nam	<i>Bungarus candidus</i>			IIB
12.	Rắn cạp nong	<i>Bungarus fasciatus</i>	T		IIB
13.	Hổ mang	<i>Naja atra</i>	T		IIB
14.	Hổ chúa	<i>Ophiophagus hannah</i>	E		IB
15.	Rắn lục mép trắng	<i>Trimeresurus albolabris</i>			
16.	Rắn lục miền nam	<i>Trimeresurus popeorum</i>			
17.	Rùa da	<i>Dermochelys coriacea</i>	E	CR	
18.	Vích	<i>Chelonia mydas</i>	E	EN	
19.	Đồi mồi	<i>Eretmochelys imbricata</i>	E	CR	
20.	Quần đồng	<i>Lepidochelys olivacea</i>	V	EN	
21.	Rùa rặng	<i>Hieremys annandalii</i>	V	EN	IIB
22.	Rùa ba gờ	<i>Malayemys subtrijuga</i>		VU	
23.	Ba ba nam bộ	<i>Amyda cartilaginea</i>		VU	
24.	Cá sấu nước ngọt	<i>Crocodylus siamensis</i>	E	CR	IIB

- Animal distribution

Due to topographical condition, the distribution of wildlife in the PQNP can be subdivided into two different zones:

+ Chao Mountain - Cua Can Ecological Zone

This sub-area is limited in the south by road K7 to Bai Thom, characterized by a flat and depressed land form, frequently flooded in the rainy season. Chao Mountain with a peak of 382m links the coast in the northern part of PQNP and has several caves which are still in pristine conditions. This ecological zone is covered with broad-leaved evergreen forest and Melaleuca forest, abounding in water and feeding materials, and thus having a favorable environment for animals. This explains the concentration of wildlife, including mammals, birds, reptiles, and amphibians (particularly birds, reptiles, and amphibians) in high number of species and individuals. Typical species included:

- Mammals: Eurasian wild pig (Heo rung), Sambar (Nai), Bat, Long tailed macaque (Khi duoi dai), Otter, Yellow-Throated Marten (Chồn), Phu Quoc Red squirrel (Soc do Phu quoc), Northern Treeshrew (Doi), etc.
- Birds: Goose, Swallow, Teal, Great hornbill, Egret, Pelican, Magpie-robin, etc...
- Reptiles: Snake, Python, Crocodile, Turtle, Gekko gekko, etc...
- Amphibians: Toad (Coc), Frog (Ech), Tree-frog (Nhai), etc.

+ Ecological zone of Cai Spring - Ham Ninh

This zone consists of hilly and stony mountainous terrains, and has limited water availability during the dry season. The composition of wild animals in this zone is therefore lower as compared with the northern part, and is occupied mainly by mammals while birds, reptiles and amphibians are low in number of species or number of individuals in each species.

- Mammals: Slow loris (Cu li lon), Pygmy loris (Cu li nho), Long tailed macaque (Khi duoi dai), Indochinese silvered langur (Voọc bac), Otter, Phu Quoc Red squirrel (Soc do Phu quoc), Eurasian wild pig (Heo rung), Yellow-Throated Marten (Chồn), Sambar (Nai), Northern Treeshrew (Doi), etc.
- Birds: Brown Hawk Owl (Cú), Spotted-necked Dove (cu), Flowerpecker (Sau), Forest Wagtail (Chia voi), Woodpecker (Go kien), Lesser Coucal (Bim bip), Red Jungle-Fowl (ga rung), etc.
- Reptiles: Varan (ky da), Snake (ran), Tortoise (Rua), Gekko (Tac ke), etc....
- Amphibians: Toad (Coc), Frog (Ech), Tree-frog (Nhai), etc.

In general, both ecological zones have interactions and mutual supports to form a larger ecological zone of Phu Quoc Island in and between two seasons, rainy and dry, which is suitable for their living and feed material seeking.

1.3.4. Natural landscapes and historical sites

Nature had created many unique landscapes in Phu Quoc, including a string of 26 islands, a set of topographical diversity with 99 hills and mountains, and several large areas of pristine forests, notably in the northern part of the main island. In the Park there are a network of rivers and springs such as Duong Dong, Cua Can, and Rach Tram rivers which can be used for the navigation of small tourist boats; Tien and Da Ban spring which are very attractive to tourists.

On the coastline, there are beautiful beaches such as Gieng Ngu, Khem, Sao, Vong, Bai Thom, Vung Bau, Cua Can, and Dai etc. However, in general all these landscape features have not been invested for ecotourism.

Very beautiful beaches such as Khem and Gieng Ngu are still in pristine conditions where few tourists have come to swim and to pass their holiday. Road systems to the

beaches are poor and inconvenient for tourists. Springs such as Da Ban and Tien have not been significantly invest for ecotourism, and roads leading to them are difficult to travel.

In addition to these natural assets, the project area has several revolutionary historical sites such as the former base of the Phu Quoc district party committee during the war in Ky Da spring and Ham Ninh peak). These historical sites have not been investing for restoration and therefore have not been attractive to tourists who have come to Phu Quoc Island.

Besides, Phu Quoc Island has revolutionary historical sites locating not far from PQNP, that reflect the unyielding tradition during the two revolutionary wars with the colonialist French and the imperialist America.

The history of revolutionary fighting of the Communist Party, the Army and the people are remained in historical sites such as the base of Nguyen Trung Truc in the war with the French, the maquis in Tuong mountain area, the Palm prison, which was built in the French colonial period and was changed to the prison of communist prisoners of war in the period of anti-America imperialist war 1967-1973.

1.3.5. Sea biological resources

PQNP has more than 60 km of coast line. There are famous fish species such as anchovy and codfish. The sea also has other precious animals such as turtles, holothurian. They are precious species that need to be surveyed to develop measures to effectively and rationally use and protect.

Sea algae are also important resource to be used as food and medicine. Pham Hoang Ho (1985) enumerated 108 species in which 2 are new for science and 11 are newly recorded for Vietnam. Important species are *Porphia tanakae*, agar-agar, *Spathoglossum sp.* This resource needs to be surveyed and completely assessed to develop management orientation in the future.

In addition, survey results of the Nha Trang Oceanographic Institute in 2005 there are in the sea area of the Phu Quoc nine (9) species of sea-grass which occupy an area of about 7.200 ha, and concentrate mainly in Ham Ninh Sea. These large sea grass areas provide main feeding material for Dugong, a very rare and precious animal species which is listed in the red book and estimated as only about 10 individuals in the southwest sea zone of Vietnam.

1.3.6 General Assessment of ecotourism resources

In brief, PQNP has a rich ecotourist resource asset which can be evaluated as follow:

(1) Geographical advantages:

Phu Quoc is a big island located in the southwest of Vietnam about 120 km from Rach Gia. It can be easily connected with international sea tourist tours in other countries of the region such as Cambodia, Thailand, Malaysia, and Singapore etc. This is a favorable condition for international and high-quality tourist development.

(2) Natural landscape attractiveness:

Phu Quoc island has the form of a triangle or an anchor, is the biggest island in Vietnam and surrounding by a string of smaller islands on the Gulf of Thailand. From the southern to the northern part of the island, there are 99 peaks of mountains such as Chua Mountain, Vo Quap Mountain, and Da Bac Mountain etc.

About 70% of the island's natural is covered with forests. The island has many springs and rivers such as Tranh spring, Da Ban spring etc. Surrounding the island is the sea with beautiful shores and beaches can be developed for sea tourism and swimming beaches. The bottom of the sea is an oceanic world with coral reefs, sea grass, sea algae, seaweed that can be considered as the forest under the sea, and habitats of colorful fish species.

From a long distance, the general landscape of the island occurs with the green color of forests and the blue color of the sea.

(3) Forest resources attractiveness:

Phu Quoc island has the climatic conditions of both continental and sea that support typical forest ecosystems including primary dipterocarp forest, secondary forest, trees and shrub-land, forests on stony mountains, mangrove, and Melaleuca forest. These ecosystems provide diversity in forest habitats.

The floral and faunal compositions of the PQNP are very rich and diversified, with 1.164 green plant species (belonging to 137 families) and 206 animal species (belonging to 75 families). There are many rare, precious and endemic plant and animal species recorded in Vietnamese Redbook (2000), Red List of IUCN (2004) and the Decree No. 32/2006/NÑ-CP of the Government. The general forest habitats of Phu Quoc are currently considered as the most attractive place in the forests of the southern part of Vietnam.

PQNP forests is also considered as the ideal place for ecotourism activities including study tour on tropical forest, sight seeing, camping, mountain trekking, and a combination of scientific research and outdoor recreation etc.

(4) Cultural and historical sites:

These sites will be attractive to tourists who have come to Phu Quoc Island..

1.4. Situation of conservation activities in PQNP

The Phu Quoc National Park has been mandated to protect both forest resources and coastal resource in the designated area under its control. Conservation activities of the Park are described as follow:

1.4.1. Habitat protection

The Park has its own Forest Control Station and a system of forest check-points in critical sites such as Bai Thom, Tram River, Ganh Dau, Dai beach and Bai Bon. With this system, the overall management of forest and sea resources can be reached in the whole designated area. The Park also built forest fire control towers and sentry box to ensure forest

fire control and to prevent encroachments. The effectiveness of the system was assessed as adequate.

It is worth to notice that as the livelihood of local people has been based on sea resources, pressure in forest resources exploitation has been limited. Our observations, made along main roads that traversing the Park such as the Cau Trang - Bai Thom, Cau Trang - Ganh Dau, and Ganh Dau - Cua Can shown that natural forests have suffered very low impact. Besides, large areas of secondary forest surrounding resettlement areas have indicated the effectiveness of control measures made by the PQNP management board against encroachment and clearing of forest for land reclamation.

However, the most critical issue in forest protection in the PQNP is to protect mangrove areas in the coast and sand shore of the island. Mangrove is one of the important ecotones between the sea and the inland. It is a highly productive but fragile ecosystem that needs careful planning and appropriate management practices to avoid the expansion of aquaculture areas to the mangrove. In addition, tourist activities need to be managed to prevent pollution (from waste disposal) and other negative impacts of human activities.

1.4.2. The control of wildlife hunting

Wildlife hunting are rarely observed in the Park, mainly trapping and catching of small animals, warns and snakes in the forests as well as in the coastal shores near Ham Rong mountain. More effective management measures need to be elaborated to control hunting and using of critical sea animals such as marine turtles and snakes.

The Park is currently concentrating its efforts in managing and protecting its forest area, preventing and controlling forest fires and conserving natural habitats. Wildlife conservation activities have not been adequately developed. PQNP needs to involve local government agencies, the Phu Quoc District Forest Control Station and other nature conservation organizations, to implement campaigns for wildlife protection education.

At the same time, PQNP needs to enhance the control of wildlife hunting and using and trading of wildlife products, focusing on rare and precious species (animal, fresh water and sea turtles, and several species of snakes) in the Duong Dong Township.

1.4.3. Land use management

According to the results of a survey made by Sub-FIPI in 2004, the total natural area of the PQNP is 31.422 ha, in which forest land occupies 27.814 ha (or 88,5%), barren land available for forest development is 3.104 ha (or 9,8%), while agricultural land occupies only 504 ha (1,7%).

As compared with the total natural area of the whole district-island, the Park's area occupies 66%, forested land occupies 58,5%, barren land for forest development occupies 6,5%, and agricultural land occupies 1%.

1.5. PQNP's management activities

1.5.1. Organization system

The Park's organization includes the Management Board and several supporting offices, a Forest Control Station and several forest protection check points.

1.5.2. Infrastructure

The Park's Headquarter is temporarily located in Duong Dong Township. It shares the same office with the Management Board of the Phu Quoc Protection Forest. According to the investment project which was approved in 2001, the new Park's Headquarter will be located in the Administration and Service division of the Park in Cau Trang, about 15 km from Duong Dong Township.

However, this division needs to be changed: additional zoning in 2004 made a shortage in the barren land area available to accommodate proposed construction items. There was a proposal to change to a new site in the northern part of the island (about 20 km from Duong Dong Township).

1.5.3. Main Activities of PQNP

The mandate of the PQNP is to protect and develop plant and animal genetic resources, to implement contractual forest protection, to converse several forest areas for seed production to serve forest rehabilitation programs, to conduct scientific research, to maintain protection forest for water production and to support households involving in forest protection and development.

a) Contractual forest management and protection

A national contractual forest management and protection scheme with local people and army units has been implemented. The scheme is assessed as suitable because the PQNP management board has to manage a large area with a limited human resource and the number of forest protection check points is not enough to cover all forest area especially with the constraints of traveling conditions of the coastal and island area.

