



# *Sihanoukville*

Coastal Strategy



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# FOREWORD

## **What is the Sihanoukville Coastal Strategy?**

The Coastal Strategy of Sihanoukville captures the people's vision or desired outcome for the coastal area of Sihanoukville, and, fundamentally, identifies the strategies and actions necessary for realizing this common vision.

The Coastal Strategy recognizes the rich assets and enormous development potential of Sihanoukville and is aware of the threats, which, if not addressed, could undermine these opportunities. One of the core focuses of the Coastal Strategy is to maximize socio-economic development opportunities, and build international recognition for Sihanoukville as a center for business and leisure. Preserving the unique and diverse natural and ecological heritage of Sihanoukville is of utmost importance, and it is recognized that for truly sustainable socio-economic development, the integrity of the natural environment must never be compromised.

Perhaps most significantly, the Coastal Strategy expresses the interest and concern of the majority, for the improvement of basic quality of life and to rebuild the social, cultural and spiritual fabric of Khmer society. This will be achieved through the restoration and development of religious establishments, schools and health facilities, and the improvement of related services.

The goals described in the Coastal Strategy will be achieved through the systematic implementation of integrated coastal management (ICM), strategies and actions supporting education and capacity building among local people, protecting and preserving nature, mitigating harmful human activities and promoting sustainable economic development opportunities.

A number of factors is fundamental for the success of the Coastal Strategy and the achievement of integrated coastal management and sustainable development for Sihanoukville. These include genuine stakeholders' participation, commitment and leadership from local and national government, and strong cross-sectoral cooperation and coordination.

## **What is the scope of the Coastal Strategy?**

The geographical scope of the Coastal Strategy includes the land area of the three political districts, Mitapheap, Stung Hav and Prey Nup, a total of 1,283 km<sup>2</sup> including the 119.5-km coastline. The seaward management boundary covers the waters within the jurisdiction of Sihanoukville including 22 islands. The main area of focus for management is concentrated around Sihanoukville Port, the numerous tourist beaches and islands, and Ream National Park. There are also important management interests in the watershed areas draining into Chhak Veal Ring (river/estuary) and the national marine fisheries of Cambodia.

There is no timeline identified in the Coastal Strategy. The adoption of the strategies and work programs will depend on the commitment and mobilization of all stakeholders and management partners, both locally and nationally, government and non-government organizations. The key indicators of progress will be social and economic development of the people and the nation, and increased interest and commitment in the coastal environment of Sihanoukville.

### **How will the Coastal Strategy be used?**

The Coastal Strategy represents the ideas of the people in the three districts of Sihanoukville, the district and municipal government offices of Sihanoukville, and the national government ministries, concerned with and committed to building and implementing sustainable economic development and environmental management programs in Sihanoukville. These stakeholders have reached a consensus regarding the direction of development for Sihanoukville and will now commit themselves to the Coastal Strategy and act decisively to ensure that the ideas are implemented. The Coastal Strategy will serve as the ultimate guide to the agreed goals for socio-economic development and environmental conservation in the coastal area of Sihanoukville. The efforts and commitment for implementing the Coastal Strategy will come from all those that have taken part in its creation and all those that have a legitimate interest or stake in realizing the vision for Sihanoukville.

Governor of Sihanoukville Municipality  
PCC Chairman, Sihanoukville National ICM  
Demonstration Project

## ACKNOWLEDGMENTS

The Sihanoukville Coastal Strategy was developed through a series of stakeholder consultation workshops undertaken in August 2001 in the three districts of Sihanoukville, namely, Mitapheap, Stung Hav and Prey Nup, culminating in an area-wide consultative workshop including participants from the local and national agencies. The results of the workshops were prepared into a draft Coastal Strategy which was reviewed, refined and finalized by local and national stakeholders.

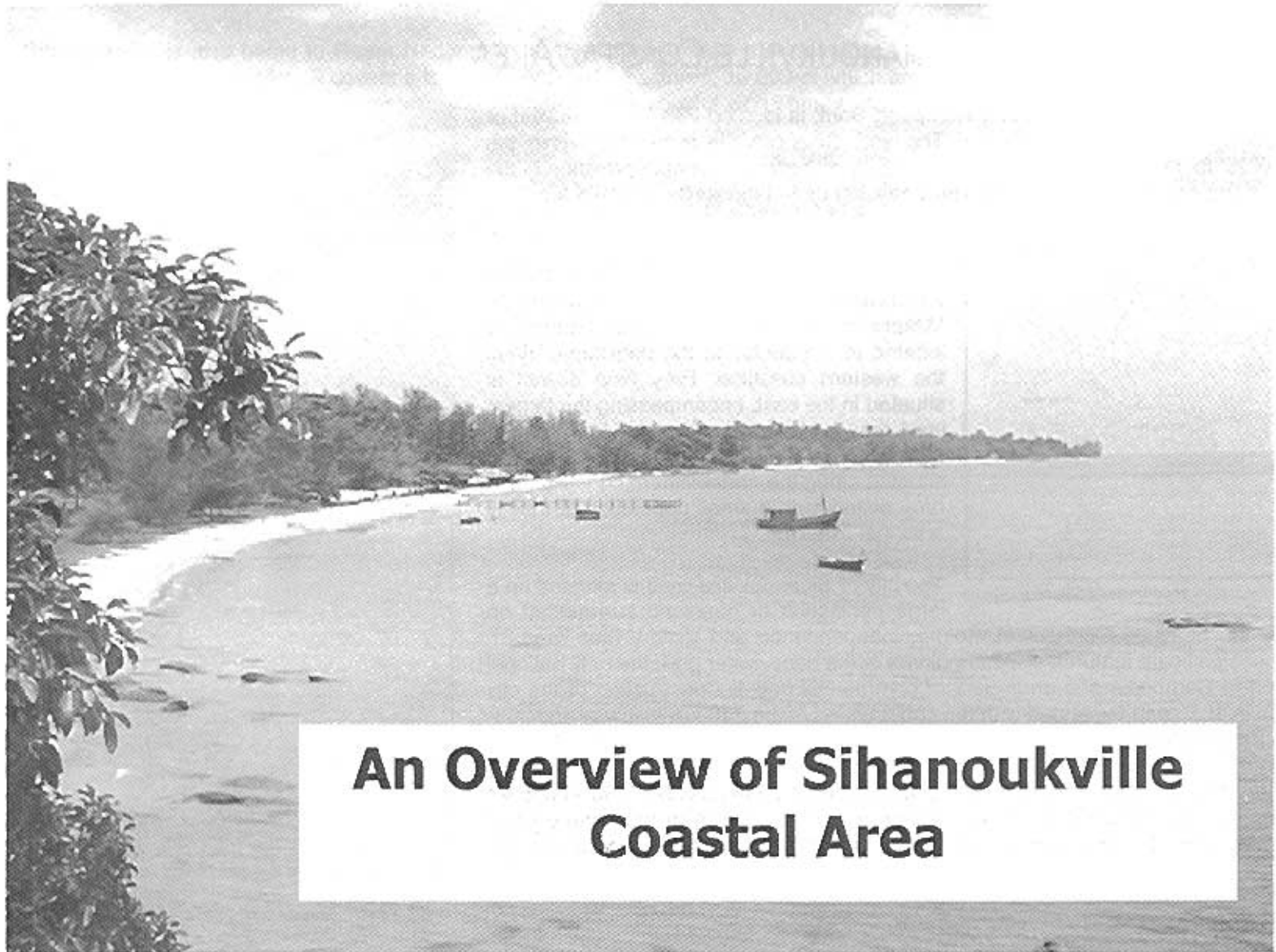
Much appreciation is extended to all the participants of the stakeholder consultation workshops for their valuable inputs to the development of the Coastal Strategy. These stakeholders--fishers, farmers, teachers, village leaders, local and national government officers, business people and other civil society members--shared their indigenous knowledge of the values of Sihanoukville and shared their ideas on how to fulfill their common vision for Sihanoukville.

Special thanks is given to all the dedicated members of the Project Management Office, who gave their full support in organizing and facilitating the stakeholder consultation workshops for the development and review of the Coastal Strategy.

We are grateful to the members of the Regional Task Force organized by the GEF/UNDP/IMO Regional Programme on Building Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), who assisted during the stakeholder consultation workshops and the development of the Coastal Strategy. We also appreciate the efforts of all concerned staff at the PEMSEA Regional Programme Office who made valuable contribution to its development and finalization.

Most of all, we thank the people of Sihanoukville to whom this Coastal Strategy is dedicated.

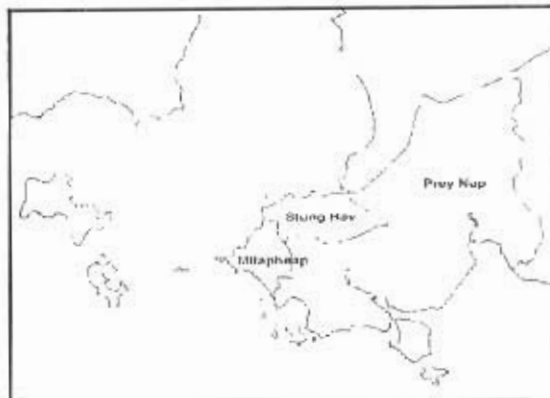
Second Vice Governor of Sihanoukville Municipality  
PMO Director, Sihanoukville National ICM  
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## **An Overview of Sihanoukville Coastal Area**

## SIHANOUKVILLE COASTAL AREA

Sihanoukville, historically known as Krong Kompong Som, is located 234 km southwest of the capital Phnom Penh, along the Gulf of Thailand. Sihanoukville is located within the coordinates 10°25' to 11°N and 103°30' to 104°00' E, lying between Kampot province in the east and Koh Kong province in the north. The coastline of Sihanoukville is 119.5 km long (see map 1).



Map 2. Three administrative boundaries of Sihanoukville.

The city of Sihanoukville itself is situated on a large peninsular or headland surrounded on three sides by the beaches Ochheuteal, Sokha, Independence and Victory (see map 3). One of the most significant features of Sihanoukville is the deep-water port, the only national deep-water port in Cambodia and an important commercial outlet. Construction of the city and port began in 1955 and expanded with the construction of the 226-km highway and 263-km railroad to Phnom Penh.

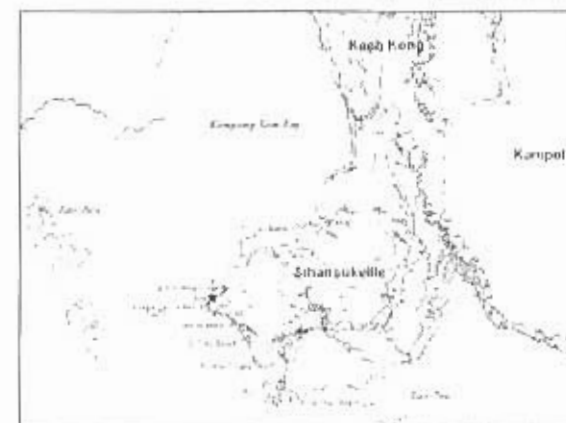
Important fishery resources are found in the waters around Sihanoukville. Two important fishing grounds include Kompong Som Bay, which extends 60 km from the northwestern coastline of Sihanoukville, and Chhak Veal Ring, a rich estuary area located in the southeast.

The municipality of Sihanoukville is divided into three administrative districts (see map 2). Mitapheap, a central business district, is located in the center of the peninsular along the western coastline. Prey Nup district is situated in the east, encompassing the largest land area and characterized by farming and fishing communities. Stung Hav district, situated along the northwestern coastline, is a rural district with a small population of mainly artisanal fishers.

The city of Sihanoukville itself is situated on a large peninsular or headland surrounded on



Map 1. Cambodia.



