

Analysis of past trends and current situation

Key environmental issue: **Biodiversity and landscape**

Con Dao is listed as a highest priority conservation area in Viet Nam's Biodiversity Action Plan and the National GEF Strategy. The World Bank's 1995 publication on Global Representative system of Marine Protected Areas (Vol. III), also lists Con Dao as an area of highest priority for biodiversity conservation. Con Dao is Viet Nam's most important sea turtle nesting ground, and the area is well known for dugong and other rare species. The island group has some of the most pristine coral reef in Viet Nam, and contains 44 endangered species listed in the IUCN Red List and Viet Nam Data Red Book. (*Inception Report, Con Dao Conservation Project, 2007*).

The specific issues for biodiversity are:

- Terrestrial biodiversity
- Coastal and marine biodiversity: Based on the surveys, 280 reef-building coral species in 54 genera from 15 scleractinian families and 20 other corals and related anthozoan species were recorded in Con Dao. Eleven coral species were recorded for Vietnam for the first time in 2002. (*Reef-building corals and coral communities of Con Dao National Park, Ba Ria-Vung Tau, Rapid Ecological Assessment of Biodiversity, WWF, 2002*).

As mentioned above Con Dao Islands are highly valued and therefore protected as an area with unique terrestrial and marine biodiversity. Many endangered and rare species can be found there e.g. an endemic squirrel and probably endemic butterflies, dugongs, turtles, a variety of threatened coral reef fish, etc. Primeval forest with ecosystem providing niches for many species of terrestrial flora and fauna have been protected and rehabilitated. It also plays an important role for preventing soil erosion and keeping water in soil that supply sources of ground water and water reservoirs during dry season. (*Report on Natural Biodiversity of Con Dao National Park, 1999*)

The role of the National Park is key for the biodiversity and landscape protection. Con Dao National Park is recognised as having one of the best park management regimes in the Asia Pacific region (*Inception Report, Con Dao Conservation Project, 2007*). Con Dao protected area which included 6,043 ha of forest and 4 km of sea buffer zone, was originally created by Prime Ministerial Decree 85/QDBT in March 1984 as 'Con Dao Protected Forest'. In March 1993 Con Dao National Park was established in accordance with Decree 135/TTg, which essentially expanded the protected area to 15,043 ha, including 6,043 ha of forest, 9,000 ha of sea and a further 4 km sea buffer zone. In May 1998, the People's Committee of Ba Ria - Vung Tau signed Decree 1165/QDUB approving the second stage of a 5 year Investment Development Project (1998-2002) for Con Dao National Park. This was commissioned by the Central Government (Official Document 1476/VP-KTN) in April 1998, and as a result of this initiative the area of Con Dao National Park was again revised and now stands at 19,998 ha including 5,998 ha of forest and 14,000 ha of fully protected ocean, 20,000 ha of marine buffer zone and includes 14 islands.

Considering above mentioned the current good status of biodiversity in Con Dao area is mainly due to existence of the National Park.

Future trends without SEDP implementation

Key factors that might influence future trends	Likely expected positive or negative impacts of these factors on the given trend
Development of urban and other residential areas	Expanding urban and other residential areas will affect the biodiversity on the islands to a high degree. However, currently, there is only a limited area of land which can be used for new constructions and business activities, since more than 80% is protected as national park land. Since the approval of international status of Ben Dam port, a further increase

	of industrial, trade and business activities (services, gas station, accommodation) might be expected. This will initiate the development of urbanization of the area of Ben Dam i.e. construction of new houses, hotels etc. (<i>personal communication, stakeholders round table, September 2007</i>).
New transport infrastructure system	There are no data on biodiversity loss linked to the construction of current road infrastructure system on Con Dao islands, but the following impacts might be generally expected in case of construction of new roads: <ul style="list-style-type: none"> • Deforestation • Negative effects to coral reefs inshore resulting from soil (and possibly other liquids – oil etc.) flushed down during construction period.
Industrial and business activities	Untreated waste waters released to the sea might negatively affect marine biodiversity. Although there has not been any report on sea water pollution in Con Dao area, the results of analysed chemical data monitoring in 1999 showed that there was high concentration of polluted materials in waste waters being released from industrial production (<i>Environmental Impact Assessment Report for Con Dao, 1999</i>).
Agriculture	The impacts of agriculture to the biodiversity haven't been recorded since small scope of agriculture activities in the area.
National park	Since its establishment in 1993 Con Dao National Park plays the most important role in biodiversity – both terrestrial and marine – protection. If the integrity of the national park is protected (i.e. the role of the national park and MPA is respected) then future biodiversity loss should be minimal. The National Park can control and coordinate activities within borders of the protected area and so ensure the activities are not endangering the biodiversity status.
Deforestation	Construction of a dam for An Hai lake (as a water reservoir) resulted in damages of mangrove forest (<i>Environmental Impact Assessment Report for Con Dao, 1999</i>).
Tourism development	There haven't been any records of biodiversity loss caused by tourism activities. Tourism does not currently include the use of potentially damaging water sports, such as jets-kits, speed boats and game fishing.
Climate change	Two events might be considered as a consequence of the climate change: <ul style="list-style-type: none"> • Typhoon Linda (1997) caused damages of coral reefs and forests, especially mangrove forests, in the Con Dao area • Warm sea stream (2005) caused coral bleaching During Mid October of 2005 a mass mortality of the corals occurred surrounding Con Dao Islands. Affect of fresh water plume from Mekong rivers rarely hit to it but during October 2005 is an exception case. Results from the field survey in October 2005 showed that the mass mortality of corals and benthos focused only on the North-West of the islands whereas there was almost no death recorded in the South - East parts. This might be considered as one of the consequences of the global climate change (<i>A DISCUSSION ON THE MAIN REASONS CAUSING THE MASS MORTALITY OF CORALS AND BENTHOS IN CONDAO ISLAND DURING OCTOBER 2005, Tong Phuoc Hoang Son et al., 2006</i>)

Summary of key trends in the key environmental issue without SEDP implementation

There will be no significant losses on terrestrial biodiversity – the urban development and economic activities will be implemented in and close to current centers of the island and not within the borders of the national park. No new roads will be constructed (or only limited sections around current residential areas). Tourism activities will be coordinated by the National

Park and so controlled.

The marine biodiversity will face more pressures:

- Increasing number of scuba divers and snorkeling tourist will endanger the most visited coral reefs
- Increasing water pollution (municipal water waters, pollution from boats in Ben Dam port) might cause problems
- Negative effects of climate change are likely to become more frequent – typhoons, raising temperature of water etc.

The National Park will coordinate activities within the protected areas (tourism, deforestation, fishing etc.) and so eliminate likely adverse effects to the biodiversity and landscape. Con Dao MPA will be established and so the role of the National Park will be further strengthened.