Existing forests (both natural forests, plantations) have been well protected, although small violations still existed. Particularly the illegal cuttings of pole timber for black pepper supports occur but not common and in small quantities.

Due to clear conditions and boundaries which are indicated both on maps and in the field, contractual forest protection scheme and forest land allocation program are preliminary assessed as effective, the situation of open accessibility has been stopped, the forests have been well protected, the plantations reach high seedling survival rate and high quality trees.

b) Silvicultural practices

Measures to fostering natural regeneration have been targeted to poor forest and young rehabilitated forest.

c) Research activities

Two research topics have been implemented:

- Establish an experimental plantation of *Aquillaria*, *Fagrea*, *Dacrydium*, .
- Establish an experimental plantation with mixed species on barren land.

The experimental plantations with *Aquillaria* were established in 1993 and 1998. They have got high survival rate, good quality, and presently use to supply planting materials for reforestation in Phu Quoc and other places.

The experimental plantation with mixed species consists of several hardwood species as *Hopea odorata*, *Artocarpus tonkinensis*, *Tarrietia cochinchinensis*, *Shorea hypochra*, and *Anisoptera cochinchinensis*. Tree arrangement was performed in clusters according to species. The plantation reaches 9 year old (to the year 2006). Planted tree was assessed as in good quality (in the rainy season).

d) Seed production forests

Two natural forest plots with a total area of 30 ha were converted into tree seed production forests.

* The first plots was for *Dipterocarpus dyeri* with an area of 10 ha, has the production capacity of 4.000 kg per year (200 trees x 20 kg per tree) equivalent to 200 ha of forest to be planted each year.

* The second forest conversion area was for seed production of two species: *Anisoptera cochinchinensis* and *Shorea hypochra*. It has an area of 20 ha, and a seed production capacity of 1.500-2.000 kg per year. Assuming 60% of the seeds produced are in high quality, this area would supply seed demand for a reforestation plan of 2.000 ha per year, with 1.700 ha of *Shorea hypochra* and 300 ha of *Anisoptera cochinchinensis*.

1.5.4. Capital for the investment in the park

The capital for the investment in the park in the recent years has supported mainly from the new planting programme of 5 million forest hectares (called 661 programme). Funds has invested directly for forest development such as management, protection, planting and restoration. Funds for forest scientific researchs and ecotourism development are very little.

1.6. Socio-economic conditions directly related to the PQNP and Ecotourism development

1.6.1. Community distribution

In the National Park:

- The Park's topography consists mainly of hills and mountains near the sea, therefore, local people have been concentrated in a belt surrounding the park. In general, there are no resettlements inside the park's area.

- Transportation in the park is mainly based on earthen roads and old logging tracts and therefore is very difficult in the rainy season. Some bridges and culvert are old and degraded, making the transportation harder.

- The road system across the PQNP has a total length of about 90 km with 12 bridges, and includes the following roads:

- * Duong Dong-Cua Can 12 km
- * Duong Dong-Bai Thom 29 km
- * Suoi Cai-Ganh Dau 19 km
- * Cau Trang –Ham Ninh 30 km (newly built)

In the PQNP Buffer Zone:

Based on PQNP and buffer area investment and development plan in the period of 2001-2005 approved by MARD and Kien Giang authorities (Decision No. 91/2002/QĐ-TTg of the Prime Minister dated June 8, 2001, Official document No 1251/ BNN-KL dated Mai 5, 2001 for upgrading the former Phu Quoc Natural Coservation Area to PQNP and investemnt in the period of 2001-2005), has defined the buffer area of PQNP as follows:

The inland buffer zone of the PQNP was designated including the following communes and township: Cua Can, Cua Duong, Bai Thom, Ganh Dau, Ham Ninh, Duong To and Duong Dong.

Considering the dispersion of current resettlement areas, the buffer zone can be subdivided into four sub-zones as follow:

+ *Sub-Zone I:* The northern part of the buffer zone, belonging to Bai Thom and Ganh Dau communes, has the boundary from landmarks to the sea or from the forest margin to the sea, including homesteads, homegardens, agricultural lands and barren lands yet to be used in Ganh Dau, Rach Tram, Rach Vem, and Bai Thom villages.

+ *Sub-Zone II:* The eastern part of the buffer zone, belonging to Bai Thom, and Ham Ninh communes, has the boundary from the forest margin to the coastline, including homesteads, homegardens, agricultural land and barren land yet to be used in Bai Thom, Da Chong and Rach Ham villages.

+ *Sub-Zone III:* The southern part of the buffer zone, belonging to Cua Can and Bai Thom communes, has the boundary from forest margin to Cua Can River, including homesteads, homegardens, agricultural lands and barren land yet to be used in of 4 villages of Cua Can commune and Xom Moi village of Bai Thom commune.

+ *Sub-Zone IV:* The western and southwestern parts of the buffer zone, along the road from Duong Dong to the northern part of the island and to Ganh Dau, belonging to Ganh Dau, Cua Duong, Bai Thom and Duong To communes and Duong Dong Township. The boundary is set from land marks or from forest edges to the main road to the northern

part of the island. The boundary in southwest is from a branch of Duong Dong River to Ben Tram village. This area consists of resettlement area, home gardens, agricultural land and barren land which has not been used in villages of Xom Moi, Suoi Sinh, Khu Tuong, Cay Ke, Cay Thong Ngoai, Ben Tram, Cay Thong Trong (Cua Duong commune), Ward No. 5 (Duong Dong township), a part of Suoi Da village (Duong To commune).

1.6.2. Local livelihoods in the Buffer zone

- *Agriculture:* The total natural area of the buffer zone was planned at 6.122 ha. Agricultural land was dominated (47,5% of natural area) and including perennial cash crops (cashew and black pepper). Animal husbandry is also developed to get manure and draught force. Small holder production is dominated. The annual production is not stable, as the production system is extensive, shifting and based on traditional experience. Crop and animal productivities are low, leading to low economic effectiveness.

The population of the buffer zone consists generally of the Kinh; their traditional livelihoods are based on fisheries (fishing and preliminary processing of fish, shrimp, and squid etc.) and agriculture (black pepper and fruit trees). As black pepper cultivation needs large quantities of manure, cattle have been raised in large herds and the practice of burning the grazing land in the beginning of the rainy season to get young grass for animals, has increased the threat of forest fire. Other livelihoods includes illegal pole timber cutting (mainly to meet demand of black pepper supports) and collection of non-timber forest products (damar resin, rattan), furniture making and crop cultivation (cassava and corn).

1.6.3. Population structure in the Buffer zone

The population in and near the buffer zone is mainly belonging to Bai Thom, Ganh Dau, Cua Can, Cua Duong, Ham Ninh, and Duong To communes and Duong Dong township. According to recent statistics, in the area designated for buffer development zone project there is a total of 17.837 persons with 9.092 in labor age class in which 93,5% of the population is belonging to Kinh ethnic group, 4,5% to Khmer ethnic group and 2 % is in Hoa group. In a classification according to main livelihoods, 33,3 % of households are farmers, including swidden agriculture, and the remaining have fisheries and services provision as their main living. With a classification according to current wealth ranking 30 % of total households are poor, 54% are in better-off group and 16% are considered as rich.

1.6.4. Infrastructure in the Buffer zone

- *Public health, education and cultural affairs:* The Government has invested a network of public health and education facilities including seven (7) lower-secondary schools, four (4) community health centers in four commune-clusters with a total of 32 hospital beds, 1 doctor, 2 physicians, and 25 nurses. In general the public health and education network has been concentrated in commune-clusters and the accessibility to this public service has been difficult to resettlements in the forest margin. Therefore, this

network needs to be continuously extended in remote communes to ensure health care and children education. Cultural activities in the island have been limited, due to the difficulties in the connection with the mainland. Local people has a low accessibility to information, press, media and performance art, particularly in remote communes and villages, except those broadcasted through radio and television programs.

- *Transportation:* Earthen roads are the major transportation means in the area. The buffer zone and the PQNP are accessible through a network of roads with a total length of 50 km and 12 bridges. Main routes crossing the buffer zone are:

- * Duong Dong-Cua Can 12 km
- * Duong Dong-Bai Thom 29 km
- * Suoi Cai-Ganh Dau 19 km

These roads have a width of 8 m., a ballasted foundation and a lateritic soil cover, and are extended to connect the communes. Several roads link the Duong Dong Township and Ham Ninh in the southern part of the island were asphalted. Several new roads are under construction in the north and northwest.

- *Electricity and other sources of energy for domestic uses:* Two thermo-electric plants located in Duong Dong Township and An Thoi are operated to supply power in lines which is available only in the Duong Dong Township, the An Thoi and in some neighbor communes. A majority of communes in the PQNP buffer zone can not access to electric power line, and some households have the conditions to equip themselves with small generators.

- *Implemented investment and support project in the buffer zone:* Several support projects have been implemented in the area, notably the Rural Clean Water Project, the Hunger Eradication and Poverty Reduction Project, the Project under Decision No 245/TTg; Project for Black Pepper; the Duong Dong Reservoir Project. These projects have created direct benefits for local people and were assessed as effectively implemented.

1.6.5. General Assessment of socio-economic situation in the buffer zone of PQNP

In general, the socio-economic situation of the buffer zone has reflected the conditions of Phu Quoc Island with recent large development following the leadership of the Province and District People's Committees and the active participation of local people. Besides, it also shows out the potentialities in participation of PQNP ecotourist services. The following are some issues need to be taken into account to support the Park's activities:

- The households' economy in the buffer zone is mainly based on agriculture (notably black pepper), fisheries and services. The proportion of 33.3% of total households living with agriculture (including garden and swidden) is an advantage for the implementation of the forest land allocation and contractual forest management to households for their protection and reforestation activities.

- Encroaching to forest lands for cultivation in the Park by immigrants is still a real difficulty to the implementation of forest management and protection as well as forest rehabilitation. A part of the population who practice swidden agriculture have illegal activities such as cutting poles for black pepper supports, collecting non-timber forest products and hunting to generate additional income.

- The road network has not been adequately developed to facilitate transportation needs of local people, and have influenced forestry activities, and other productions.

- Health care and education networks are also limited and faced difficulties in the implementation of their activities (in term of equipment and human resource). They difficulties need to be overcome with the support from the government.

1.7. Human resource of the PQNP

The Park has a staff of 62 full-time and stable regular persons and 85 persons under contract. Ten (10) of them got university degree (3 in silviculture, 6 in economics; 1 in Informatics), Ten (10) graduated from forestry professional high-school and the remaining are technical workers. Therefore, PQNP lack of staff who have got training on tourism or ecotourism.

1.8. Policies and plans relating to tourism development at the provincial and national level and their relation to Phu Quoc Island and to the PQNP

1.8.1. Policy guidelines

- The national development strategy of the tourism sector toward 2010 (Issued based on Decision No 97/2002/QĐ-TTg dated July 22, 2002 of Prime Minister) has identified Kien Giang Province as one of the five sea tourist zones of the country. Phu Quoc island is one of 17 main tourism sites of the country. At the provincial level, Kien Giang has been zoned into 4 tourist areas, namely (1) Ha Tien-Kien Luong; (2) Phu Quoc; (3) Rach Gia and the surroundings; and (4) The Cà Mau peninsula.

- According to the provincial development strategy of the tourism sector toward 2010 with a vision to 2020, Kien Giang has been zoned into 4 tourist areas, namely (1) Ha Tien-Kien Luong; (2) Phu Quoc; (3) Rach Gia and the surroundings; and (4) The Cà Mau peninsula. The basic orientation was to bring tourism to become an important economic sector in the socio-economic development strategy of the province. The general guidelines were as follow:

- Tourist development has to be integrated with the promulgation of revolutionary tradition, the conservation of national cultural character, the dissemination of patriotism and the enhancement of awareness on environment and natural landscape protection.

- Tourist development should integrate domestic demand and international travelers' demand, especially travelers from ASEAN countries.
- The tourist sector needs to enrich and diversify tourist forms and products.