Map 3. Sihanoukville and surrounding waters.



Sihanoukville is also home to Ream National Park, the country's only marine national park which was established in 1995. The Park is located in Prey Nup district. It covers a total area of 21,000 hectares, 16,000 of which are terrestrial, including a large proportion of mature tropical forest, and 5,000 hectares are marine, including the islands of Koh Thmey and Koh Ses, and the Prek Toek Sap estuary.

Sihanoukville has 20 rivers; the larger ones include Kampong Smach and Toek Sap. In addition, there are about 22 islands within the jurisdiction of Sihanoukville, namely Koh Condor, Koh Chung Loh, Koh Daung, Koh Dek Kool, Koh Kdam, Koh Krabey, Koh Polovay, Koh Posh, Koh Preab, Koh Preang, Koh Rong, Koh Rong Salem, Koh Russey, Koh Sam Pauch, Koh Sramoch, Koh Takeo, Koh Tang, Koh Tey, Koh Thas, Koh Tra-ngoal, Koh Trest and Koh Veal.

# THE PEOPLE OF SIHANOUKVILLE

## Demography

The population of Sihanoukville is approximately 155,690 (1999), with an average population density of 179 people/ km<sup>2</sup>. The majority of the population (75,142) is located in the district of Prey Nup, along the rivers and estuaries of the Veal Ring. Prey Nup is home to some of the original settlers and a majority of the Moslem communities. The most densely populated area, with a population of 67,440, is the business district of Mitapheap, where a majority of the trades people and industries have settled. Stung Hav district with a population of just 13,108 people is the least populated and youngest community of Sihanoukville. In the early 1980's, people from Mitapheap were relocated to Stung Hav and have established their livelihood depending on the near-shore fishery of Kompong Som Bay. Certain components of Sihanoukville's population are transient, with many sailors, seasonal agricultural and port workers creating a fluctuating population. The literacy rate (number of literate people over the age of 7 years) is 64%, of which 56% are male.

## Culture

The population of Sihanoukville is predominantly Khmer. Other ethnic groups include Cham, Chinese, Thai and Vietnamese. As a consequence, the majority (95%) of the people in Sihanoukville are Buddhist by faith. The important Buddhist ceremonies are Khmer New Year and Pchum Ben. Some Khmer also follow animist practices, and pray to spirits such as Arak and Neak Ta. The remaining part of the population consists of Cham people, who are Moslem, and Christians.



## THE VALUES OF SIHANOUKVILLE COASTAL AREA

Allocated as one of Cambodia's three priority areas for national economic development together with Phnom Penh and Siem Reap, Sihanoukville is well recognized for its numerous valuable resources and strong economic development potential. Some of the most significant values of Sihanoukville include the deep-water port, pristine beaches and waterfalls attracting a rapidly expanding tourism industry, and Ream National Park, the country's only marine national park with numerous unique ecological habitats.

### Historical and Cultural Values



Sihanoukville harbors several unique sites of cultural heritage, such as Sihanoukville Port, Cambodia's only international marine port which was constructed from 1955-1960, Independence Square, constructed in 1985 in honor of independence and the Cambodians who lost their lives during the war, the now abandoned Independence Hotel, built in 1964 during Sihanoukville's early development, and the Golden Lions Monument, constructed in 1996, a prominent landmark symbolizing Sihanoukville, located in the middle of the traffic circle between Sokha and Ochheuteal beaches. There are also traditional fishing villages such as Tumnob Rolok near Hun Sen beach, Koh Kchong in Prey Nup and Toek Thla near Kampot province.

All three districts are home to a number of Buddhist pagodas, although many of them are in need of restoration. The most famous pagoda is Wat Chotynieng, overlooking the town of Sihanoukville and featuring paintings depicting the life of Buddha and portraits of Prince Chourn Nath, former Samdech Sang (Highness Monk), who was a leader of the Buddhist community in Cambodia. The other temple, Wat Khrom, contains a building solely dedicated to Yay-Mao, a local deity. Aside from the pagodas, there are other religious cultural centers including St. Michael's Church, built in 1960, serving the Catholic community. The Iber Bilkhalifah Mosque, located near the town center, is utilized by the local Cham community and is considered another important center of culture and religion.

## Natural and Ecological Values

Sihanoukville's richest values lie in its abundant and diverse natural resources. Map 4 outlines some of the key ecological sub-systems found in the area. Descriptions of each specific resource are provided.

### **Coral reefs and seagrass beds**

Coral reefs can mainly be found around the islands of Koh Rong, Koh Rong Sanlem, Koh Russey, Koh Takiev, Koh Thmey and Koh Ses. There are approximately 24 species of commonly occurring hard coral and 14 species of soft coral found in the waters of Sihanoukville. Seagrass species known locally as Smao Kloy, *Enhalus acoroides*, is found in abundance near the mouth of Stung Hav, Kompong Som Bay. Other species include *Cymodocea serrulata*, *Syringodium isoetifolium* and *Halodule pinifolia*.



### **Mangroves**

Mangrove forest and mudflats are intimately associated with tide-inundated saline sediments, and are some of the most productive ecosystems, supporting a rich diversity of aquatic and benthic flora and important nursery grounds for a variety of marine species. Mangroves also function as pollutant sinks or filters and provide shoreline defense against erosion and flooding. Sihanoukville has a number of mangrove forest areas. These are located around Kompong Som Bay, along the coastline of Ream National Park, the Prek Toek Sap estuary and the estuarine area of Stung Kompong Smach and Veal Ring, in Prey Nup district. The coastal bay area of Sihanoukville features about 13,621 hectares of mangroves and 39,000 hectares of rear (in-shore) mangrove. Species of true mangrove include *Avicennia marina*, *Rhizophora apiculata*, *R. mucronata*, *Bruguiera gymnorrhiza*, *B. sexangula* and *Ceriops* spp. In the more brackish areas behind the

mangrove, and along the rivers, rear mangroves can be found, dominated by the species *Melaleuca leucodendron*. These areas have not been exploited commercially, but are utilized by local inhabitants for construction materials and charcoal. It is estimated that 35-45% of true mangrove has either been modified and/or converted into other land uses.

### **Beaches**

Beaches are one of the most prominent natural features of Sihanoukville, spanning most of the coastline of the peninsular and found in many of the islands. Many of the beaches of Sihanoukville feature *Casuarina equisetifolia*, the shrub *Calophyllum inophyllum* and the herbs *Ipomoea pes-caprae* and *Ishaemum muticum*. Some of the undeveloped beaches feature a beach forest formation, beaches that continue into dense lowland evergreen forest on their landward side. These habitats are particularly important to some of the water bird species.





### Endangered species

A number of endangered species are reported to frequent the waters along the coastal municipalities of Cambodia including Sihanoukville. Table 1 lists some of the endangered species in Sihanoukville.

Table 1. Endangered aquatic species and water birds of Sihanoukville.

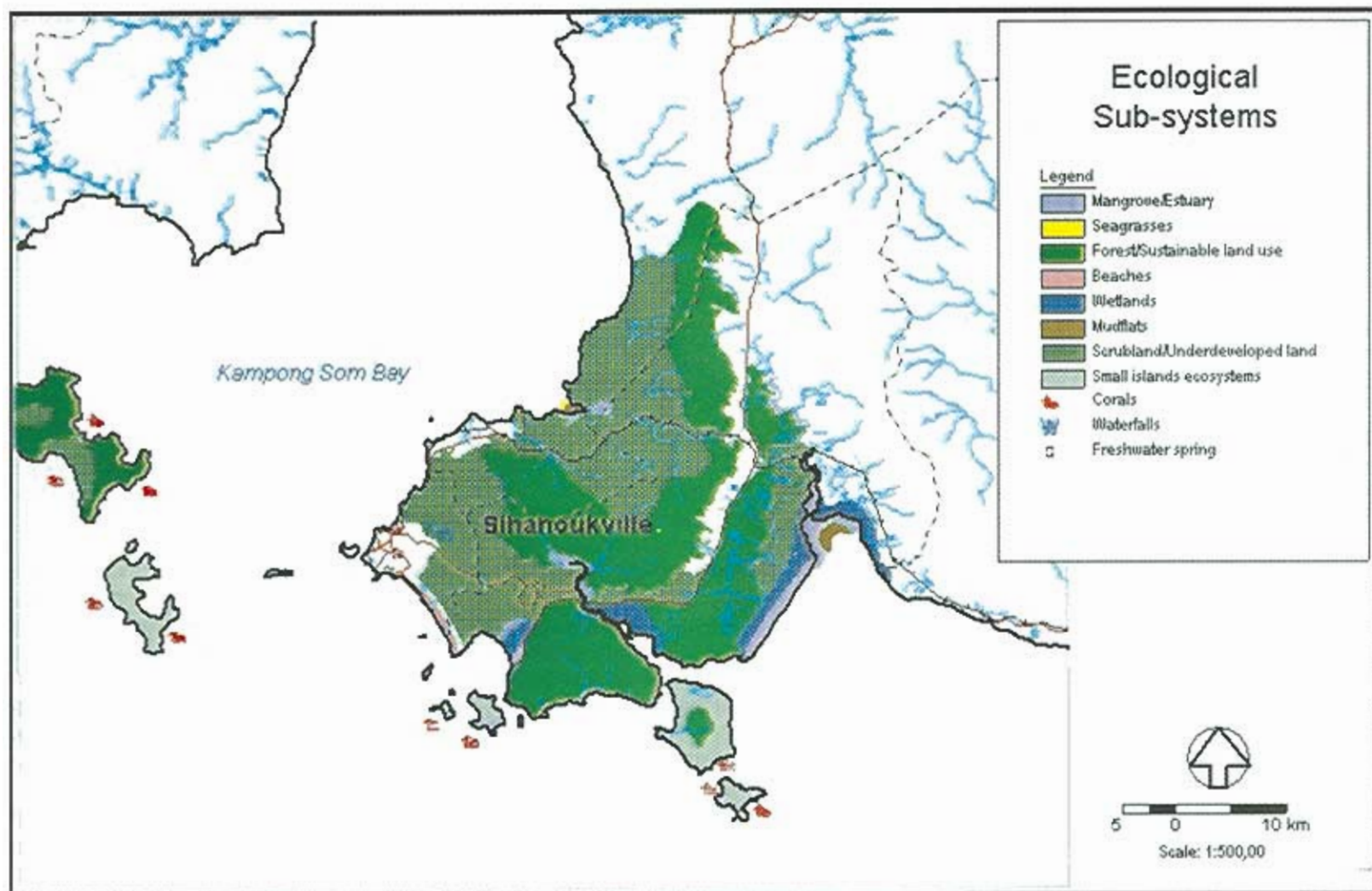
Aquatic Species:		Water birds:	
Marine dolphin	<i>Delphinus</i> spp.	White-winged Duck	<i>Cairina scutulata</i>
Irrawaddy Dolphin	<i>Orcaella brevirostris</i>	Sarus Crane	<i>Grus antigone</i>
Chinese White Dolphin	<i>Sotalia chinensis</i>	Giant Ibis	<i>Pseudibis gigantean</i>
Siamese Crocodile	<i>Crocodylus siamensis</i>	White-shouldered Ibis	<i>Pseudibis davisonii</i>
Giant Catfish	<i>Pangasianodon gigas</i>	Greater Adjutant Stork	<i>Leptoptilos javanicum</i>
Try Trasak	<i>Probarbus jullieni</i>	Milky Stork	<i>Mycteria cinerea</i>
Dugong	<i>Dugong dugon</i>	Woolly-necked stork	
Hawksbill Turtle	<i>Eretmochelys imbricata</i>	Lesser adjutant stork	
Green Turtle	<i>Chelonia mydas</i>	Spot-billed Pelican	<i>Petecanus philippinensis</i>
Olive Ridley	<i>Lepidochelys olivacea</i>		

### National Park (Ream National Park)



Ream National Park encompasses 21,000 hectares of coastal area including sandy beaches, mangrove forests, the Prek Toek Sap estuary, offshore coral reefs and two islands. There is a rich diversity of habitats. The main natural habitats are evergreen forests, freshwater wetlands, mangrove and near mangrove forests, beaches and beach forests, seagrass beds, coral and shallow coastal waters. Approximately 12,500 hectares of forests constitute the most extensive terrestrial habitat. A number of wildlife species can be found in the Park, including water and jungle fowl, rhesus monkeys and fresh water dolphins. Even rarer species include the mouse deer and pangolin.