- The Decision No 178/QĐ-TTg dated October 05, 2004 of the Prime Minister on the approval of “The Master Development Plan of the Phu Quoc Island, Kien Giang Province towards 2010 with a vision to 2020” has identified the following objectives and approaches:

- Concentrate efforts to build and develop the Phu Quoc island following a suitable plan and implementation steps to become a large and modern tourist, outdoor recreation and international exchange center, to serve the Mekong Delta, the southwestern region of the country and to gradually becoming a regionally and internationally recognized tourist and trade center.
- The development of Phu Quoc island needs to be integrated with requirements to ensure national defense and security of the island and the country.
- The development Phu Quoc needs to be closely linked with the Mekong delta, Ho Chi Minh City and in the relations with South East Asia region.
- Concentrate efforts in priorities areas of tourism development and gradually to develop high quality tourist services according to specific plans; as the same time, foster the development of other service sectors in order to meet requirements of bringing into play of the island's advantages.

- The Decision No 178/QĐ-TTg also indicated the contents of Phu Quoc development and highlighted that Phu Quoc needs to be developed it multi-sector economy with a special focus on tourism development:

- Concentrate efforts to develop the Phu Quoc island to become a tourist center, firstly and mainly in high-quality island and sea ecotourism.
- To develop the service sector such as finance and banking, insurance, communication, aviation, commerce, health care, sport, and recreation etc. to ensure implementation conditions to realize the island's development objectives and as the same time, to shift the economic structure towards modernization.
- To develop forestry - agriculture sector with the orientation of biodiversity conservation, landscape creation, and environment protection to serve tourist development, and to partially meeting local and tourists' demands.
- To integrate the development of the fisheries sector with tourism.

- To develop industries and handicrafts with a special focus on clean technologies (i.e. without pollutant effluence and environment impacts), to create job opportunities and to produce goods for tourists.
- To develop infrastructure towards modernization to meet requirements of the island's socio-economic development, with a special focus on serving tourist development and at the same time, to ensure national defense and security requirements.
- To build public parks, several cultural and sports parks and recreation areas, aiming at meeting environmental standards and at the same time, meeting demands of tourists.

1.8.2. Orientation for the zoning of tourist sites in Phu Quoc Island.

(1) Tourist forms in Phu Quoc island:

According to the assessment of specialists from the Vietnam General Agency of Tourism, Phu Quoc can develop various tourist forms, but its most advantages and potentials are for the development of seaside tourism and resorts to meet common preferences of tourists. In addition, special tourism forms to meet specific demands of tourists could be developed in Phu Quoc island (see Table 9).

Table 9 : Assessment of tourism forms in Phu Quoc Island

Tourism form	<i>Very suitable</i>	<i>Suitable</i>	<i>Less suitable</i>	<i>No suitable</i>
1/ Wishes-based tourism				
<i>1.1. Common wishes-based tourism:</i>				
1.1.1.Recreation and sea bath (x)	*			
1.1.2. Excursion (x)	*			
1.1.3. Shipping tourism (cruise)	*			
<i>1.2. Special wishes-based tourism:</i>				
1.2.1. Sport (x)	*			
1.2.2. Adventure (x)	*			
1.2.3. Ecotourism, Nature (x)	*			
1.2.4. Culture/ Art-based tourism (x)			*	
1.2.5. Community lifestyle studying		*		
1.2.6 Honeymoon	*			
1.2.7. Casino	*			
1.2.8. Perch, horse race, Dog race	*			
1.2.9. Semi-wildlife hunting	*			
1.2.10. Fishing, cuttle-fishing	*			
1.2.11. Feast, religious celebration				*
1.2.12. Shopping		*		
1.2.13. Others			*	
2/ Responsible tourism:				
2.1. Trade, public service			*	

Tourism form	<i>Very suitable</i>	<i>Suitable</i>	<i>Less suitable</i>	<i>No suitable</i>
2.2. Disease treatment		*		
2.3. Religion				*
2.4. Visiting				*
2.5. Workshop, meeting, fair		*		

Source: Tourism Resreach Institute, 2004

(x) : Tourist form should be undertaken in the PQNP

(2) Spatial Structure of Tourist development in Phu Quoc:

- *Main Tourist Gates:* Phu Quoc Island can be reached by both air and sea ways. The long-term projection of infrastructure development in Phu Quoc is as follow (Table 10):

Table 10: The long-term projection of infrastructure development in Phu Quoc

+ Air-ports	Up to 2010-2012:	Duong Dong air-port
	After 2010-2012:	Duong To air-port
+ Marine ports:	Main tourist gate for large ships:	Dat Do port
	Tourist gate for ships from the inland:	An Thoi, Duong Dong, Bai Vong, and Dam Gulf
	Tourist gate linked with Cambodia:	Ganh Dau

- *Tourist centers:* Tourist centers are places where infrastructure for tourist services e.g. finance and banking, insurance, communications, trading, restaurants and health centers etc. need to be developed. These tourist centers will serve as important nucleus for international trading in the future, when Phu Quoc will become an international trading center.

It was proposed to develop two tourist centers in Duong Dong, the area of the present air-port, and in Duong To, when two tourist gates for air- and ship- lines will be developed.

- *Tourist sites construction:*

In the environmentally sensitive areas relating to PQNP, covering Cua Can, Cua Duong, Ganh Dau, Bai Thom communes, and the northern part of Ham Ninh commune, ecotourist sites will be developed with some high quality accomodation facilities. As the number of tourists in these site needs to be limited, the following consideration will be taken into account:

- Tourist sites will be constructed based on ecotourism concept. The maximum construction density is about 20% of the area allocated to projects for establishment and development of tourist sites. Some large tourist sites includes Cua Can, Vung Bau, Dai beach, Bai Rach Vem, Bai Tram, Bai Thom and other smaller sites.

- The construction area depends on land availability in these shores and beaches. The maximum height is 3-storied buiding, under the canopy of coconut, the suitable perennial plant that has been widely planted in shores and beaches in Phu Quoc.

- In the total accommodation units in Phu Quoc projected to the year 2020, about 5.000 rooms (or 25-30% of the total) are proposed to be built in the northern part of the island. Large hotels will be built in tourist sites of Cua Can, Ganh Dau and Dai beach, in other beaches, smaller size hotels are proposed.

- In Bai Can and Bai Thom as well as in tourist villages, independent hotels will be built in the future urban area in Cua Can, Ganh Dau. The number of accommodation units is projected to 1.000 or 20% of the total hotel rooms to be built in the northern part of the island. Tourist villas are proposed to be built in the eastern shore from Rach Ham to Bai Thom to receive tourists from northern European and Asian countries who would come to avoid the cold winter in their countries.

1.9. Current situation of ecotourism development

1.9.1. Projects relating to ecotourist activities of the PQNP

PQNP is currently coordinating with Sub-FIPI to establish a plan for ecotourist development in PQNP toward 2010 with a vision to 2020. The project document has been submitted to relevant authorities for approval. Excepting this initiative, PQNP does not have any programs or projects relating to ecotourism. WAR is supporting PQNP to implement a project to establish and develop an ecotourist development strategy and the project is in the testing phase.

1.9.2. Status of Ecotourism Facilities in PQNP

As ecotourism development projects have not been approved, PQNP is lacking of investment capital, and therefore not any ecotourist facilities is available at present in the PQNP.

1.9.3. Situation of tourist development in Phu Quoc

a)- Number of tourists to Phu Quoc

Phu Quoc has received a rapidly increasing number of tourists, at about 60% per year in the period 1995- 2004 (Table 11). It is worth to notice that international tourists have a higher rate of increment in number than domestic tourists. The number of international tourists who stay in the island has increased from 20.4% in 1999 to 72.15 in 2004. This indicates a prospect for tourist development in Phu Quoc.

Table 11. Number of tourists staying in Phu Quoc (1999-2004)

Kind of Tourists	1999	2000	2001	2003	2004	Increment (%)
International tourists staying in Phu Quoc	1.578	2.078	18.209	16.869	25.800	171,8
<i>% of total tourists</i>	20,4	34,9	42,6	64,6	72,1	
Domestic tourists staying in Phu Quoc	8.672	10.800	32.249	60.900	95.250	72,0
<i>% of total tourists</i>	96,9	100,0	100,0	100,0	100,0	

Sources: - Statistical office, Phu Quoc District People's Committee

- Kien Giang Province Department of Commerce and Tourism

Tourists have selected mainly airway to Phu Quoc. According to statistics, 67,8 % of international tourists and 78,9 % of domestic tourists have used airway. The remaining part have used waterway. At present, 6 types of high-speed ships are operating in the routes from Rach Gia and Hon Chong to Phu Quoc in duration of 2- 3 hours and replacing normal ships which need 6-7 hours.

b) - Situation of the tourist facilities in Phu Quoc

The tourism sector of Phu Quoc has a rapid development in facilities to serve tourists' demands. In 1995 Phu Quoc had only 3 accomodation facilities with a total of 87 rooms and 174 beds ; in 2002 the figures were 34 facilities, 177 rooms and 296 beds and in 2004 a total of 60 facilities including 22 hotels, with 1.092 rooms were recorded. The increments in the last 10 years were thus 20 times in accomodation facilities and 12.5 times in number of rooms (Table 12).

Table 12. Accomodation facilities for tourists in Phu Quoc, 1995-2004

Items	1995	1997	1999	2000	2001	2002	2003	2004
Number of facilities	3	3	8	25	34	34	35	60
Number of rooms	87	87	180	-	-	277	852	1.092
Number of beds	174	242	290	-	-	796	1.480	2.900

Accomodation facilities have been concentrated in Duong Dong with 52 facilities, as compared with 6 in An Thoi, 2 in Ong Lang- Cua Duong. Several medium size hotels are Saigon-Phu Quoc with 90 rooms, Huong Bien with 65 rooms, Ngan Sao with 50 rooms, Kim Hoa with 44 rooms, Long Beach with 33 rooms etc. Besides a large number of very small accomodation facilities (under 10 rooms) are also recorded.

1.9.4. Tourist sites construction in Phu Quoc

Phu Quoc has a total of 14 principal shores and beaches and tens smaller sized beaches which can be developed to become attractive tourist sites. In general these shores and beaches are in widerness condition and serve mainly for local people's off-shore fishing activities. However, in recent years, several beaches have been partly developed for tourist purposes such as Duong Dong and Ba Keo - Cua Lap. The following are some important sites :

- Duong Dong Shore

Duong Dong shore extends from Ganh Gio village southwards to Duong To. It can be sub-divided into several beaches as follow :

- The northern beach, from Duong Dong river mouth to Ganh Gio village, has now been occupied by resettlements of local fishers and places for fishing boat anchorage.
- The beach from Duong Dong to the tourist site invested by the Army concentrates tourist facilities such as Huong Bien hotel, Saigon-Phu Quoc resort, Phuong Nam resort , Ngan sao resort and Hotel of the Army (under construction) etc.

- The southern part up to the boundary with Duong To is belong to Ba Keo site and was planned to become a tourist site. Presently, some tourist facilities such as restaurants and guest-houses have been built in this site.

The detailed zoning plan of the Ba Keo Tourist Site was approved by the Kien Giang Province People's. However this plan is hardly feasible as it does not indicate what are the hard core that need investment from the Government and what are the soft parts for the investment of private tourist companies. Besides, the management of construction works was not well implemented. Several tourist companies have over used the area allocated for construction and do not maintain green spaces necessary for the landscape of a tourist site.

The main infrastructure of this tourist sites is the road from Duong Dong to An Thoi just asphalted to the Saigon - Phu Quoc tourist site. The remaining roads are mainly covered with reddish laterite soil.

Fresh water supplied to tourist sites is ground water from some bored wells. Electricity are supplied by the Duong Dong Electric plant, but tourist facilities usually have their own reserved generators.

- Sao Beach

This beach, located in the eastern coast of the southern part, is one of the most attractive beach in Phu Quoc with white fine sand and two mountains in two sides forming a nice bow shape. The beach is using in its pristine conditions. Road to Sao Beach has recently been improved. There are several small restaurants that serve food for the tourists. Several projects for tourist development have been drafted and submitted to authorities for approval, including the Sao Beach Tourist Site of Saigontourist Company, and a golf course.v.v...

- Ong Lang Shore

Ong Lang shore located near the Duong Dong township on the west coast of Phu Quoc island. It consists of several small sized beaches. Several projects have been drafted to request permission for the investment in this area, for instance the Thang Loi tourist site project...

- Vong beach.

Vong beach is located in the southern part of Ham Ninh commune on the eastern coast of Phu Quoc. There are on the beach a cluster of resettlements for the Bai Vong fishers' village. Investments have been made to improve infrastructure of the beach, including the road that connects to the main road from Duong Dong to An Thoi, the road that connects to Rach Ham village in the center of Ham Ninh commune, the port fishing and commercial boats. There are projects for the construction of tourist facilities including hotels and villas. However these projects have not been implemented.