Map 4. Ecological Sub-Systems of Sihanoukville



Source: DANIDA, including results of stakeholder consultations undertaken in the development of the Sihanoukville Coastal Strategy, August 2001.

## Tourism and Recreation Values

Sihanoukville is considered one of the three most popular tourist destinations in Cambodia, along with Phnom Penh, the commercial center, and Siem Reap, which has the cultural attraction of the temples. Together the three form the tourism triangle of Cambodia (see map 5).

Sihanoukville is known by tourists as a fledgling town, a tropical gateway and port community. The main tourist attractions of Sihanoukville are unspoiled beaches, relaxed atmosphere and nature-based tourism opportunities, especially in Ream National Park, Bokor Park and the islands. A number of tourist resort facilities and services already exist, and the industry is expanding rapidly. There are already three casinos, and an explosion of low-budget accommodation for backpackers being developed to meet and attract the demands from both ends of the market.

The tourism industry of Sihanoukville is expanding rapidly. Between 1993 and 2001, the domestic visitors to Sihanoukville increased from 4,585 to 49,728 and foreign tourists from 8,428 to 10,837. Presently, there are a total of 113 tourist facilities, including more than 38 hotel establishments holding 1,020 rooms. Thirteen of these hotel establishments are within easy access to the beaches. Furthermore, there are 22 guesthouses holding 216 rooms, 22 restaurants, and casinos.

### **Beaches**

Miles of fine white sandy beaches line the coastline of Sihanoukville. These beaches are accessible from the town. The four main tourist beaches of Sihanoukville, namely Sokha, Ochheuteal, Independence and Victory Beaches, each separated from the other by rocky outcrops, provide the main focus of attraction for tourists. In addition, there are alternative beaches: Otres, Ream Chhne Koh Sampauch, Chhne Koh Thmey, which is situated in Ream National Park, and Chhne Prek Treng, which is situated outside the town area. Presently, Sihanoukville has become the premier site for tourists seeking beaches in Cambodia, as the other neighboring coastal municipalities do not have beach resources, and accessibility is difficult due to lack of road connection.

### **Islands**

Approximately 22 islands lie within the jurisdiction of Sihanoukville. These include the larger islands of Koh Rong and Koh Rong Samloem to the west, the islands inside Ream National Park, Koh Thmey and Koh Ses, and also a number of smaller islands found both close to shore and offshore, stretching as far north as the northern tip of Kompong Som Bay. Many of the islands have small beaches and some have been identified as good for snorkeling. These include Koh Khteah, Koh Chraloh and Koh Ta Kiev. The islands of Koh Tang, Koh Prins and Poulo Wai have good environments for diving. Most of the islands are accessible by regular boat trips.



Map 5. Tourism triangle of Cambodia.

### ***Waterfalls – Kbal Chhay***

Kbal Chhay Waterfalls are located in the western watershed area of Sihanoukville on the border of Mitapheap and Stung Hav districts. The series of waterfalls, pools and chutes is one of the popular tourist attractions of Sihanoukville, especially for local tourists.

### ***Transportation***

The national highway road number 4 is the main road extending 230 km between Sihanoukville and Phnom Penh. The coastal roads are useful for scenic drives outside the city. The Kang Keng Airport, 18 km from the city center, is the only airport in the area. Built in the 1960's, the runway is adequate to receive only small charter and private aircraft. Modernization of the airport is one of the most critical development needs for improving the tourism industry and the development of Sihanoukville as a whole. There are a number of boat and ferry services operating from Sihanoukville, transporting tourists to and from the many islands and next door to Thailand. Sihanoukville also has a railway connection running 263 km to and from Phnom Penh. A one-way trip to Phnom Penh by railway takes about 12 hours.

## **Marine and Coastal Resource Uses**

### ***Sihanoukville Port***

The Sihanoukville Port, under the management of the Port Authority of Sihanoukville (PAS), is the only deep-water port of Cambodia. The total length of the Port is 930 meters and is comprised of the old and new ports. The old port, which opened in 1960, was 290 meters in length and has 12,000 m<sup>2</sup> of warehouse facilities and 35,000 m<sup>2</sup> open space for cargo handling. The new port, completed in 1969, is 350 m in length, can accommodate three vessels at a time and contains 24,000 m<sup>2</sup> of warehouses. Besides the general cargo and container berths, the port also contains an oil container port. In addition, there are a variety of cargo handling facilities and services.



With the implementation of the free market economy in 1993 came a rapid increase in the volume of cargo. By 1999, the amount of cargo being handled was 1.14 million tons. The volume is expected to increase beyond two million tons by the year 2005. The main import cargo include rice, general cargo, cement, machinery, sugar, steel, containerized cargo, fuel, and cigarettes. Export cargo leaving the port includes timber, logs, plywood and containerized cargo. To meet the demands of the rapid increase in marine transportation in and out of Cambodia, the government is proposing a new port development including 240-meter container berths, a container terminal of 60,000 m<sup>2</sup> and road within the port area (Figures 1 and 2). In addition, PAS proposes to develop a free trade zone of up to 91 hectares.



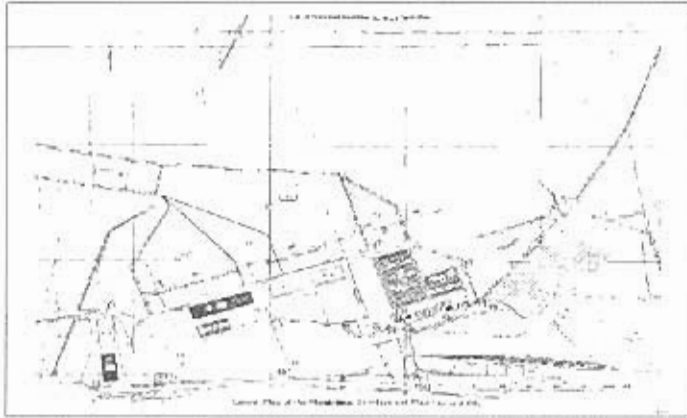


Fig. 1. Sihanoukville port development plan 2005.



Fig. 2. Sihanoukville port development plan 2015.

### ***Marine Fisheries***

Cambodia retains some of the best remaining pockets of fish production in the Gulf of Thailand. Four hundred and thirty-five (435) species of fish from 97 families have been identified in Cambodian marine waters and fish catch per unit effort is reportedly ten times higher than the fish-depleted waters off Thailand. Figure 3 shows the present marine fishing ground of Cambodia.

The offshore waters of Cambodia are commonly thought to contain some of the best remaining opportunities for fisheries in the region, and perhaps more importantly serve a role as providing brood-stock for the rehabilitation of depleted stocks in the rest of the Gulf of Thailand.

The Cambodian commercial marine fish catch rose steadily from 3,000 tons in 1982 to 39,000 tons in 1990 (32% of the total fish production in the country).

From 1990 to 1995, the estimated total marine fishery catch was 33,933 tons per annum. The capture capacity of the fishing fleet is still relatively low since it is largely comprised of unmotorized or low-powered boats that remain in-shore.



Fig. 3. Present marine fishing ground of Cambodia.

### **Aquaculture**

Although aquaculture development in Sihanoukville is currently limited, there is great potential for expanding aquaculture activities in both fin-fish and shell-fish production. Aquaculture production in Sihanoukville has increased about four times in the past decade (see Figure 4).

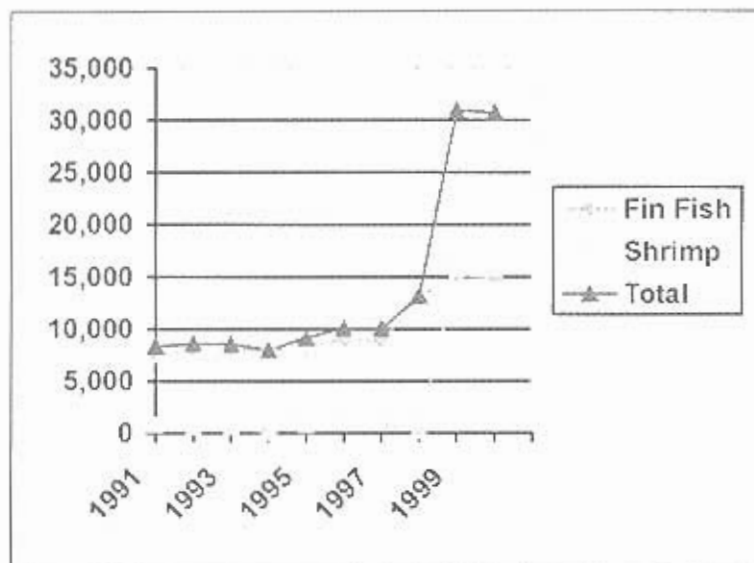


Fig. 4. Aquaculture production in Sihanoukville from 1991-2000 (tons/year).

Constraints in developing aquaculture in Sihanoukville include lack of appropriate technology, lack of expertise, undeveloped market for marine products, lack of processing facilities and low interest. Aquaculture developments in Sihanoukville currently focus on hatcheries for catfish, crab, marine turtles and crocodiles.

### **Agriculture and Animal Husbandry**

Agriculture is mainly centered in Prey Nup district. The main agricultural product is rice. Agriculture is an underdeveloped economic potential for Sihanoukville. Much of the fruits and vegetables available in Sihanoukville are imported from Thailand. Table 2 illustrates the area of agriculture land use in hectares per district.

Animal husbandry (Table 3) mainly takes place in Prey Nup and Mitapheap districts. Poultry and swine are the main types of production.

Table 2. Agricultural land use per district (in hectares).

District	Rice field	Fruit orchard	Other crops	Total
Stung Hav	50	2,571	30	2,651
Mitapheap	110	1,963	118	2,191
Prey Nup	14,903	26,680	275	41,858
<b>Total</b>	<b>15,063</b>	<b>31,214</b>	<b>423</b>	<b>46,700</b>

Table 3. Number of animals per type in the three districts of Sihanoukville.

District	Cow	Buffalo	Horse	Pig	Poultry	Total
Stung Hav	200	12	0	1,072	18,140	19,424
Mitapheap	2,347	279	3	5,151	28,371	36,151
Prey Nup	6,561	10,707	14	8,338	265,499	291,119
<b>Total</b>	<b>9,108</b>	<b>10,998</b>	<b>17</b>	<b>14,561</b>	<b>312,010</b>	<b>346,694</b>

### Offshore Minerals and Oil

There are a number of sites of oil and gas exploration within the EEZ of Cambodia, directly off the coast of Sihanoukville.

Oil and gas exploration activity has started from 1991 to 1994 in 4 blocks:

- 1<sup>st</sup> and 2<sup>nd</sup> blocks by Enterprise Oil company (170 km from shoreline)
- 3<sup>rd</sup> block by Compex Company
- 4<sup>th</sup> block by Premier Oil (100 km from shoreline)

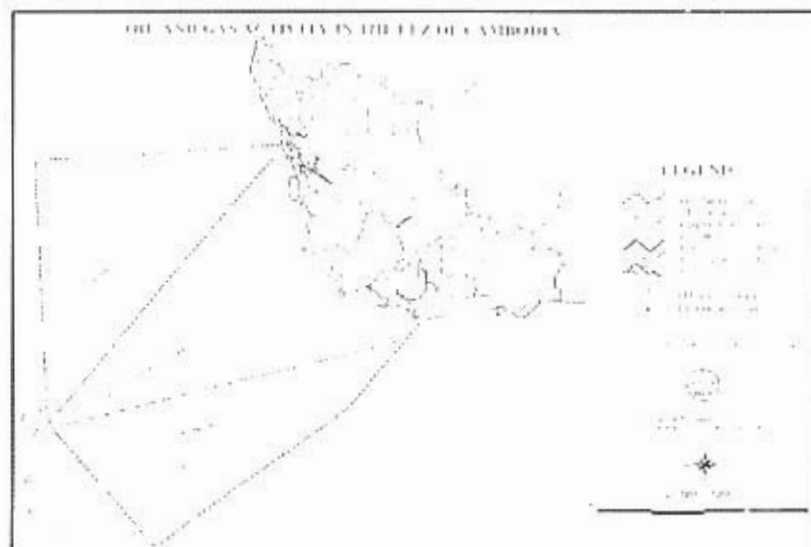


Fig. 5. Oil and gas activity in the EEZ of Cambodia.

## **Other Economic Activities**

Sihanoukville is identified in the National Economic Development Action Plans as one of the most important economic growth areas in Cambodia, along with Phnom Penh and Siem Reap. The following are some of the key manufacturing and commercial activities in Sihanoukville:

### ***Factories***

There are five large factories in Sihanoukville: New Star Factory, a shoe factory employing 1,700 employees, Sun Wah Fisheries Company Ltd., a frozen shrimp processing factory employing 780 people, Rao Yuan Garment Corporation, a garments manufacturing company which employs 360 people, Dong Da Shoes Company Ltd., which employs 229 employees, and Angkor Beer factory (Cambrew), which produces beer and soft drinks, and employs 224 people.

### ***Local Markets***

The main market of Sihanoukville is the traditional market Psah Leu, which sells wet and dry goods, fruits, flowers, electrical goods, stationery, clothes, etc. Night markets, such as the Central Night Market and Psah Leu Night Market, sell mainly food.



### Proposed Development Plans

There are a number of proposed socio-economic development plans for Sihanoukville in addition to the port development plans. These include a new port and industrial development zone, a housing settlement and road construction plan for Stung Hav and a development plan for Ochheuteal beach (refer to figures 6, 7 and 8).

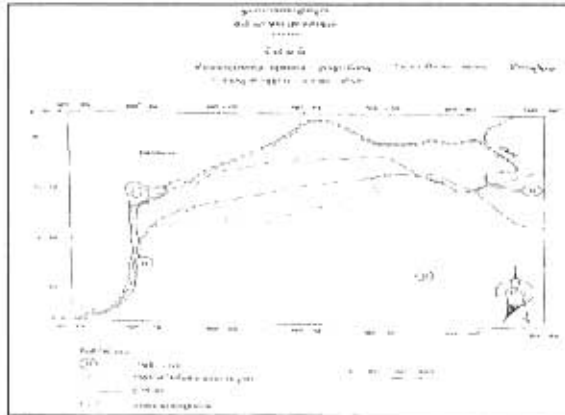


Fig. 6. Industrial development zone in Stung Hav.



Fig. 8. Ochheuteal Beach development plan.

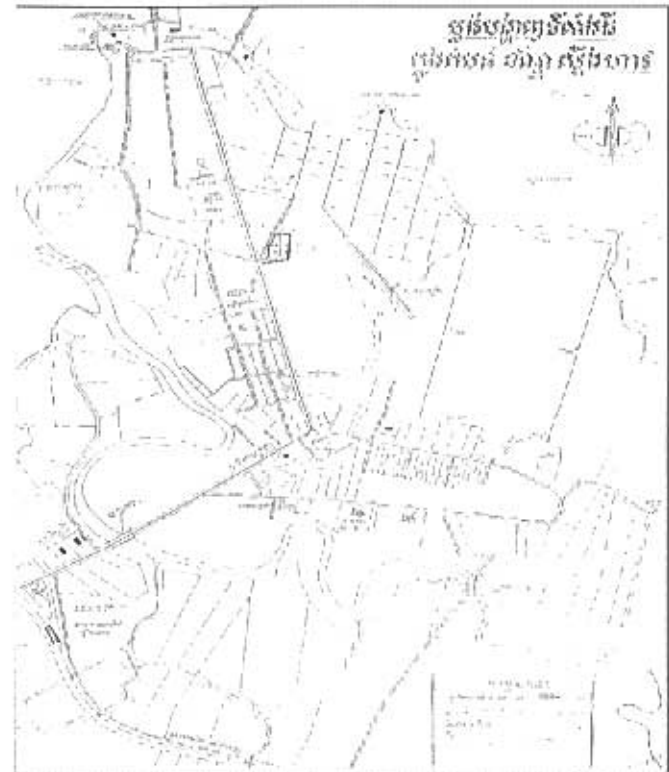
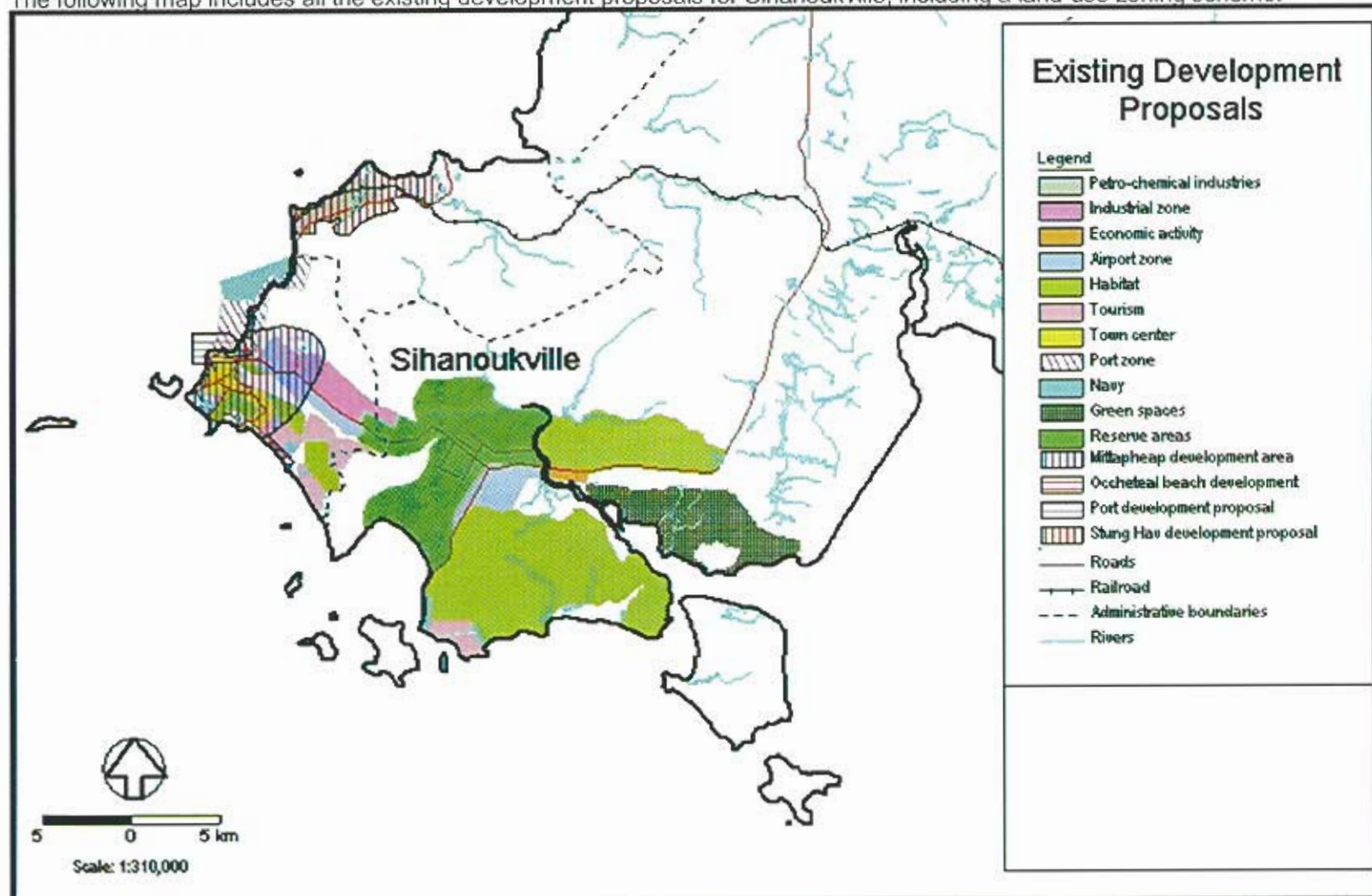


Fig. 7. Development plan for Stung Hav.

## Map 6. Existing Development Proposals

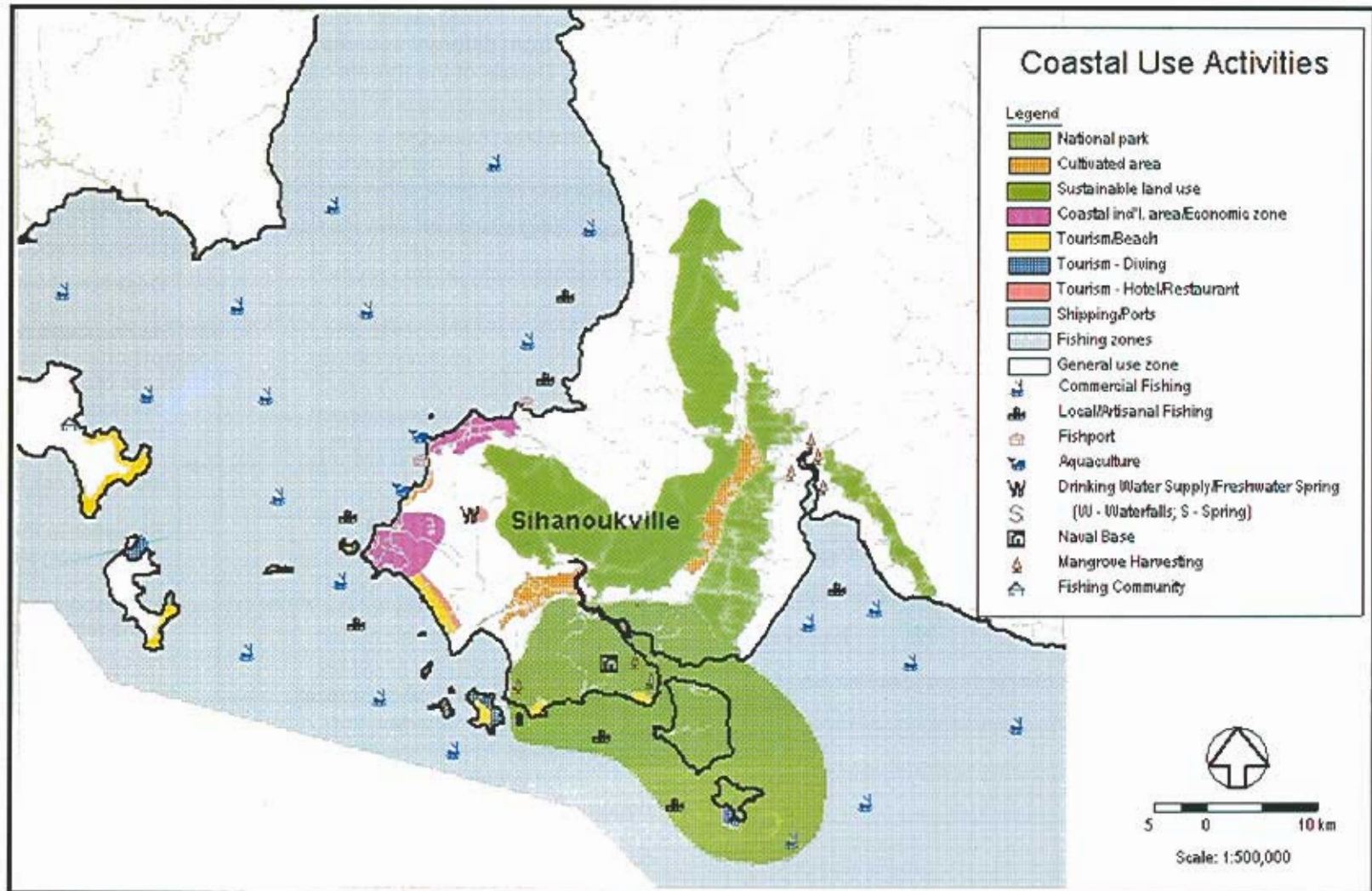
The following map includes all the existing development proposals for Sihanoukville, including a land-use zoning scheme.