1.9.5 Shores and beaches having potentials to develop tourist sites

The following are the descriptions of current situation of shores and beaches which have not been developed for tourist purposes.

- Truong Beach

Truong is a beautiful beach, extends about 10km from the Lap river mouth to Tau Ru cap. It is still in wilderness but has been assessed as having high potentials for sea tourism. There were clusters of fishing community houses. The largest cluster was in Duong Bao village (1,200 persons). Farmers also live dispersely along the road from Duong Bao to Tau Ru cap. A pearl aquaculture enterprise was also established there but it stops its activities.

- Dat Do Beach

Dat Do (Red Soil) is a beautiful but still pristine beach with a length of 1.1km . Access road to the beach is yet to be upgraded (the road base is currently upgraded in a segment from Village No. 7 to the beach). In the village No. 6, a cluster of houses of a fishfolk (about 30 to 40 households) was established.

- Khem beach

Bai Khem is one of most beautiful beaches in Phu Quoc. It has a length of 1.8-2km and currently used as a shooting practice field by the Army.

- Cua Can Beach

The beach extends from Cua Can river to Ong Lang cap, with a length of about 2.9-3.5 km. It is in pristine condition and lack of access road. The northern part of the beach is the resettlement area of the Le Bat village of Cua Can which is isolated by Cua Can river mouth. The upper part of the beach is a flat land area, covered with natural forest, mainly Melaleuca forest.

- Vung Bau beach

Vung Bau beach belongs to Cua Can commune, on the north-west coast of Phu Quoc island. It is one of few beautiful sandy beaches which has the shape of a bow formed by two mountain chains, Ong Quoi and Vung Bau. The beach has a length about 2.8-3km. The upper part is a flat land which is currently designated as natural forest land of the PQNP. The beach is in it pristine condition. The road along the coast line from Cua Can to Ganh Dau via Vung Bau beach can be used by 4-drive vehicle. There are two restaurants in two ends of the beach.

- Dai beach.

Dai beach is located in the north of Vung Bau beach and belongs to Ganh Dau commune. It has 5,5- 6km in length from Vung Bau cap to Da Trai – Ganh Dau cap and ranks second in length after Bai Truong - Duong To. Dai beach is, like Vung Bau beach, in pristine condition. There are on the beach some house clusters of fishers and sea product processors. In the back of the beach there is a relatively flat land which belongs to PQNP. The road along the coastline in the western part is paved with ballast and can be used for 4-drive vehicle.

- Rach Vem beach

Rach Vem beach belongs to Ganh Dau commune in the north Phu Quoc Island. It has a length of about 3.5km and covered by fine white sand, suitable for seaside tourism development. There are on the beach two clusters of resettlements of about 160 households of fishers and farmers with a total of 720 persons. Resettlements of the fishing community

are located near the coastline while resettlements of the farming community are distributed along the branch road connecting the beach with the main road.

- Rach Tram beach

Rach Tram beach belongs to Bai Thom commune, on the coastline of the northern part of Phu Quoc Island. The length of the beach is about 2,5-3 km. Like the Rach Vem beach, Rach Tram beach is still pristine. A resettlement is found near the Rach Tram river mouth with about 370 households and 1.100 persons mainly fishers and a small number of farmers. The road to Rach Tram was just opened for 4-drive vehicles in several years ago.

- Bai Thom beach.

Bai Thom is located in the southern part of the Bai Thom commune. The beach is a narrow sandy strip which has a length of about 1- 1,5 km and is pristine, yet to be developed for tourism.

- Other smaller beaches

Smaller beaches are found mainly in the eastern coastline of Phu Quoc Island. Some parts have been used for resettlements of fishing villages such as Da Chong (Bai Thom commune), Cay Sao and Bai Bon (Ham Ninh commune). Other parts are still pristine, yet to be developed.

In the above beaches, Cua Can, Vung Bau and Dai are located inside the boundary of the PQNP.

1.9.6. Situation of historical and small tourist sites

Several cultural and historical sites in Phu Quoc have been used for tourist purposes, including Nguyen Trung Truc temple, Cay Dua Prison, Dinh Cau palace, Duong Dong temple, Sung Hung old pagoda, and Su Mon pagoda etc. These sites help enriching tour programs in the island. Besides, several attractive natural landscapes in Phu Quoc have also been used for tourist purposes, such as Da Ban and Tranh springs etc. However the level of investment for the renovation and improvement of these sites has been low, and does not provide special tourist products.

1.9.7. Current situation of ecotourist activities in the PQNP

Although the project document for the establishment of the PQNP has provided principles, objectives, predicted several forms and products of ecotourism and relevant concerns, up to now, these activities have not been realized in the Park.

In 2004, Sub-FIPI had assisted the Kien Giang Province in planning for ecotourist development for the Phu Quoc National Park. This planning document has been revised to be submitted to relevant authorities for approval. Therefore, this strategy is established as a complement for a long term development of ecotourism in PQNP.

2. Relative Advantages, Difficulties and Challenges of Ecotourism Development in the PQNP

2.1 Advantages

- Kien Giang and the Mekong Delta in general are the rear logistic bases for ecotourist development in Phu Quoc (and in Ha Tien). With the improvement and upgrading of the national road No.80 from Ho Chi Minh City to Rach Gia, Ha Tien and the investment of modern boats to link Phu Quoc with the inland, tourist development potential in Phu Quoc- Ha Tien will be increased rapidly.
- Phu Quoc is located in a dynamic tourist region in South-East Asia. Surrounding Phu Quoc in a flight distance of 500-1.200 km there are big tourist centers such as Ho Chi Minh city, Bangkok, Pnompenh, Kuala-Lumpur, Jakarta, Pattaya, Phuket, Bali... In the future, with the development of the Phu Quoc air-port to meet international standards, direct flights from these centers to Phu Quoc will be possible.
- Phu Quoc is located on the international navigation with abounding tourist ships. If the port in Phu Quoc is developed, it can receive a large number of international tourists on these ships.
- Ha Tien was also decided by the Government as one of the big tourist centers of the country. The distance from Phu Quoc to Ha Tien is about 50 km and they are linked with small attractive islands. The coordination between Phu Quoc and Ha Tien is a complementary condition to enrich the ecotourist environment and to make diversified and attractive tourist products for visistors.
- The Phu Quoc National Park (PQNP) is located in an attractive place not only to the outside but also to the system of tourist sites that have been planned to be built to the year 2020 in Phu Quoc Island (the distance is less than 50 km). Several main roads reaching to potential ecotoursim sites are constructed.
- PQNP's diversity in ecotoursm resources and natural landscapes, its abounding sea and forest resources, and its conserved biodiversity are the premises for a successful ecotourism development.
- Especially, Kien Giang PPC and Phu Quoc DPC are intersted in ecotourism development in Phu Quoc island and already have issued some policies relating to promoting, encouraging, calling upon investments for ecotourism development. In recent years, Phu Quoc gained GDP from tourist development which occupied with high rate in the structure of district economical development. Therefore, there are many convenient conditions for investing, setting up ecotourist projects relating to PQNP.
- The amount of international and domestic tourist continues to increase, especcially, international tourist.

- In general, the environment is not polluted yet. Its desolate and waste characteristics still remain intact.

2.2. Difficulties

Difficulties in ecotourism development in the PQNP includes:

- Lack of know-how on ecotourism management; lack of training for personnels of the national park working in ecotourism management.
- Difficulties in environmental protection due to the poverty of local people and due to lack of adequate investment.
- Lack of capital for tourist infrastructure development.
- Lack of document for advertising about ecotourism potentiality, products, and activities.
- Lack of a good strategy for ecotourist management in the national park and a designation of specific ecotourist sites in the PQNP, along with the assignment of professional staff working in ecotourism services like in other national parks.
- Relationships between local people and the Park's conservation activities are weak due to low awareness of local people on the importance of the conservation activities and the uniqueness of the PQNP.
- The pressures from local communities to the Park are always occurred through activities as illegal hunting and timber cutting. These activities create a great negative impact on the Park's biodiversity. Fires occurred in some *Melaleuca* forests during the dry season due to the practice of burning to get young grass for cattle and negatively impacted the Park's biodiversity.
- The Buffer Zone has not been adequately invested, lack of minimum infrastructure to treat waste water and solid waste from domestic and fish processing sources, leading to serious pollutions (for instance, in Vung Bau and Cua Can) and reduction of site attractiveness.
- The relationships between the Park and tourist companies or tour organizers have not yet been built to effectively coordinate ecotourist activities
- Marketing activities for ecotourism in the Park have not been elaborated and implemented .

In general, the tourist sector is just in the initial development and it has shown a high potential. However to develop this sector, big challenges in mechanism and policies and especially capital to invest on the infrastructure, such as road, electricity, water supply and environmental hygiene which is currently poor, is the main challenge to be solved.

2.3. Challenges

- The expansion of tourist activities after the Decision No 178/QĐ-TTg of the Prime Minister, and the approval of a master plan to build the Phu Quoc Island in 2005 has

created challenges for the sector. Especially, the demand of land for tourist infrastructure development with high quality will influence to PQNP.

- According to the above decisions and plans, Phu Quoc will focus its development towards a high quality ecotourist center of regional and international scale. The PQNP has to meet the demands of sight seeing, outdoor recreation, and study/research, etc... of an increasing number of tourists to Phu Quoc (approximatively about 30.000-40.000 permanent tourists per year).
- The emerging issues will include: environmental impacts, bearing capacity of the system in receiving a large number of visitors, when the Park will become a destination in tour package to Phu Quoc.

Part III

Ecotourism Development Strategy for Phu Quoc National Park in the Period of 2006-2015.

1. Several Predictions and Forecastings in Parameters Relating to Ecotourism Development in Phu Quoc National Park

1.1. Population and Social Changes

1.1.1. Population Growth

+ *Population estimation based on natural growth*: The total population of Phu Quoc Island was about 81.000 in 2004. The current population growth rate is 1,7% per year. With the promulgated population policy, this rate is expected to be reduced to 1,5% per year in 2010 and 1,2 to 1,3% per year in 2020. Based on these figures, the total population of Phu Quoc would be 90.000 in 2010 and around 102.000 in 2020.

+ *Mechanical population increment prediction based on sliding averages*: The total population of Phu Quoc Island was about 58.000 in 1995 and 81.000 in 2004. Therefore, population increment from both natural growth and immigration was about 4% per year, including 2% from natural growth and 2 % from mechanical increment. If the natural growth rate were reduced to 1,2-1,3% while mechanical increment were remained at 4%, Phu Quoc's population would be 110.000 in 2010 and 190.000 in 2020. A large number of people in the army and security forces would add to these number to have a total population of about 200.000. The daily average of tourists is estimated at about 20.000 – 30.000, therefore the total predicted population is 230.000 persons.

+ *Population prediction based on labor balance*: The Tourism Research Institute has issued the figures of labor demand in the tourist sector, about 53.000 – 61.000 persons to operate the tourist facilities that is equivalent to 11.000 hotel rooms in 2020¹. However, to receive about 2 to 3 million of tourists, the number of hotel rooms is estimated at 16.000 to

¹ Based on experience of specialists in tourist management, one direct worker in hotel businesses needs two outside indirect support workers.

20.000, accordingly, direct and indirect labor demand in the tourist sector would be 70.000 to 80.000 in the year 2020.

The development of sectors such as forestry, agriculture, industry and handicraft and services (other than tourism) in Phu Quoc will absorb about 35.000 to 40.000 labors (1,5 times of the current figures), the increment is concentrated mainly in management and public services such as education, public health, culture and social work etc.

Based on these calculations, in 2020, Phu Quoc will need 110.000- 120.000 labors. Along with them is a number of dependencies people (estimated at 50% of the number of labors), the total population under the tourist development scenario would be 220.000-250.000 persons.

1.1.2. Prediction of number of tourists

Based on current data of tourists' staying duration, it is expected that Phu Quoc will receive about 7.000 – 8.000 tourists in 2010 and about 30.000 – 40.000 tourist in 2020 reside in the island. If the number of tourists present regularly in the island, the population of Phu Quoc in 2020 will be 260.000 to 280.000 persons.

1.2. Forecastings of Land use changes

The predicted land demand for tourist facility development in the northern part of the island is about 400 – 420 ha, in which land area for tourism development projects is about 250 ha and land area for public services, infrastructure and public gardens etc. is about 150-180 ha (Table 13).