Source: DANIDA, JICA, Ministry of Public Works and Transport, including results of stakeholder consultations undertaken in the development of the Sihanoukville Coastal Strategy, August 2001.

## Map 7. Coastal Use Activities

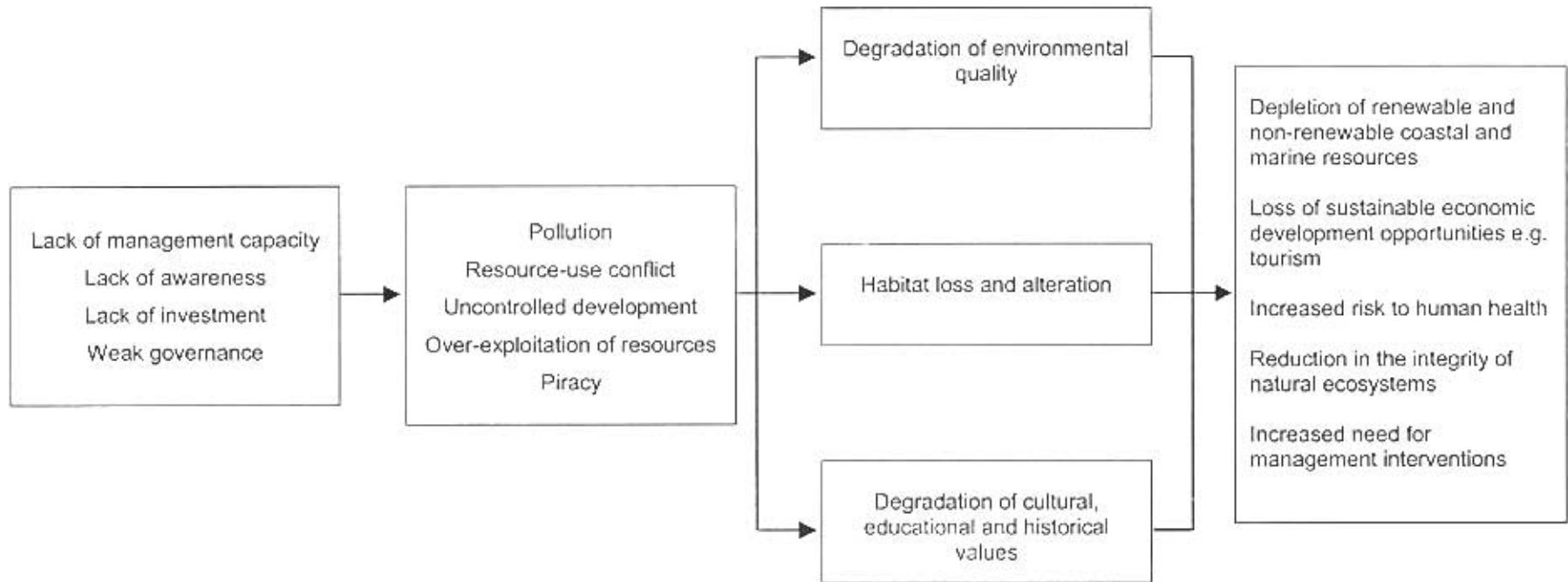
Map 7 summarizes the coastal uses or coastal values of Sihanoukville



Source: Results of stakeholder consultations undertaken in the development of the Sihanoukville Coastal Strategy, August 2001.

# THREATS

Sihanoukville's coastal resources and environment face various threats from different sources. The following table summarizes the key threats facing the sustainable use of Sihanoukville's coastal resources. Details of the threats can be found in Table 5.





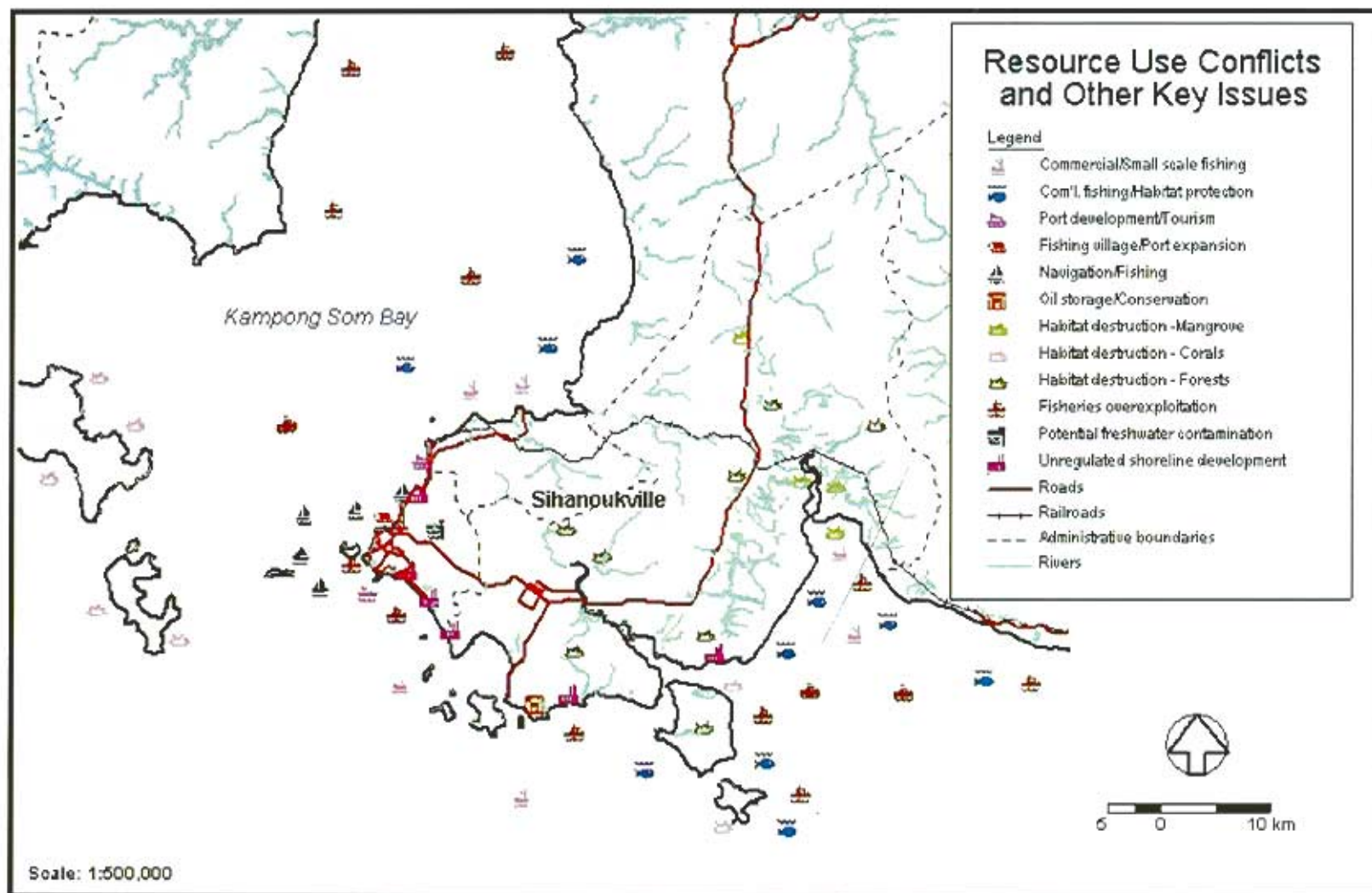
**Table 4. Threats in the coastal area of Sihanoukville (as identified by local stakeholders)**

Threats		Districts		
Problems	Causes	Mitapheap	Prey Nup	Stung Hav
<b>1. Pollution</b> <ul style="list-style-type: none"> <li>• Solid waste</li> <li>• Sewage</li> <li>• Factory waste</li> <li>• Small scale operational oil spills</li> </ul>	Lack of waste/pollution prevention management plan	+	+	+
	Lack of regulation and enforcement governing pollution management	+	+	+
	Lack of facilities and services for solid waste, sewage, toxic waste and oil disposal	+	+	+
	Lack of awareness	+		+
	Fishing community/squatters/dense population/human activity	+	+	
<b>2. Habitat destruction/ loss of biodiversity/siltation/soil erosion</b> <ul style="list-style-type: none"> <li>• Mangrove</li> <li>• Coral</li> <li>• Seagrass</li> <li>• Forest</li> <li>• Wildlife</li> </ul>	Lack of regulations/policy & enforcement/management to protect habitats	+	+	+
	Lack of human resources/capability/leadership/management		+	+
	Land encroachment/habitat conversion (mangroves/forest)	+	+	
	Pollution	+	+	+
	Illegal commercial fishing/Intrusion	+	+	+
	Piracy, corruption, illegal control over resources by illegal traders	+	+	+
	Lack of alternative livelihood and exploitation of mangrove for cheap construction materials and fuel	+	+	+
	Destructive fishing methods (seagrass & corals)	+	+	+
	Demand for wildlife products locally and abroad	+	+	+
	Coral souvenir trade	+	+	+
	Overharvesting of seagrass for animal feeds	+		
	Erosion due to heavy rains	+	+	+
	Lack of awareness & information	+	+	+
	Deforestation	+	+	+
Damage from Civil War		+		

Threats		Districts		
Problems	Causes	Mitapheap	Prey Nup	Stung Hav
<b>3. Multiple resource use conflict</b> Port vs. fishing community  Port vs. tourism  Commercial fishing vessels vs. local artisanal fishing  Oil terminal vs. National Park  Land development vs. environmental conservation	Inequitable control over resources	+		
	Lack of regulations and enforcement	+	+	+
	Corruption and illegal control of resources	+	+	+
	Lack of integrated planning/management/cooperation among sectors	+	+	+
	Centralized authority/ lack of decentralization	+	+	+
	Lack of transparent land planning/ management system	+	+	+
<b>4. Over-exploitation of resources</b>  • Illegal fishing & logging • Destructive fishing practices (trawling, fine mesh, dynamite, fishing during breeding season)	Lack of regulations/ legislation to manage fishing grounds in national territorial seas; open access system	+	+	+
	Lack of enforcement/ corruption	+	+	+
	Destructive fishing methods	+	+	+
	Lack of capacity and resources for management by local authority		+	+
	Lack of awareness and education	+	+	+
	Lack of effective environmental management program	+	+	+
	Increasing population/ poverty/ lack of alternative livelihood	+		
<b>5. Uncontrolled, unregulated development</b>	Weak governance	+	+	+
	Lack of management capacity and resources	+	+	+
	Lack of regulations and enforcement	+	+	+
	Lack of enforcement	+	+	+
	Corruption and misuse of power by military and armed forces	+	+	+

Threats		Districts		
Problems	Causes	Mitapheap	Prey Nup	Stung Hav
<b>6. Degradation and destruction of cultural, educational and historical sites</b>	Lack of management	+	+	+
	Land encroachment	+	+	
	Squatters/ Poverty	+		
	Civil War		+	+
	Lack of resources for maintenance and development		+	+
	Lack of Security		+	
	Lack of human resources/ capacity/ teachers		+	+
	Lack of awareness		+	+
	Lack of respect for the National Park/ poaching/ lack of enforcement	+		
	Burial places scattered and unmanaged/ no system for burial	+	+	+
	Destruction/ lack of restoration from civil war	+	+	+
<b>7. Lack of food security/ lack of local market/ lack of market</b>	Fish are caught in Cambodia and sold to foreign market, as a result local prices are inflated	+	+	+
	Lack of local market for marine fish/fish products	+	+	+
<b>8. Lack of national investment</b>	Lack of processing facilities	+		+
	Lack of investment in infrastructure, roads, transportation, dam		+	+
<b>9. Under-utilized resources</b>	Lack of technology/ capability	+	+	+
	Lack of markets	+	+	+
	Lack of commercial institutions/ budget/ financing for development	+	+	+
	Unstable investment environment/ lack of transparency	+	+	+
	Lack of information/ education	+	+	+
<b>10. Peace and order</b>	Piracy	+	+	+
	Corruption	+	+	+

Map 8. Resource Use Conflicts and Other Key Issues



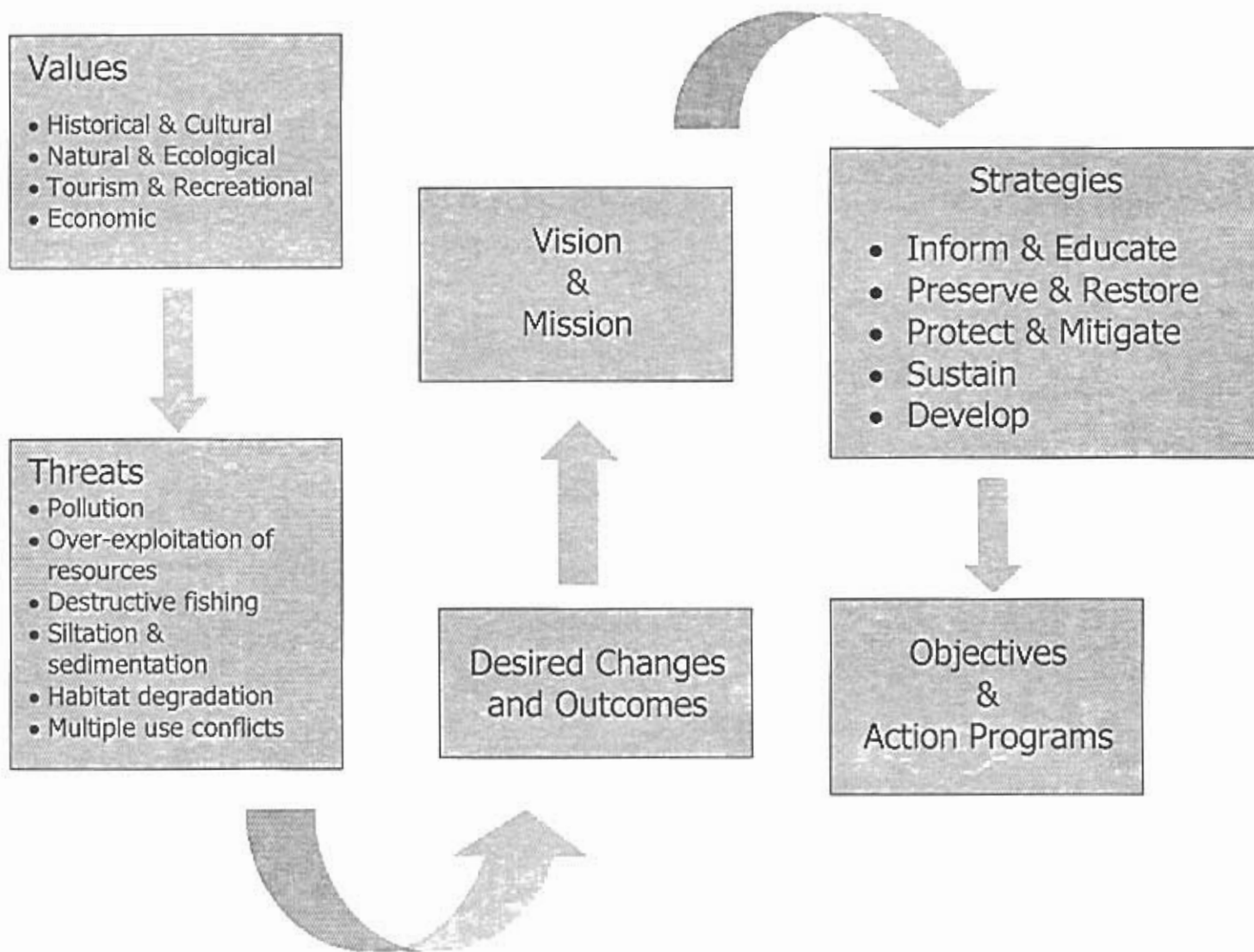
Source: Results of stakeholder consultations undertaken in the development of the Sihanoukville Coastal Strategy, August 2001.

# Response





## PROCESS OF FORMULATING THE COASTAL STRATEGY



## OUR VISION FOR SIHANOUKVILLE

Clean, pristine, healthy and peaceful environment,  
with historical and cultural values restored,  
with marine and coastal biodiversity and unique habitats preserved,  
a center for marine and coastal eco-tourism,  
with a modern international port developed,  
practicing sustainable and responsible fisheries management,  
and enjoying viable local economy

*The vision represents the aspirations of the people of Sihanoukville towards the sustainable development of their coast. It is how they want to see their area in the next 25 years or more. This vision is shared among the various sectors of society who have a deep concern in the future development of Sihanoukville, and willing to take part in achieving this vision.*

## OUR MISSION FOR SIHANOUKVILLE

### **The stakeholders of Sihanoukville will:**

- Adopt a shared vision for Sihanoukville
- Pursue a common strategy to achieve the shared vision
- Declare their commitment to achieving the Coastal Strategy through the implementation of Action Programs
- Share responsibility to address complex environmental threats which are beyond the capacity of any single government agency, community, group or individual

### **Governments will develop innovative partnerships to:**

- Bring local governments and national ministries together to plan and implement effective marine and coastal management
- Facilitate the participation of civil society
- Mobilize the private/ business sector to provide needed environmental investment capital
- Work collectively and strategically with the donor community and international organizations to address environmental management related issues systematically

*The mission states the stakeholders' commitment towards the achievement of the shared vision for Sihanoukville. It is primarily based on partnerships among the various sectors – local and national government, civil society groups, academe, private sector, local communities and donor agencies – who will be working together for the sustainable development of Sihanoukville.*

# DESIRED CHANGES AND OUTCOMES

## Institutional changes

- Establishment of national policy for marine and coastal management
- Municipal government departments capable of and responsible for managing the coastal environments in cooperation with each other
- Close cooperation between national government ministries, the municipal government departments and officials, and the district level government offices
- Environmental management incorporated into economic development plans at national, municipal and district level
- Stable and transparent investment climate able to promote and sustain environmental investment opportunities
- Genuine commitment to implement the international conventions ratified by the National Government of Cambodia

## Operational changes

- Integrated coastal management program implemented by municipal government in the watershed and coastal areas of Sihanoukville with strong support from national government
- System of environmental standards and environmental impact assessment established to guide resource management decisions
- Establishment of comprehensive environmental monitoring program to complement coastal management decision-making.
- Cooperation between neighboring countries to address transboundary environmental problems across national boundaries
- Capacity building programs to strengthen skills for marine and coastal resource management
- Joint research and sharing of information for the management of coastal and marine resources

- Civil society fully engaged in planning and management of marine and coastal resources
- Public-private sector partnerships established as sustainable financing mechanism

## Outcomes

- Existing rich natural resources of Sihanoukville maintained/ preserved in a pristine state
- Damage to natural and environmental resources that has already occurred restored/ rehabilitated and practices that continue to damage the environment stopped
- Effective cooperation between the national and municipal government, and among different sectors, for the implementation of integrated coastal management
- Issues regarding solid waste and sewage management addressed through appropriate management systems
- Risks of catastrophic/operational oil spills prevented
- Social and economic status of the larger population of Sihanoukville uplifted
- Sihanoukville able to regulate and benefit from its own national fisheries
- Existing protected areas strengthened in terms of enforcement and management
- Economic development opportunities maximized for the benefit of the people of the municipality and the nation as a whole
- Rivers and coastal waters safe for public recreation



# BASIS OF THE COASTAL STRATEGY

## **Partnerships**

The Coastal Strategy has been developed by different stakeholders – public and private, district, municipal and national government, non-government organizations, fishers, farmers and teachers of Sihanoukville. It will be these same stakeholders who will work together as partners to implement the strategy.

## **Sustainability**

The Coastal Strategy is designed to promote socio-economic development opportunities while at the same time ensuring environmental protection. The Strategy focuses on building capacity of local stakeholders, including the government, to understand the delicate balance involved in achieving sustainable coastal development and to recognize and overcome constraints in achieving this goal.

## **Synergy**

The diversity of stakeholders – different sectors and users with varying perspectives, skills and expertise – is not a hindrance, but a source of strength and dynamism. The Coastal Strategy, by combining sector inputs and promoting interests of the people from all districts, enhances effective planning, development and implementation, resulting in a synergistic effect towards achievement of the common vision.

## **National and local policies, plans and programs**

The Coastal Strategy builds upon the direction of national and local policies, plans and programs, consolidates sectoral initiatives, and provides a forum for inter-agency and multi-stakeholder information sharing and decision-making.

## International conventions and agreements

The international conventions and agreements provide guidance for actions within the framework of the strategies. The following were signed/ratified by Cambodia:

<b>International Convention/Agreement</b>	<b>Year Signed/Ratified</b>
Basel Convention 1989	Acceded in 2001
UNFCCC 1992	Acceded in 1995
Kyoto Protocol to UNFCCC	Acceded in 2002
Montreal Protocol on substances depleting the ozone layer	Ratified in 2002
Biodiversity Convention 1992	Signed in 1995
Ramsar Convention 1971	Ratified in 1999
CITES 1973	Signed in 1997
Convention for the protection of World Heritage 1972	Ratified in 1991
Marine Pollution Convention 1973/78	Signed in 1994
CLC Convention 1969	Signed in 1994
CLC Protocol 1992	Signed in 2001
FUND Protocol 1992	Signed in 2001
UN Convention to Combat Desertification (UNCCD)	Ratified in 1997

# EXECUTING THE COASTAL STRATEGY

## Who will execute the Coastal Strategy?

The Coastal Strategy requires everyone to take responsibility and fulfill their part. All stakeholders have a role to play.