Table 13. Land area planned for the construction of tourist sites in the northern part of Phu Quoc to the year 2020

No.	Beach Name	Area for hotels (ha)				Area for public services (ha)					Total (ha)
		5 star	4 star	3 star	Total	Services	Infra-structure	Public gardens	Other	Total	
1	Cua Can	0	32	22,5	55	10,9	8,2	5	16	41	95
2	Vung Bau	12	32	15	59	11,8	8,9	5,9	3,5	30,1	89
3	Dai	0	32	12,5	45	8,9	6,7	4,5	2,7	22,7	67
4	Rach Tram	0	0	20	20	4,0	3,0	2,0	1,2	10,2	30
5	Rach Vem	0	0	20	20	4,0	7,0	8,0	2,4	21,4	41
6	Ong Lang	0	0	20	20	4,0	3,0	2,0	1,2	10,2	30
7	Thom	0	0	20	20	6,0	6,0	5,0	2,0	19,0	39
8	Other small beaches				10						15
	Total	12	96	130	249	49,6	42,8	32,4	29	154,6	406

Source: Southern Sub-institute of Urban and Rural Planning, 2005

1.2.1. Land available for tourist facility development

In addition to attractive beach and shore, Phu Quoc still has land reserves available to develop tourist facilities such as tourist villages, high ranked villas to meet demands of different kinds of tourists. Thousands hectares of these lands are distributed along the coast

in Ham Ninh, Bai Thom and surrounding mountains and hills near the shore in An Thoi, Duong Dong, Cua Duong (Ong Lang hill) etc.

Current land uses are for agriculture and forestry which can be converted into tourist sites. Several tourist sites such as Cua Can, Vung Bau, Dai beach, and Bai Thom were planned and lands available for tourist facility development are mainly in the boundary of the Park (in rehabilitation zones I and II). This means that the development should be affected by land use policies of the PQNP according to current rules and regulations.

1.3. Environmental predictions

In 2020, the total population of Phu Quoc will be 300.000 persons, including 220.000-250.000 permanent residents and 30.000-40.000 tourists. The population density will thus be 480 persons/km², higher than the current population density of the Mekong Delta. However, this density is still lower than those in other places with similar area such as Singapore (more than 3 millions) and Ho Chi Minh City (more than 6 millions).

To minimize human impacts on the environment in Phu Quoc, the Decision No. 178/QĐ-TTg, 2004 has identified the following basic measures:

- To maintain a forestry land area of about 37.000 ha or 65,7% of the island's natural area.
- To stabilize agricultural land at 4.600 ha.
- To limit the population to 200.000 – 230.000 persons in the year 2020.

Spatial arrangement was also considered in planning with the following guidelines:

- The construction area in Phu Quoc will be limited at 18-20% of the island's natural area, in which the net construction area will be 10-15%. The green areas in the tourist sites will be kept at more than 70% (several areas such as golf courses can be considered as green areas). This ratio is suitable to meet requirements of a high quality tourist facility in which the area for forest and other green space should be more than 80%. If farmers adopt perennial crops in their 4.600 ha of agricultural land, the green area in the island would be higher.
- In ecological sensitive sites such as in the northern part of the island, upstream forests of the proposed dams and reservoirs and small islands of the An Thoi archipelago, only high quality resorts will be allowed to construct but public tourist with many people should be avoided.
- In these areas, the development of urbanized centers or large scale resettlement will be not allowed and kept the current level of population. The increment in population should be allowed only in centers of Ganh Dau, Cua Can, and Bai Thom communes, which are less ecological sensitive.
- Large tourist centers and urbanized areas with their necessary infrastructure such as air and sea ports will be concentrate in the southern part of the island which is less ecological sensitive.

- Criteria for tourist facilities, urbans and rural resettlements in Phu Quoc is upgraded. About 25-30% will be allocated for tree planting, green spaces and tourist gardens.
- In main roads on the island, more than 50% of the allocated area is for tree planting along the protection corridors and lane dividers (except in the segments crossing the Park and other forests).
- Dams and reservoirs will be developed taking advantages of springs and rivers and other natural conditions to ensure fresh water supply for resettlements, urban areas and tourist sites and as the same time, to impact on the microclimate in these dams and reservoirs and to foster the growth of biomass in surrounding forests.
- The road along the coast should be designate at a distance about 800 m from the coast line to minimize air and sound pollution from vehicles impacting the tourist sites.

2. Principles of Ecotourist Development in the PQNP

2.1. Sustainable Ecotourist Development Principles

1. To link closely PQNP's ecotourist development with the planning of Phu Quoc island tourist development.
2. To protect the environment and its ecosystems, to reduce impacts on natural resources of the PQNP;
3. To involve individuals, communities, tourists, tourism organizers and relevant government agencies in ecotourism development;
4. To respect local culture and traditions;
5. To generate a long-term income and to equitably distribute the benefits to local communities and other stakeholders, including tourism organizers and private businesses working in the tourist sector;
6. To generate a finance source for conservation activities of the PQNP;
7. To educate and to raise awareness of relevant stakeholders on their roles in natural conservation activities.

2.2. Principles relating to spatial organization, tourist forms and products

- a) Ecotourism is one of the main activities of the PQNP; benefits gain from this activity is used to satisfy the following priorities: nature conservation, environment protection, and economic development. Ecotourism development activities should follow legal and policy framework of the Government, particularly of the forestry sector, the regulations on special use forest management and rules and regulations promulgated in The Law on forest protection and development in 2004, the Tourism Act in 2005, the Land Law 2003, and the Law on Construction in 2004.
- b) Ecotourism development at the PQNP should be harmonically and closely linked with the tourism development programs of the Phu Quoc district and the Kiên Giang province and should be put under the framework of the provincial tourism development for the period 2001-2010.

- c) Tourist forms and products should be arranged to avoid negative impacts to the PQNP's natural resources and natural ecosystems, and adhered to rules and regulations of local authorities on security and national defense of an island in the border of the country;
- d) To concentrate on tourist services development with the point of view of closely linking to natural landscape. Designed and constructed models have to make environmental friendships, do not break the overall sightseeing, inherit and select indigenous cultures and local customs, highly reach in environmental education and guarantee the sustainable development.

2.3. Principles of the subjects (stakeholders) of tourist development

To ensure sustainable development of ecotourism in the park, the Management Board of PQNP, the direct actor of the Park overall management responsibility is using a multi-stakeholder approach to seek for the collaboration of economic sectors in diversifying the management objective, procuring capital and other resources and supports for ecotourism development.

The following stakeholders are identified:

- a) State-run enterprises working in the tourist sector (including tour organizers, travelling agencies etc...);
- b) Private and joint-venture ecotourist companies;
- c) Collectives /Individuals who are offering tourist services; and
- d) Local communities.

3. Objectives of Ecotourism Development in PQNP in the Period 2006-2015.

3.1. Objectives relating to conservation and rationally use of ecotourist resources

- To conserve biodiversity, to better protect natural resources, to maintain and enhance values of ecosystems and to protect the environment of the PQNP;
- To better use the potentials and values of the PQNP resources, including its natural landscapes, biodiversity, environment, and its culture and historical values, aiming at contributing to realize the tourist development strategies of Phu Quoc District and Kien Giang Province, of the Mekong Delta and the whole country

3.2. Economic objectives

- To generate economic benefits and to contribute to the local socio-economic development through the creation of working places, income increment, business opportunities and to bring benefits to local communities.
- To secure a financial source for management, protection and enhancement of resources in the PQNP through the provision of ecotourist services.

3.3. Social objectives

- To create conditions to equitably share the benefits from ecotourist activities to local communities relating to PQNP through facilitating the participation of local communities in forest management and resource conservation and through job creation in

tourist services (including ecotourist businesses, local people, the Park's staff who directly involves in ecotourist services and forest protection and management).

- Through ecotourist services, to strengthen the awareness relating to natural conservation, forest protection and development for local communities and even tourists.

4. Ecotourist Development Orientation of the PQNP to the year 2015

4.1. General orientation

- Aiming to explore effectively available potential tourist resources of PQNP, the ecotourism development includes both in terrestrial and shore area. The terrestrial part of PQNP undertake activities for conserving terrestrial fauna and flora, and the sea shore part for conserving typical tropical aquatic fauna and flora.

- Spatial planning for tourist development should be followed to separate subjects for each area of PQNP in order to diversify tourist products and to attract tourists as well. Tourist products should concentrate on areas with suitable subjects such as forest-sea research areas, discovering and researching areas of island tropical forest, areas for making artistic scenery photographs and so on.

- Tourist forms of the PQNP will be organised synchronously between product qualities, client care services and tourist propagation which are showed unique characteristics of the PQNP. These aim to satisfy the abundant demand of tourists and to reach sustainable development.

- In the coming time, PQNP should select and establish sample tracts and sites which will satisfy demands both of sustainable ecotourism development and of genuine ecotourists and popular tourists as well. Step by step, to expand ecotourist forms and products in order to attract tourists coming from domestic, regional and international big cities.

4.2. Zoning and Spatial Organization for Ecotourism

- Consider current rules and regulations relating to tourism and ecotourism in national parks (as promulgated in the regulations on special use forest management by MARD, the Tourism Law in 2005, and the Land Law in 2003).

- Consider current situation and characteristics of plant and animal resources, landscape and the environment of the PQNP.

- Consider the principles of sustainable ecotourist development;

- Consider documents relating to the approval of the proposal to establish, and to invest on the PQNP, and the Orientation of Tourist Development in Phu Quoc district and in Kien Giang province to the year 2010.

Ecotourist activities of the PQNP will be organized in three ecotourist sites and four ecotourist tracts (routes) as follow:

a) Ecotourist sites in PQNP:

Three sites are proposed: one in the Administration and Service Division of the PQNP, and two others in ecological rehabilitation division I and II.

- *In the site belongs to the Administration and Service Division of the PQNP,*

Beside the establishment of management board office, this area also has functions to organize research activities and tourist services such as: (1) Constructing the management and tourist receiving Center, the environmental explanation Center, introducing about PQNP activities service. (2) Carrying on scientific research activities, ex-situ genetic conservation for rare and precious species of flora and fauna. (3) Establishing specific, rare and precious plants garden which is representative for reduced Phu Quoc island fauna and flora. (4) Organizing ecotourist activities such as walking for natural sight seeing, observing the ecological research area of flora and fauna, mountain trekking, camping and relaxing.

- *Cua can - Ganh Dau area:* It belongs to ecological rehabilitation division and Cua Can and Ganh Dau commune with Mong Tay Cap area as centre. Tourist activities include sea surveying, sight seeing of rehabilitated tropical broadleaves forest, melaleuca forest, coastal mangrove, the orchard and ornamental plants garden, rehabilitated wildlife animal area, mountain trekking, forest camping, restaurant, shopping and outdoor recreation and relaxing.

- *Rach Tram - Bai Thom area:* It belongs to ecological rehabilitation division and Rach Tram and Bai Thom commune with Hon Mot area as centre. Tourist activities include sight seeing wildlife conservation areas on land and in the sea, tropical forest garden, seeing the cultural and trade village of indigenous peoples established in the form of community-based tourist services, relaxing and camping facilities, restaurant, shopping and outdoor recreation.

b) Zones to be developed for tourist tracts:

Three zones will be organized for tourist tracts in the ecological rehabilitation division I and II to serve ecotourist activities under forest canopies (crowns):

- *Xom Moi- Rach Tram area:* This area has rather diversity of landscape such as melaleuca forest, brushland with *Oncosperma tigillaria*, lowland and mountainous dipterocarp forest with few impacts. Besides, there is a system of forest controlling road with high density. Therefore, this area is suitable to outdoor tourist activities such as bicycles, horse or oxen-draught carts, forest sight seeing, camping and mountain trekking in Ham Rong, Nui Chua.

- *Cua Can-Ganh Dau area:* It belongs to Ganh Dau and Cua Can commune. The topography is in the light up and down form. This is a transition area between sea and mountain area with low slope. The vegetation cover dominated by rehabilitated dipterocarp

forests. Using the available controlling road system, the outdoor tourist activities include mountain trekking in Ganh Dau, camping and coastal tropical forest sight seeing, observing animals in night time along the controlling road.