### National Government

- Delineate the roles of national ministries and departments in various Action Programs
- Ensure that appropriate policies, regulatory and economic instruments are in place
- Institutionalize administrative and budgetary support, as well as planning and approval mechanisms that are consistent with the Coastal Strategy
- Strengthen and institutionalize operational and enforcement mechanisms
- Institutionalize a monitoring and evaluation system
- Build capacity and capabilities to enhance coastal and marine resource management

### Local Government

- Develop and implement local plans of action in support of the Coastal Strategy
- Institutionalize local administrative and budgetary support and planning and approval systems that are consistent with the Coastal Strategy
- Forge partnerships with private sector and civil society

- Mobilize local stakeholders as stewards of the environment
- Identify opportunities for environmental investment that support the Coastal Strategy
- Institutionalize monitoring and evaluation systems

### Private Sector

- Exercise corporate responsibility with regard to sustainable development and use of Sihanoukville's coastal resources
- Invest in the environment and development opportunities that benefit people and the environment
- Work in partnership with the government and communities to implement the Coastal Strategy

### NGOs/Civic Organizations

- Formulate and implement environmental information, education and communication (IEC) programs
- Mobilize communities and other sectors to implement Action Programs
- Forge linkages between environmental and social programs (e.g. gender, poverty alleviation)
- Raise funds for Action Programs

## Academe

- Provide technical expertise and scientific advice relevant to coastal management
- Participate in policy- and decision-making
- Undertake research programs that address information gaps relevant to policy and management issues
- Build local capacity through training and education
- Develop and coordinate education programs

## Communities

- Become informed and knowledgeable about issues affecting the coastal area and the responsibility to manage them
- Participate in coastal management planning consultations
- Support the development and implementation of action programs
- Facilitate information, education and communication (IEC) campaigns to raise environmental awareness

## UN and International Programs, Agencies and Donors

- Support the execution of the Coastal Strategy
- Conduct capacity building, training and education
- Share relevant information and expertise to support implementation of the Coastal Strategy
- Collaborate, forge linkages and cooperation among development agencies for effective implementation of the Coastal Strategy and international conventions
- Cooperate in addressing transboundary issues
- Forge partnerships among foreign investors, companies and local stakeholders
- Leverage financing for environmental investments

# The Strategies





## THE STRATEGIES

- **INFORM and EDUCATE** stakeholders of their rights and responsibilities, and the issues concerning the coastal and marine environment to ensure their involvement and active participation in the development and implementation of marine and coastal management programs;
- **PRESERVE and RESTORE** ecological, cultural and social values of Sihanoukville for the benefit and security of present and future generations;
- **PROTECT** the health of the ecosystem and the well-being of the people, and **MITIGATE** environmental damages caused by various human activities such as pollutant discharges, uncontrolled exploitation of resources, habitat destruction, and unregulated development;
- **SUSTAIN** the important ecological, social and economic benefits that marine and coastal resources provide to present and future generations; and
- **DEVELOP** opportunities for socio-economic advancement for the people of Sihanoukville while ensuring that the environmental integrity of the coastal area is never compromised.

# INFORM AND EDUCATE

***INFORM and EDUCATE** stakeholders of their rights and responsibilities, and the issues concerning the coastal and marine environment to ensure their involvement and active participation in the development and implementation of marine and coastal management programs.*

## Principles

- Well-informed stakeholders understand and appreciate the values of the coastal and marine environment and accept their roles and responsibilities for good coastal management practices.
- Effective communication and networking among all stakeholders is essential to build awareness and cooperation, and to ensure the support needed for the effective implementation of integrated coastal management (ICM).
- Improved understanding and capacity of local managers/ decision makers will enhance the implementation of ICM program.

## Objectives

1. Enhance public awareness and understanding about the dynamics of the coastal and marine environment, coastal environmental management issues and key solutions for addressing them.
2. Enhance the capability of local stakeholders and civil society groups in communication, education and networking.
3. Strengthen the capacity of local and national coastal and marine managers, leaders, policy/ decision makers and enforcement bodies.

**Objective 1: Enhance public awareness and understanding about the dynamics of the coastal and marine environment, coastal environmental management issues and key solutions for addressing them.**

***Action Programs***

1. Formulate a communication plan identifying appropriate communication strategies with special focus on the following issues:
  - Stakeholder rights and responsibilities
  - Marine and coastal habitat destruction
  - Poor waste management practices including solid and liquid waste
  - Potential risks related to catastrophic and operational oil spills in port and harbor areas
  - Unregulated fisheries
  - Poor management of protected areas
  - Unregulated land development
  - Need for cross sectoral cooperation and integrated management efforts
  - Cultural values of society
2. Develop information exchange, education and communication (IEC) materials for the various target audiences identified in the communication plan and conduct awareness campaigns and activities.
3. Institutionalize IEC campaigns such as:
  - Beach clean up for Sihanoukville
  - Education for tourists and tourism operators
  - Community campaign for solid waste management, including reduce, recycle and reuse components
4. Revive Khmer culture and shared value system within the community as a basis for building commitment and cooperation towards good environmental management practices.

**Objective 2: Enhance the capability of local stakeholders and civil society groups in communication, education and networking.**

***Action Programs***

1. Establish media/ information center and mini-library where stakeholders can have access to information on marine and coastal management.
2. Establish and operate the Integrated Information Management System (IIMS) on marine and coastal resources and environment of Sihanoukville.
3. Establish a core group/ task force of advocates, including community educators, mass media, relevant government departments, to facilitate the implementation of communication activities.
4. Strengthen the capabilities of the core group of advocates for planning and implementing IEC activities.
5. Train trainers and community educators, including mass media, NGOs, and school teachers, on the subjects of coastal and marine ecology and management.
6. Develop school curriculum and youth education programs with a focus on environmental management.
7. Develop specific mechanisms to ensure representation and participation of all sectors of civil society in coastal management planning and development.

**Objective 3: Strengthen the capacity of local and national coastal and marine managers, leaders, policy/ decision makers and enforcement bodies.**

***Action Programs***

1. Develop an advocacy/training program targeted at improving the understanding and capacity of leaders and policy/decision makers towards better-informed coastal management decision-making.
2. Undertake special trainings, consultations and visits to other ICM demonstration sites in the East Asian Region to share experiences and improve understanding and knowledge of coastal managers in the implementation of Sihanoukville ICM program.

# PRESERVE AND RESTORE

***PRESERVE and RESTORE** ecological, cultural and social values of Sihanoukville for the benefit and security of present and future generations.*

## Principles

- Pristine habitats and features of ecological, geological, cultural and historical significance are irreplaceable assets, and shall be preserved for the benefits of future generations.
- Rights of indigenous people, coastal communities and Cambodian stakeholders shall be respected and observed to preserve national identity and integrity.
- Restoration of key habitats/ ecosystems that have been damaged is necessary to sustain the life support system of Sihanoukville's environment for the benefit of present and future generations.
- During the Khmer Rouge years, a significant number of social, cultural, historical and ecological features were seriously damaged or destroyed. These features should be carefully identified and restored in order to revitalize the history, culture and environment of the Khmer people.

## Objectives

1. Preserve the health and integrity of coastal resources, ecosystems and habitats and their associated flora and fauna.
2. Preserve areas and features of social, historical and cultural significance.
3. Restore critical habitats, biodiversity and resources, which have been lost or degraded due to damaging human activities.
4. Restore areas and features of social, historical and cultural significance, which have been lost or degraded.



**Objective 1: Preserve the health and integrity of coastal resources, ecosystems and habitats and their associated flora and fauna.**

***Action Programs***

1. Establish a coastal use zoning plan and develop appropriate management programs for each zone, considering in particular following ecosystem components:
  - Fishery and fish stocks
  - Upland and lowland forests and forest products, associated flora and fauna including wildlife
  - Watershed/ catchments areas that feed the river systems of Sihanoukville
  - Estuarine and marshland habitats
  - Mangrove, coral reef and seagrass habitats
  - Beaches and islands
2. Strengthen enforcement of existing legislation, enhance the management capacity and develop necessary regulations and management programs to better protect and conserve the coastal resources, habitats and biodiversity in the Ream National Park.
  - Designating marine protected areas within the Ream National Park, under the framework of coastal use zoning plan, to preserve and restore degraded habitats, increase fish stock and protect biodiversity
3. Develop management programs for rare and endangered species including the designation of protected areas with special attention to their migration routes, breeding, nursery and feeding grounds.
4. Conduct scientific surveys of critical marine and coastal resources and habitats, develop long-term monitoring program employing the local communities and government agencies, and undertake economic valuation of resources and habitats for input into management programs.

**Objective 2: Preserve areas and features of social, historical and cultural significance.**

***Action Programs***

1. Undertake a survey of key areas/features of social, historical and cultural significance for preservation, in particular those related to marine and coastal activities, assessing their importance, status of maintenance, and the stakeholders involved.
2. Designate key areas/features of social, historical and cultural significance for preservation including monuments, traditional dance, language, religion, and arts.
3. Prepare protection measures for long-term maintenance and define the roles and responsibilities of relevant stakeholders for implementation.

**Objective 3: Restore critical habitats, biodiversity and resources, which have been lost or degraded due to damaging human activities.**

***Action Programs***

1. Undertake baseline surveys of critical habitats.
2. Restore damaged habitats such as mangroves, coral reefs, estuaries and beaches to their former state, and establish habitat management plan identifying short- and long-term management measures to address the threats that have caused degradation such as pollution, over-exploitation and destructive fishing, etc.
3. Restore the population of endangered species, which have diminished through hunting, poaching, souvenir trade, medicine trade etc., as well as critical habitats for endangered species.
4. Restore the degraded forest, beach and islands within the Ream National Park through concerted efforts by national government agencies, local governments, and local stakeholders.
5. Develop a long-term habitat monitoring program, which can be implemented jointly by local government and communities, to assess progress and benefits of restoration programs.

**Objective 4: Restore areas and features of social, historical and cultural significance, which have been lost or degraded.**

***Action Programs***

1. Undertake a survey of key areas/features of social, historical and cultural significance for restoration, in particular those related to marine and coastal activities, assessing its importance, the status and main causes of degradation and stakeholders involved.
2. Designate key areas/features of social, historical and cultural significance for restoration such as religious establishments, monuments, arts, dance, language, spiritual practices, etc.
3. Prepare a restoration program and define the roles and responsibilities of relevant stakeholders for implementation.
4. Develop a monitoring and evaluation program to assess the progress and benefits of the restoration programs.

# PROTECT AND MITIGATE

**PROTECT** the health of the ecosystem and the well-being of the people, and **MITIGATE** environmental damages caused by various human activities such as pollutant discharge, uncontrolled exploitation of resources, habitat destruction, and unregulated development.

## Principles

- Protection of the environment from potential damages due to human activities is essential since it is a healthy environment that provides the basis for human health, welfare, economic stability and opportunity for the future.
- Unique habitats and areas of high biodiversity shall be protected in order to maintain their intrinsic ecological, economic and social values.
- Threats such as coastal and marine pollution from land- and sea-based sources, uncontrolled development, physical destruction and other damaging human activities, shall be mitigated and managed to ensure continuity of values and benefits provided by the natural environment.

## Objectives

1. Protect the quality of coastal, ground and surface waters from sources of land-based pollution.
2. Strengthen and improve regulatory measures as well as economic instruments to mitigate adverse impacts of human activities.
3. Strengthen the preparedness and response system of Sihanoukville Port to prevent any potential damages caused by catastrophic oil/chemical spills or operational discharges from ships and offshore oil and gas platforms.

**Objective 1: Protect the quality of coastal, ground and surface waters from sources of land-based pollution.**

***Action Programs***

1. Reduce and minimize the adverse impacts of land-based activities by:
  - Implementing integrated solid waste, agricultural waste and hazardous waste management systems
  - Building centralized municipal and industrial wastewater treatment facilities, particularly in dense settlements and commercial/industrial areas such as Mitapheap
  - Controlling the use of fertilizers and pesticides on agricultural lands
2. Engage tourism sectors and local communities in the environmental management of beach and bathing waters by:
  - Conducting regular beach clean-up activities through concerted efforts among tourism operators, local communities and local governments
  - Developing bathing water quality monitoring programs jointly between government agency and tourism operators
  - Preparing a code of conduct for sustainable tourism operation and promote its implementation by developing a certification/award program of "green tourism" through joint efforts of governments and tourism sector
  - Providing solid waste collection facilities and public utilities/facilities in major beaches of tourism destination
3. Establish environmental quality standards for coastal waters.
4. Develop and adopt effluent standards for wastewater discharges from municipal, industrial and commercial enterprises.
5. Establish protected areas and regulate human use and development activities in critical watershed areas and natural sources of drinking water, including ground and surface waters.
6. Establish a monitoring laboratory to undertake basic environmental monitoring of sea water and freshwater quality.

**Objective 2: Strengthen and improve regulatory measures as well as economic instruments to mitigate adverse impacts of human activities**

***Action Programs***

1. Undertake environmental impact assessment (EIA) before the approval of development projects and apply mitigation measures to reduce any potential adverse impacts.

2. Prepare implementation guidelines on coastal resources and environmental management, in particular concerning with environmental impact assessment, management of marine protected area to restore fishery resources/ habitats, controlling wastewater discharge, etc.
3. Apply economic instruments such as taxes or user fees to reduce, minimize and mitigate the environmental damages caused by coastal development projects.

**Objective 3: Strengthen the preparedness and response system of Sihanoukville Port to prevent any potential damages caused by catastrophic oil/chemical spills or operational discharges from ships and offshore oil and gas platforms.**

### ***Action Programs***

1. Undertake public awareness campaign to increase the awareness of stakeholders regarding international regulations relating to oil/chemical pollution from sea-based sources such as OPRC Convention, HNS Convention, and Civil Liability and FUND Conventions.
2. Develop a comprehensive database to support oil/chemical spill response planning, preparedness and response, incorporating data and information on:
  - Previous oil spills
  - Shipping and port-related activities
  - Ecosystems and habitats
  - Marine and coastal resources
  - Human resources and response agencies
  - Response equipment
3. Prepare environmental sensitivity index map on each sub-area of Sihanoukville coastal area and identify priority areas for protection in case of oil/chemical spills.
4. Develop an oil spill contingency plan through concerted efforts of the Port Authority of Sihanoukville (PAS), Ministry of Environment, Ministry of Public Works and Transport, navy, petroleum industry/offshore oil companies, local governments, fishermen, tourism operators and other relevant agencies.
5. Acquire equipment and facilities for oil/chemical spill response and clean up.



6. Build the capacity of personnel of PAS, local governments and other relevant members of the response team, through training and exercises in oil/chemical spill response.
7. Develop and implement a vessel traffic separation scheme in the port area.
8. Prevent small scale operational spills in ports, oil terminals and fishing harbors by providing waste reception facilities and regulating disposal of used oil/lubricants from all types of vessels.
9. Implement a port safety and environmental management system for the port of Sihanoukville.

# SUSTAIN

**SUSTAIN** the important ecological, social and economic benefits that marine and coastal resources provide to present and future generations.

## Principles

- The needs of the present generation must not be met at the expense of future generations.
- Proper valuation and application of economic instruments can promote sustainable, responsible and regulated use and development of marine and coastal environment and resources.
- Development and consistent implementation of comprehensive laws and policies are essential to ensure that the environment and cultural heritage of Cambodia are sustained.

## Objectives

1. Establish a sustainable fisheries development program at the municipal government level as part of their integrated coastal management program.
2. Ensure the sustainable livelihood of fishing communities and provide technical and institutional support to diversify livelihood alternatives.
3. Apply a coastal use zoning plan to reduce fishery-related user conflicts.
4. Establish cross-municipal/sub-regional cooperative arrangements with neighboring municipalities and countries to address transboundary issues such as unregulated fishing and piracy in national waters.
5. Establish appropriate environmental management programs to sustain the unique value of the islands of Sihanoukville.

**Objective 1: Establish a sustainable fisheries development program at the municipal government level as part of their integrated coastal management program.**

***Action Programs***

1. Identify measures to address the threats caused by overfishing and destructive fishing practices in the waters surrounding Sihanoukville, specifically the fisheries of Kompong Som Bay and Chhak Veal Ring.
2. Build the capacity of local governments to manage near-shore and offshore fisheries within their administrative jurisdiction.
3. Engage fishers to develop and adopt a code of conduct for small-scale and commercial fishing operations in the coastal waters of Sihanoukville.
4. Adopt innovative administrative and legal mechanisms to regulate Cambodia's national fisheries.
5. Establish and maintain a comprehensive fish catch monitoring system to enhance fisheries management decision-making.

**Objective 2: Ensure the sustainable livelihood of fishing communities and provide technical and institutional support to diversify livelihood alternatives.**

***Action Programs***

1. Increase the awareness of fishermen and local communities on the adverse impacts of destructive fishing practices and resource exploitation.
2. Develop appropriate measures to protect the rights and livelihood of small-scale fishers and fishing industry workers.
3. Investigate and apply appropriate fisheries and aquaculture technologies, which ensure the maintenance of fish stock and environmental integrity while at the same time diversifying livelihood options for local fishers.
4. Diversify income sources of fishermen by promoting recreational and sport fishing as tourism activities.
5. Enhance profitability of the fisheries industry by developing post harvest processing and storage facilities, and by establishing new market networks.

**Objective 3: Apply a coastal use zoning plan to reduce fishery-related user conflicts.**

*Action Programs*

1. Define resource use conflicts between large-scale commercial fishing vessels and small-scale artisanal fishing operations in the coastal areas.
2. Determine the conflict between fishing operations and the need to protect fragile fish breeding habitats within the near shore waters.
3. Designate no-catch protected areas and regulated fishing areas for commercial and small-scale fishers within the framework of the coastal use zoning plan, to reduce conflicts and to protect fragile fish stocks and important fisheries habitats.

**Objective 4: Establish cross-municipal/sub-regional cooperative arrangements with neighboring municipalities and countries to address transboundary issues such as unregulated fishing and piracy in national waters.**

*Action Programs*

1. Strengthen national and local capacity to enforce appropriate fishery management regulations and to prevent neighboring countries from exploiting the fishery resources of Cambodia without due compensation.
2. Prepare cooperative arrangements with neighboring municipalities and countries to regulate fishing by foreign vessels and to prevent piracy in Cambodian waters.
3. Develop regulations to manage Cambodia's national fisheries and establish effective enforcement mechanisms, in accordance with internationally accepted codes of behavior and guidelines.

**Objective 5: Establish appropriate environmental management programs to sustain the unique value of the islands of Sihanoukville.**

***Action Programs***

1. Undertake a survey of major islands assessing environmental and socio-economic characteristics, basic infrastructures, logistics connectivity with the main land, and the development potential.
2. Define the functional use (protection, tourism development, etc.) of islands under the framework of coastal use zoning plans.
3. Develop action plans for island protection and sustainable economic development activities, such as tourism.

# DEVELOP

***DEVELOP** opportunities for socio-economic advancement for the people of Sihanoukville while ensuring that the environmental integrity of the coastal area is never compromised.*

## Principles

- Development of coastal area for economic prosperity of Sihanoukville people shall be guided by the integrated coastal management (iCM) framework to ensure that coastal resources are available for the benefit of present and future generations.
- Integrated marine and coastal management requires an appropriate institutional mechanism, local capacity, stakeholders involvement and participation, a strategic management plan, a sustainable financing mechanism and scientific support.

## Objectives

1. Develop appropriate organizational/legal arrangements and strengthen national and local capacity for sustainable and effective implementation of integrated coastal management (ICM) programs.
2. Formulate an integrated coastal use zoning plan to effectively address multiple use conflicts and protect critical habitats.
3. Establish a systematic and transparent system for planning, approval and execution of development projects to minimize any potential adverse impacts to the coastal environment and resources as well as to effectively incorporate the socio-economic needs of local communities.
4. Incorporate the Coastal Strategy of Sihanoukville into national and municipal socio-economic development plans and programs.



**Objective 1: Develop appropriate organizational/legal arrangements and strengthen national and local capacity for sustainable and effective implementation of integrated coastal management (ICM) programs.**

***Action Programs***

1. Institutionalize a cross-sectoral and interagency coordinating mechanism for ICM within the municipal government.
2. Strengthen the capacity of national and local governments and other stakeholders to implement integrated coastal management.
3. Develop and adopt appropriate legislative and regulatory frameworks to support the implementation of the Coastal Strategy and to ensure long-term sustainability of ICM programs.
4. Strengthen enforcement and implementation measures of existing legislation and plans/programs.

**Objective 2: Formulate an integrated coastal use zoning plan to effectively address multiple use conflicts and protect critical habitats.**

***Action Programs***

1. Define functional uses of the coastal zone in Sihanoukville considering present and potential use conflicts and environmental concerns through stakeholder consultation.
2. Formulate guidelines and procedures to direct future use and development according to the coastal use zoning plan.
3. Prepare guidelines for construction of buildings and other infrastructures in the coastal areas.
4. Adopt a beach development set-back scheme to protect fragile coastal areas such as the foreshore and sand-dunes.

**Objective 3: Establish a systematic and transparent system for planning, approval and execution of development projects to minimize any potential adverse impacts to coastal environment and resources as well as to effectively incorporate the socio-economic needs of local communities.**

***Action Programs***

1. Prepare guidelines for planning and approval of coastal development projects to provide clear guidance to local governments for facilitating environmentally friendly developments and investments along the coast.
2. Streamline and integrate the approval process for major development projects to ensure consistent implementation of development regulations and avoid resource use conflicts.
3. Conduct a systematic assessment of the economic development potential of Sihanoukville and prioritize economic development opportunities that will increase employment and income as well as improve the quality of life of the Sihanoukville people.
4. Address the concerns of local communities in implementing the integrated coastal management program, such as improvement of health, education and transportation facilities, and livelihood development for rural communities.
5. Establish an interagency, cross-sectoral and participatory decision-making process for the conduct of development planning and overseeing the execution of projects.
6. Promote investments in sustainable tourism and social infrastructure development.

**Objective 4: Incorporate the Coastal Strategy of Sihanoukville into national and municipal socio-economic development plans and programs.**

***Action Programs***

1. Increase awareness of national and local policy makers and stakeholders on the usefulness of the Coastal Strategy as a strategic policy framework for achieving sustainable marine and coastal development by:
  - Conducting stakeholder workshops to identify priority areas for implementation and define specific roles and responsibilities among stakeholders

- Formulating a medium-term (e.g., 5-year) implementation plan for the operationalization of the Sihanoukville Coastal Strategy
  - Incorporating the implementation plan and its action programs into national/municipal sectoral socio-economic development and environmental management plans
2. Promote environmental investments in line with the socio-economic and environmental objectives of the Coastal Strategy by:
- Designating specific coastal land and water areas for industrial and commercial development within the framework of the coastal use zoning plan and Sihanoukville's socio-economic development master plan
  - Requiring coastal and marine development projects to provide the necessary infrastructure, facilities and services in line with the social, economic and environmental goals of Sihanoukville
  - Relocating inappropriate industrial structures from non-designated industrial/ commercial areas
  - Creating a favorable policy and regulatory environment for investments in appropriate environmental infrastructures and services
  - Applying economic instruments, such as user-fee system, to ensure that coastal users recognize the value of coastal and marine resources
  - Promoting partnerships in environmental investments with the private sector
3. Develop and implement a sustainable tourism development plan by:
- Undertaking a socio-economic assessment of the potential for tourism development in Sihanoukville
  - Designating specific coastal land and water areas for tourism development within the framework of the coastal use zoning plan and Sihanoukville's socio-economic development master plan
  - Preparing an action plan for sustainable tourism development in marine and coastal areas identifying specific measures for promoting tourism while ensuring the health and integrity of coastal resources and ecosystems and contributing to the quality of life of local communities

### Map 9. Spatial Projection of Coastal Strategies

The following map provides a summary of the spatial focus for implementing the key coastal strategies: 1) Preserve and Restore, 2) Protect and Mitigate, 3) Sustain, and 4) Develop.