- ***Eastern hillside area of Ham Ninh mountain*** (from the foot of Nui Chua to Da Bac cap). This area is the highest part of PQNP and Phu Quoc island. The topography is complex with many cliffs that are full of obstacles and difficult of access, many streams and dipterocarp forest still remaining intactly. With special characteristics of topography, vegetation cover and available controlling road system, this area is suitable to organise outdoor tourist activities such as sport tourist, mountain trekking, adventure tourist, crossing the waterfall, swimming in springs, camping and forest observation.

4.3. Tourist Products Development

4.3.1. Tourist forms

PQNP can develop the following ecotourist forms:

a/- Relaxing and seeing combined with scientific research:

Participating this form of ecotourism, visitors can:

- Visit and observe tropical forest habitats;
- Be introduced forest plant and animal resources of the park;
- Visit functional forest sectors of the park;
- Visit the wildlife conservation areas on land and in the sea;
- Be introduced on past and present activities as well as future development proposition of PQNP;
- Be introduced on opportunities and prospects of collaboration in research and natural resources conservation initiatives.

b/- Sport and outdoor recreation

Participating this form of ecotourism, visitors can:

- Perform mountain trekking;
- Ride bicycle across the forests;
- Ride bicycle along the coast line;
- Observe forest by horse or oxen-draught carts;
- Dive and observe coral reef;
- Walk and observe natural landscapes.

c/- Camping

Camping can be integrated with environmental education programs to raise awareness in nature and environmental protection; traditional, historical and cultural education thiên nhiên. Tourists can:

- Camp in the designated forest areas;
- Be introduced on rare and precious animals and plants of the park;
- Be introduced on nature conservation activities;

- Be introduced on traditional, historical and cultural values of the district of Phu Quoc;
 - Visit revolutionary historical sites.
- d/- Weekends, honeymoon and festivals
- Tourists can take a short weekend tour in PQNP to expose in a natural environment, and to relax;
 - Married couples can pass their honeymoon in the park which has bungalows to enjoy the wildness and quiet environment.
 - In festival events tourists can come to PQNP in groups with families and friends to participate in several ecotourism forms as mentioned above.
- e/- International tourist travel
- International tourist can:
- Use tourist ships to embark Phu Quoc port to visit PQNP, and continue their itinerary to Can Gio Biosphere Reserve in Ho Chi Minh City and Con Dao National Park (belongs to the province of Ba Ria-Vung Tau); or
 - Take air lines to Ho Chi Minh City, visit Can Gio Biosphere Reserve and then visit PQNP and Con Dao National Park.

4.3.2. *Tourist itineraries*

1. Mountain trekking tract: in the area of Da Ban mountain, Tien spring, Nui Chua, Ham Ninh and Ham Rong.
2. Bicycle riding tract across the forest: from Trang (White) bridge to Rach Tram (Melaleuca crack/river)
3. Bicycle riding circle along the coast line: Duong Dong - Tien spring – Bon beach - Thom - Trang bridge and return to Duong Dong.
4. Camping in the forest: in the area of Da Ban mountain, Tien spring, and Xom Moi village
5. Relaxing combined with scientific studies: under-water diving to observe coral reef, staying in bungalows at Mong Tay cap and Hon Mot.
6. International travelling from foreign countries to PQNP and to Can Gio Biosphere Reserve and/or to Con Dao National Park.

4.4. Develop a sustainable ecotourism center in the PQNP to integrate to the system of tourist sites and tracts in Phu Quoc island, with tourist itineraries of the country

According to the approved master development plan Phu Quoc island to the year 2020, there will be in Phu Quoc 12 large scale and high quality sea tourist sites (i.e. beach with length 1 km and larger) and several smaller tourist sites as follow:

- *Large sea tourist sites:*

1. Bai Truong tourist site (Duong To commune)

2. Bai sao tourist site (An Thoi township)
3. Bai Khem tourist site (An Thoi township)
4. Red Soil tourist site (An Thoi township)
5. Ba Keo – Cua Lap tourist site (Dương Đông township)
6. Bai Vong tourist site (Ham Ninh commune)
7. Cua Can tourist site (Cua Can commune)
8. Vung Bau tourist site (Cua Can commune)
9. Dai beach tourist site (Ganh Dau commune)
10. Rach Vem tourist site (Ganh Dau commune)
11. Rach Tram tourist site (Bai Thom commune)
12. Bai Thom tourist site (Bai Thom commune)

- *Small tourist sites:*

Along with the large tourist sites listed above, smaller site (i.e. beaches with length under 1 km) will be established in clusters of sea ecotourist sites of medium or small scale in communes of An Thoi, Duong To, Ham Ninh, Cua Duong, Ganh Dau, Bai Thom, and Hon Thom (Table 14).

In general, basic advantages of the tourist development in the PQNP include: The distance from PQNP to big tourist sites of Phu Quoc Island is little far (less than 50 km), the road system and accessing conditions are convenient at present and in the future, there is a potentiality of natural and cultural resources that may satisfy diversified demands of many tourist objects.

Therefore, ecotourist sites in the PQNP will be built to coordinate with and integrate to these above tourist sites to form a tourist system and to participate in tour packages. ecotourist sites in the PQNP will maintain true ecotourism characteristics and principles.

Table 14 : Size and characteristics of tourist sites planned to the year 2020.

Tourist site	Commune/ township	Beach length (km)	Characteristics
a) Large Tourist sites			
1. Truong beach	Duong To	11-12	One of two tourist centers in Phu Quoc island which combined tourism forms, including ecotourism and concentrated tourism.
2. Bai Sao beach	An Thoi	2	A combined tourist site, including high quality ecotourism, partly concentrated tourism and community services.
3. Khem beach	An Thoi	3,5	A combined tourist site, including high quality ecotourism, partly concentrated tourism and community services.

Tourist site	Commune/ township	Beach length (km)	Characteristics
4. Dat Do beach	An Thoi	1,2	A combined tourist site, including normal tourism with tourist port and fishing ship yard of Village No. 6 of An Thới commune.
5. Ba Keo-Cua Lap beach	Duong Dong	4	A high quality ecotourist site
6. Bai Vong beach	Ham Ninh	7	A combined tourist site, including normal tourism with tourist port and fishing ship yard of Bai Vong Village.
7. Cua Can beach	Cua Can	3	High-quality ecotourist site, Golf course and sea tourist services
8. Vung Bau beach	Cua Can	4	High-quality ecotourist site
9. Dai beach	Ganh Dau	6	High-quality ecotourist site, Golf course and other tourist services
10. Rach Vem beach	Ganh Dau	4	High-quality ecotourist site – resettlement of a fisher community in Rach Vem village
11. Rach Tram beach	Bai Thom	2,5	High-quality ecotourist site – resettlement of a fisher community in Rach Tram village
12. Thom beach	Bai Thom	2	Ecotourist site and outdoor recreation for young.

b) Small tourist sites

1. An Yen Cap beach	An Thoi		Ecotourist site
2. Bai Xep beach	An Thoi		Ecotourist site
3. Dat Do to Mui Xep	An Thoi		Ecotourist site
4. Mui Xep to Mui Tau Ru	An Thoi		Ecotourist site
5. Da Trai beach	Duong To		Ecotourist site
6. Da Trai to Den cap	Duong To		Ecotourist site
7. Hang Ran cap	Ham Ninh		Ecotourist site
8. Cay Sao to Bai Bon	Ham Ninh		Ecotourist site
9. Ong Lang village	Cửa Dương		Ecotourist site
10. Other small beaches	Ganh Dau, Bai Thom		Ecotourist site
11. Hon Thom Beach	Hon Thom		Ecotourist site with small tourist service facilities (visit small islands, dive, coral reef study and participation in fishing and squid line fishing...)

Source: Southern Sub-institute of Urban and Rural Planning, 2005.

5. Strategy Implementation Measures

5.1. Ecotourism management and organisation measures

- Ecotourist activities at the PQNP will be implemented inside the designated area of the park according to the Decision to establish the park by the Prime Minister.
- As a forest manager, PQNP will directly organize ecotourist activities, and will not re-allocate or lease its forestry land for ecotourist purposes.
- Kien Giang Province People's Committee approves the ecotourist development strategy submit by PQNP, indicating that the PQNP management board with responsibilities to organize ecotourist activities based on legal regulations and approved investment projects.
- Units and individuals participating in ecotourist services at the PQNP in form of joint ventures and cùng benefit sharing from these activities.
- Ecotourism is one of the activities of the PQNP and is considered as a special activity to serve natural resource conservation objectives of the park. The PQNP Director is responsible in implementing ecotourist activities of the park according to the project proposal approved by relevant authorities.
- A Ecotourist Management Steering Board (called also PQNP Ecotourist Business and Exploitation Board) will be established including Vice president of Phu Quoc DPC (head of management board), Director of PQNP (vice head of board), other members such as Agriculture and Rural development Department, Tourist Department, Forest protection Department, Phu Quoc district police section, Phu Quoc district army agency, Tourist businessmen, Buffer management board, local authorities of relevant communes. The function of board is to establish contents, policies for encouraging investment, exploitation and ecotourist development; to monitor the organization, management, investment and business of ecotourist activities based on legal regulations, approved planning and current policies; to suggest measures for illegal action treating; to regulate benefits gained from tourist services; to monitor tourist propagation and advertisement.
- To establish The Ecotourism and Environmental Education Center of the PQNP that will have the mandates:
 - To coordinate all ecotourism activities in the park;
 - To establish zonation and planning for ecotourism activities;
 - To provide regulations relating to ecotourism activities;
 - To organize ecotourism activities and services directly implemented in PQNP;
 - To act as a contact point linking with The Provincial Department of Commerce and Tourism, the Department of Agriculture and Rural Development, the Department of Natural Resources and Environment and other government agencies in issues relating to ecotourism in the national park.

- Ecotourist activities at the PQNP should follow rules and regulations of the Phu Quoc District People's Committee in issues relating to national security, and defense, social order and safety and other applicable rules and regulations in the district. The Phu Quoc District People's Committee will provide leaderships, guidances and coordination with the PQNP to facilitate the successful and effective implementation of ecotourist activities of the PQNP.
- Ecotourist activities of the PQNP are subjected to the state management of tourism of the Kien Giang Provincial Department of Commerce and Tourism. The Department of Commerce and Tourism of Kien Giang Province is also responsible in the provision of leaderships, guidances, and coordination with the PQNP to perform its state management responsibilities and to facilitate the effective implementation of the park's ecotourist activities as a contribution to the realization of Kien Giang province's master plan for tourism development, in which the Department of Commerce and Tourism is the main actor.
- Ecotourist activities of the PQNP are also subjected to the leaderships, monitoring and assistances of the DARD, the Forest Control Sub-Department and other provincial agencies according to their functions.
- The participation of local communities is one of the characteristics of ecotourism. Local people can participate in ecotourist activities at the PQNP through services such as provision of in house accommodation for travellers, rental simple transportation means, offering of services as food cooking and laundry etc.
- The purpose of these activities is to involve local communities in the park or in its buffer zone in ecotourist activities (which also means that they will actively participate in natural resources conservation) and to generate economic benefits from ecotourism services that they will provide.

5.2. Human resource development measures

- In addition to natural ecotourist resources, the development of ecotourist products need a base of human resource with a high degree of competencies in ecotourism service provision and management. In the current situation, the PQNP is almost totally lacking of human resource for ecotourism development, trainings of necessary skills for ecotourism service providers is having a crucial importance.
- The training program should target to ecotourism managers, tour guides, skilled workers who use specific tourism equipment; and community-based ecotourist development facilitators.
- This training program will cover regular education (such as in universities, colleges, professional high-schools) or long and short term trainings (in-service training or in other places). Budget for this training program will be allocated from national budget, from revenues of ecotourism services, and assistances from international organizations (such as WWF, IUCN, CARE, WAR, ADB etc.).

5.3. Ecotourism facility development measures

- In the first five years (2006-2010), ecotourist activities will be implemented in the PQNP Phu Quoc, as a preparatory phase, profits from the activities will be considered as the second importance. Ecotourism facilities to be constructed mainly for nature conservation and to be undertaken the Environmental Impact Assessment. Economic benefits from ecotourism is a secondary purpose in this phase.
- PQNP will fully use its existing natural assets and infrastructure with some upgrading but will not build new, modern and expensive constructions. Investments will be prioritized for some necessary infrastructure such as ecotourist tracts with explanation sites, an Ecotourism and Environmental Education Center, and a system of security for tourists etc.
- Capital for the investment in ecotourism infrastructure will include national budget, and contribution of economic sectors who participate in the provision of ecotourist services. The Government needs to promulgate appropriate policies (in interests and responsibilities) to encourage the involvement economic sectors including foreign investors.

5.4. Promotion, communication and marketing measures

- To many peoples, the understanding about the former Phu Quoc reserved forest or Phu Quoc special use forest and the present PQNP has been limited. Therefore, the propaganda and introduction of the PQNP to the public is a very important task.
- The contents of this education should include the rich, diversified and authentic forest fauna and flora, and sea fauna of the PQNP to raise the awareness and understanding of domestic and international tourists and of local people on the values of the PQNP, along with famous natural landscapes and products such as black pepper, fish sauce and sea products of Phu Quoc.
- The means of this propaganda may be through mass-media, cooperation in advertisement with tourist agencies, production of brochure, posters and broadsheet, video clips, post cards, and through international organizations such as WWF, IUCN, CARE, WAR, ADB etc.

5.5. Mechanism and policy measures

- Mechanism and fund policies

- To set up policies to mobilize funds from many economical components for establishment and embellishment tourist infrastructures in general and ecotourist sites in particular.
- To issue proper policies for investing and encouraging ecotourist projects which have sustainability and wide participation of local communities, tourist businesses in and

outside the Kien Giang province. Policies need to be defined clearly the land use and the strict management relating to planning, architecture, construction works.

- To establish and promulgate regulations for ecotourist business in the PQNP.
- To establish tax policies and rental values of environment which are suitable to each area, to each location of ecotourist project and depend on access conditions and complex levels in development.
- To establish policies and services for encouragement of investment such as information supports, knowledge supports to businessmen.

- **Market and commercial Policies**

- Invest for topical studies on ecotourism markets in order to assess “demand” side of this form of tourism and to provide a solid basis for both socially and economically sustainable development plans
- Adequately invest for ecotourist promotion and contribute to create market for this attractive form of tourism.

5.6. Zoning solution.

- Based on the spatial orientation of ecotourist sites và and system of centers and itineraries, a detailed zonation will be made to form the basis for investment projects and to ensure sustainable development of these sites with the process of Environmental Impact Assessment.
- In the process of detailed zonation and project feasibility studies, a close collaboration should be maintained between tourist planning specialists and professionals in other relevant sectors, the management board of PQNP, local government and local communities.
- Besides, international cooperation is needed to provide consultancy of experienced international specialists, as we lack of experience in true ecotourist development in national parks to ensure the feasibility of the projects.

6. Priority Programs and Projects

6.1. PQNP Ecotourism Facilities Development Program

a) Objectives:

To build tourist facilities in order to serve demands of tourists in various ecotourist sites of the PQNP.

b) Activities:

- Build a trekking road for observation and explanation to visitors;
- Establish an Ecotourism and Environmental Education Center;
- Establish a system of ensuring security and safety for tourists;

- Construct a system of tourists' accommodation facilities, services and auxiliaries;
- Construct a system of outdoor recreation facilities;

6.2. Human resource development and applied research program.

a) Objectives:

- To meet objectives and requirements of ecotourist activities in short- and long-terms.
- To develop a core team of ecotourist managers and tour guides with a good understanding and competencies in ecotourist services, and based on these persons to extend to human resource in the next phase

b) Activities:

- To train of ecotourist managers, focused on (1) State management of ecotourist activities; Central and Local Governments' guidelines and policies on ecotourism development at the PQNP; Objectives, contents and programs of ecotourist development in the PQNP; Experiences and insights on the organization of ecotourist businesses, management of tours and tourists.

- To train of tour guides with good competencies on: (1) Communication and provision of services; Tourist guidances; Environmental education, natural landscape and biodiversity conservation and preservation of cultural and historical sites; Community participation in ecotourist organizations; and Foreign language communication.

- To provide a training for specific skills in using ecotourism equipments: with an emphasis on (1) the use of water way travelling means; (2) tourists security and safety; and (3) the provision of first aids in case of accidents.

- To train participating households on ecotourism organisation, in the models of community-based ecotourism development: including (1) practical skills in ecotourism organisation and management under community-based ecotourism development models; (2) knowledge in ecotourist products from forest land allocated to them for forest protection and rehabilitation; and (3) Production planning on land allocated to them for forest protection and rehabilitation.

6.3. Establish detailed plans of tourist sites development

a) Objectives:

To establish detailed plans of investments for ecotourist development categories in three tourist sites, the Central of the Park, the Mong Tay and the Mot island to meet demands of sight seeing, staying, conducting scientific research, outdoor recreations etc., to protect natural resources, and to develop reforestation projects.

b) Activities:

- To establish a detailed zoning for investment items relating to constructions and ecotourist development in three ecotourist sites (including the designation of a system

of sites and itineraries; constructions; ecotourists' services and resorts etc., detailed infrastructures and forest fire prevention and control etc..

- To develop annotated documents and detailed zoning maps of ecotourism sites (annotated documents to explain the detailed zoning maps; environment impact assessment; investment cost calculations and investment scheduling for various ecotourist development items; implementation measure guidances).
- To establish detailed zoning maps and drawings for various tourist sites (Detailed zoning maps at 1/500-1/5000 scales).

6.4. Ecotourism Promotion and Marketing Program

a) Objectives:

To introduce programs and activities for ecotourist development at the PQNP to attract tourists and to seek investments of private sector, organisations and individuals, in ecotourist development.

b) Activities:

- To introduce prospects of ecotourist development at the PQNP.
- To introduce ecotourism forms and services.
- To provide guidances on joint investments for ecotourist development.
- To establish priorities and investment policies for ecotourist development.

6.5. Support the participation of communities in ecotourist activities of the PQNP.

a) Objectives:

To involve local communities in the buffer zone of the PQNP in ecotourist activities so that they can generate income, upgrade their live, maintain sustainable ecotourist development activities, reduce pressures impacting natural resources of the park.

b) Activities:

- To build community capacity, knowledge, skills and experiences in organizing and participating to ecotourist activities.
- To establish suitable contractual mechanisms to protect natural resources and to integrate with ecourism activities.
- To develop a suitable benefit sharing mechanism for ecotourism businesses and services.
- To support in captital investments through suitable credit systems according to various financial sources.
- To set up trial models on sustainable natural resources use for ecotourism development with the participation of communities.

7. Efficiency Criteria

7.1. Environmental efficiency

Awareness of local communities will be improved through a propaganda and education program, including the improvement of understanding laws and regulations relating to forest protection and development. They will participate in ecotourism activities as a livelihood option to improve their living standards and their responsibilities and motivations in protecting the forests and other resources.

Tourists will be involved in an education program on forest protection, nature and biodiversity conservation, and environment protection.

7.2. Economic efficiency

Economic benefits from ecotourist activities will contribute to cover park management, resource conservation and uplifting the life of the park's staff, local communities in the buffer zone and the surrounding areas and to generate profits for the private sector who involves in ecotourism businesses in the area.

7.3. Social efficiency

Local communities in the buffer zone of the PQNP will participate in tourist services as a livelihood option that generate job and income and significantly contribute to conservation and social development activities of the park.

8. Processes and time schedules

8.1. Period 2006-2010

- 1) To complete the review of land use planning, to stabilize the park's boundaries based on the master development plan of Phu Quoc island according to Decision No. 178/2004/QĐ-TTg dated October 05, 2004 of the Prime Minister on the approval of the "Master Plan of Development of Phu Quoc Island, Kien Giang Province to the year 2010 and with a vision to the year 2020";
- 2) To establish a Center for Ecotourist Development and Environmental Education and an Ecotourist Management Steering Board under the PQNP administration.
- 3) To complete detailed plans of the section of administration, services and research and tourist sites in Hon Thom, Mong Tay; to basically complete constructions in the section of Administration, Services and Research of the park.
- 4) To train a group of ecotourist managers and tour guides (including the park's staff and community members who participate in ecotourist activities) based on both regular program and re-orientation short- or longer- term trainings.
- 5) To develop ecotourist facilities with a strong emphasis on environmental friendly ecotourist activities.
- 6) To widely promote ecotourist products and to create new markets for these attractive ecotourist products of the PQNP.

7) To undertake the initial exploitation of ecotourist services in PQNP.

8.2. Period 2011-2015

- 1) To fully build ecotourist facilities of the Park;
- 2) To fully work out mechanism and policies in order to realize ecotourist potentials and to create a favorable environment that encourage all economic sectors investing on ecotourist site development in PQNP;
- 3) To fully provide trainings, to widely and continually promote ecotourist products and to create new markets.
- 4) To fully exploit ecotourist services.

Part IV:

Conclusions and Suggestions

Although PQNP is just in the preparation phase of ecotourism development, it has favorable conditions to be realized in the future: the abounding and diversified natural resources, the location near the tourist centers in the region and projects for high quality tourist facilities are planned to be built in Phu Quoc island, an adequate road system, an increasing flow of diversified tourists, and last but not least, the policy environment to attract investments and to foster socio-economic development in Phu Quoc in short and longer terms, as well as the leadership's will from central and provincial government authorities.

To meet basic requirements for the development of sustainable ecotourism in the PQNP, i.e. to well protect the environment and to maintain ecosystems functions, to ensure education and to enhance awareness of tourists, to fully use the bearing capacity of ecotourist sites and to address learning demands of visitors, the implementation of the strategic plan need to be done synchronically and systematically. The processes in this strategy for the PQNP include:

- Human Resource Development Strategy: provides a long term education and training program to improve competencies of ecotourist managers and guides.
- Environmental friendly Infrastructure Development Strategy: including the use of existing roads, the application of clean and renewable energy in serving ecotourists' activities
- Specific tourist sites and itineraries are appropriately designated and planned with the consideration of the context of socio-economic and natural resource management as well as the requirements relating to national defense and security. The arrangement of zoning tourist sites and itineraries has been elaborated to getting approval from relevant authorities.

- A legal mechanism to ensure the implementation of these strategies in various phases and steps.
- A time frame to complete phases and steps according to a general strategy of ecotourist development in the period 2006 – 2015.

The successful implementation of the strategy depends on the participation and coordination of various stakeholders, particularly local communities. Together, they are an actor of ecotourism development and a critical element of conservation and socio-economic development.

Suggestions:

- Strategy implementation organization:

Ecotourism development strategy need to be undertaken soon after making agreement of relevant stakeholders and approved by local authorities. This will be a base for carrying out succeeding steps aiming to create suitable conditions for ecotourism activities in PQNP that can satisfy tourism demand in Phu Quoc islands and others.

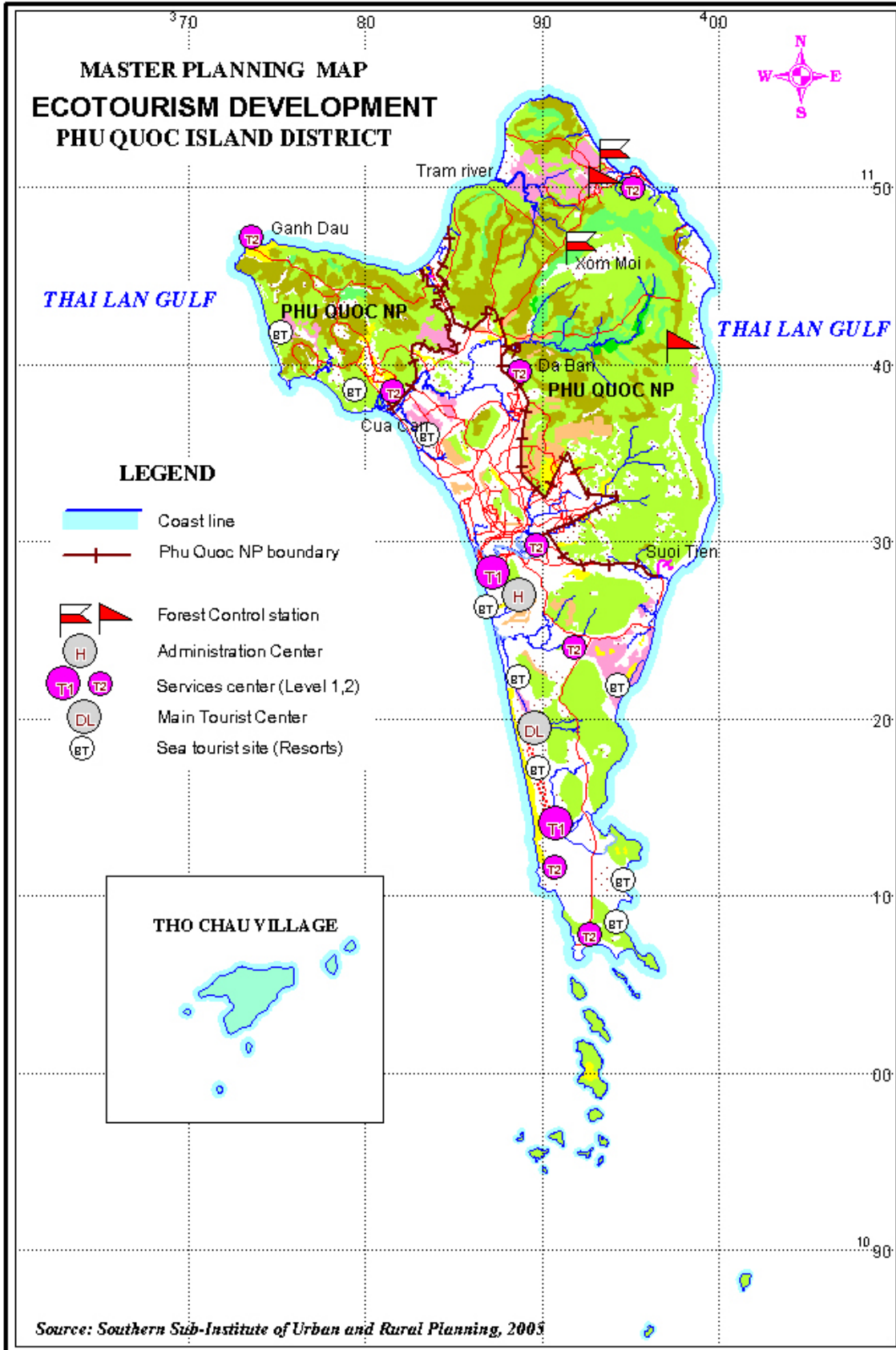
- Management mechanism:

To establish Ecotourism Business and Exploitation Board of PQNP in order to organize, promote and manage all activities relating to ecotourism of PQNP. Ecotourism services and Environmental education Center is one of service units setting up with priority in the coming years to realize ecotourism activities based on defined plan of EMSB.

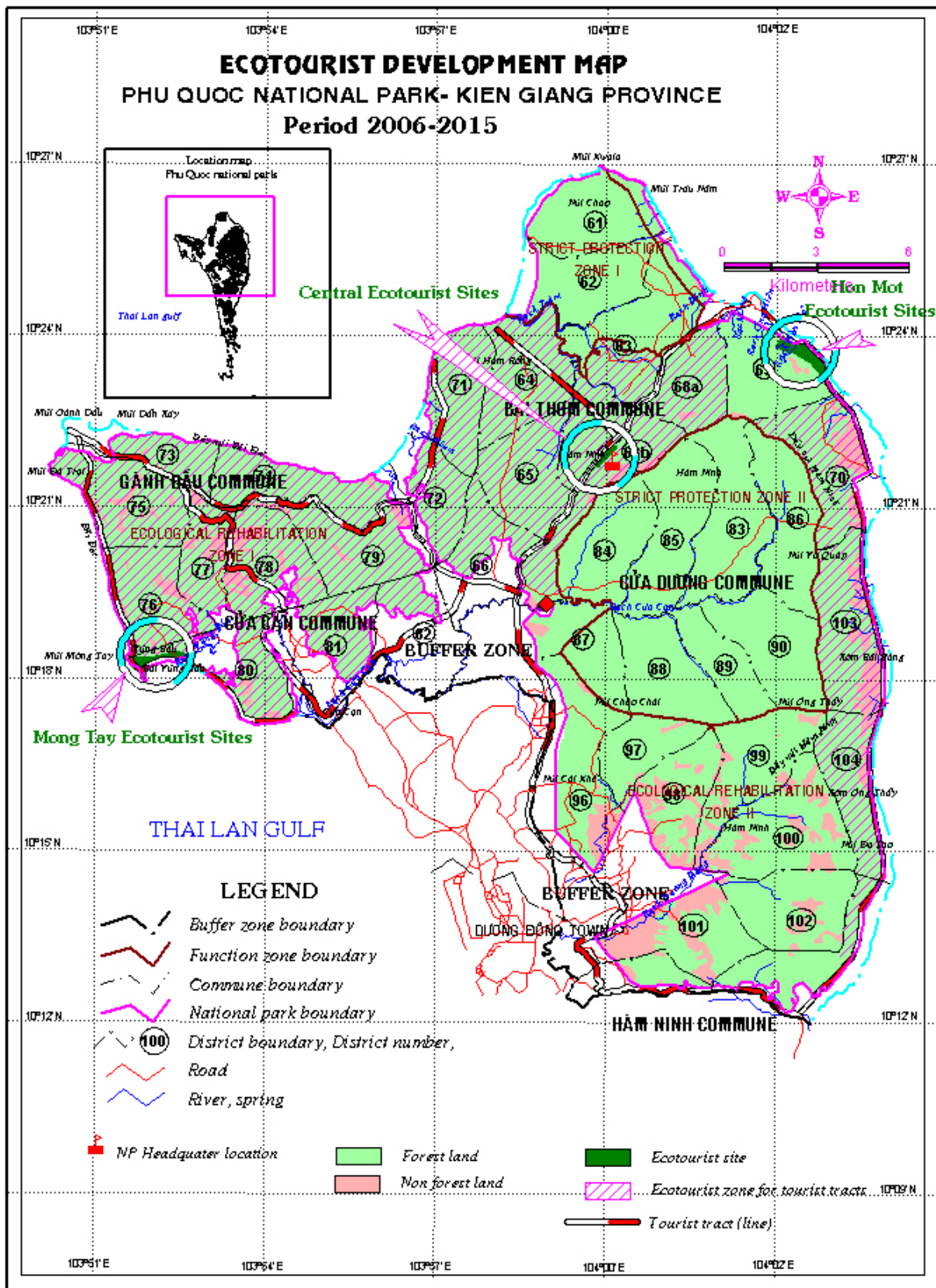
- Upgrading management capacity and tourism professional skills:
 - + To carry out activities for inventory, classification of professional skill levels and establishing a concrete plan in order to set up the programme of education and training.
 - + To realize planned programme of education and training.
 - + To send staffs for excursion to other Parks where having practical experiences and good results relating to ecotourism development.



Map 1 : Master planning map for Ecotourism development of Phu Quoc island district



Map 2: Ecotourist Development Map of Phu Quoc National Park, Kien Giang Province in the period of 2006-2015



Main References

- 1) Master Plan for development in Phu Quoc island, Kien Giang province until 2010 and vision to 2020. Kien Giang Provincial People Committee, 2004.
- 2) Integrated plan for development of Phu Quoc Island, Kien Giang province. Southern Sub-Institute of Urban and Rural Planning, 2005.
- 3) Investment and development Plan for Phu Quoc National Park. Southern Sub-FIPI, 2001.
- 4) Report on Planning of three kinds of forest in Kien Giang province and Phu Quoc island. Southern Sub-FIPI, 2004.
- 5) Report on Strategy of Vietnam tourism development in the period of 2001-2010. Tourism General Department, 2002.
- 6) Report on Strategy of Vietnam forestry development in the period of 2001-2010. Ministry of Agriculture and Rural development, 2002.
- 7) Handbook for ecotourism management and development in protected Areas ,Northern Vietnam. Fundeso, CAECI, Forest Protection Department- MARD, 2005.
- 8) Pham Trung Luong. Ecotourim – Argument and practice problems for development in Vietnam. Education publishing house, Ha Noi, 2002.
- 9) Statistical Yearbook of Kien Giang province, 2005.
- 10) Ecotourism: principles, practices and policies for sustainability. UNEP, 2002.
- 11) Ecotourism. A guide for Planners and Managers (translated into Vietnamese version). Volume 1,2. IUCN Vietnam, NEA, 2000.
- 12) Viet Nam's Eco-tourism Challenges. Attila Woodward, 2006.
- 13) Report on Fauna Assesment in Phu Quoc National Park. Institute of ecology and biological resources, Southern Sub-Institute of Forest Inventory and Planning, 2005.
- 14) Plan on Ecotourism planning and development in Phu Quoc National Park (draft). Southern Sub-Institute of Forest Inventory and Planning, 2005.
- 15) Report on mater planning for tourism development in Kien Giang province. Kien Giang Trade-Tourism Department, 2002.

Some relevant WEB sides referenced:

1) Articles in case it helps towards further inspiration for government on how to help tourists/others follow 10 commandments of ecotourism:

<http://www.planeta.com/ecotravel/mexico/yucatan/ward/ward2.html>
<http://www.nationalgeographic.com/travel/sustainable/professionals.html>

2) Australian codes of conduct for ecotourism

<http://www.bigvolcano.com.au/ercentre/ecotourism.htm>

3) Local community recommendations in the legal process

<http://environment.yale.edu/documents/downloads/0-9/99simon.pdf#search=%22Australian%20government%20ecotourism%20guidelines%22>

4) Components of successful ecotourism, stressing the need for government to protect the environment, and stable infrastructure

<http://www.uneptie.org/pc/tourism/documents/ecotourism/part-two.pdf#search=%22Australian%20government%20ecotourism%20guidelines%22>

5) Along with difficulties of imposing restrictions or carrying capacities in Vietnam:

[http://www.mekonginfo.org/mrc_en/doclib.nsf/0/696047C635E5CBD4802566F0005245BC/\\$FILE/Article2.htm](http://www.mekonginfo.org/mrc_en/doclib.nsf/0/696047C635E5CBD4802566F0005245BC/$FILE/Article2.htm)

6) Outline of planning policy for the Philippines

http://www.apo-tokyo.org/gp/e_publi/gplinkeco/21chapter19.pdf#search=%22government%20guidelines%20ecotourism%22

7) Marine wildlife viewing guidelines from NOAA

<http://sanctuaries.noaa.gov/library/national/oeguidelines.pdf#search=%22gov%20guidelines%20ecotourism%22>

8) Planning policy, and development guidelines for New South Wales river areas

http://www.byron.nsw.gov.au/pdfs/pub_comm_plan/other/ecotourism_development.pdf#search=%22gov%20guidelines%20ecotourism%22

9) Contact details for planning policy for the Brazilian Amazon

<http://www.ecotourism.org/onlineLib/Uploaded/Designing%20an%20Ecotourism%20Policy.pdf#search=%22gov%20guidelines%20ecotourism%22>



Annex 1:

List of staffs and officers has met in Phu Quoc for PQNP Ecotourism strategy development

Order	Date	Name	Organization	Content
1	15/5	Thái Thành Lượm	Head of Phú Quốc DPC	Orientation for tourist and ecotourist of PQ district
2	15/5	Ô. Bình	Director of PQNP	Existing activities and Orientation of Ecotourist development of PQNP
3	15/5	Ô. Tiệp	Deputy Director of PQNP	Existing activities and Orientation of Ecotourist development of PQNP
4	16/5	Nguyễn Trung	Chef of Phu Quoc Forest Protection Management Board	Existing activities and Orientation of Ecotourist development of PQ district
5	16/5	Nguyễn Đức Kính	Deputy Head of Phú Quốc DPC	Assesment of tourist and ecotourist activities of PQ District
6	17/5	Nguyễn Đình Nam	Deputy Director of Phu Quoc Tourist and Trade Promotion Center	Existing situation, professional education and training requirements for tourism and ecotourism in Phu Quoc District
7	17/5	Nguyễn văn Mẫn	Mango Bay Ecotour managemnt	Field survey in Mango Bay Coastal Ecotour Site
8	17/5	Julia Shaw	Director of WAR	Field survey and orientation of Ecotourist development of PQNP
9	18/5	Ngô Hữu Hùng	Director of Phu Quoc Urban Construction and Advisory Center	Existing planning of Ecotourist Areas in Phu Quoc Island
10	16/5	Nguyễn Quốc Dũng	Chef of Resources and Environment Office	Existing Environmental situation, land use planning for tourist development to the year 2010.
11	18/5	Đoàn Văn Tiến	Phu Quoc Urban management Office	Environment problems of Phu Quoc Urban and tourist places.
12	17/5	Lê Thị Thu Thảo	Officer of Phu Quoc Tourist and Trade Promotion Center	Existing situation, professional education and training requirements for tourism and ecotourism in Phu Quoc District

Annex 2: Some pictures of ecotourist resources relating to Phu Quoc NP.



**Landscape resources of
Phu Quoc island**

