

# **Menjangan Coral Reef Ecosystem: Exploitation and Management - The Facts**

## **The situation**

- Coral reefs grow in shallow, warm water, mostly near land, and mostly in the tropics; coral prefer temperatures between 21 - 30°C.
- Corals cover 0.1% of Ocean surface, but provide habitat for 25% of life in the Ocean and 10% of food for the world's population.
- Corals protect coastlines from storms and waves, acting as a natural sea defence.
- Corals are aesthetically beautiful. In 1998, the World Resources Institute estimated this beauty as providing a total economic value of US\$375billion a year for more than half of the world's countries.
- Corals store carbon, reducing the atmospheric Carbon Dioxide and therefore the rate of global warming.

## **Problems:**

- Corals ecosystems are incredibly fragile and respond to even small changes to their environment.
- Corals are the rainforests of the sea, but they are disappearing twice as fast. An estimated 20% of coral reefs have already gone and 27% of the world's reef building corals are designated as threatened on the International Union for Conservation of Nature Red List of Species. Overall, 2/3 of Coral reefs are at risk today.

## Menjangan Island and Reef

- Menjangan is an Island off the Northwest coast of Bali. It is part of an archipelago (a group of small islands).
- The Island lies within the Coral Triangle, which is a 2.3 million square mile area that contains over 40% of fish species and over 75% of known coral reef species; this area sustains over 120million people.
- Menjangan Island is part of Bali Barat National Park. Its reef is considered the most spectacular of all the reefs in Bali and as such the island was made a [Marine Protected Area](#).
- The Indonesian word Menjangan means Deer, so the island is also known as 'Deer Island'. This is also partially to do with the fact that it used to be the natural habitat of Bali's Deer, who would swim to the Island every spring.
- Menjangan was designated a Marine Protected Area within Bali Barat National Park nearly 35 years ago. Since then fishers have been persuaded to change from fishing to ferrying tourists. The tourist industry is booming with Menjangan's reefs being considered the best in Bali and attracting 50-100 divers a day! This has been part of an economic shift from primary to tertiary industry.
- Bali has a Tropical Climate, with two seasons annually; A Wet season, which lasts from mid-November to mid-March and a Dry season occurring from mid-March to mid-November.
- Its average temperature is 30°C and its rainfall ranges on average between 50mm and 330mm. The number of daylight hours stay much the same all year, mostly between 9 and 10 hours of sunlight each day.
- Ocean temperatures around Bali range between 24°C and 28°C, ideal for the growth of coral reefs. The reefs have a number of well developed shallow-reef and deeper wall communities.

### Pressures and threats to Menjangan reef ecosystem:

Human factors	Physical factors
Blast fishing, which although has reduced in recent years, is still a	Crown-of-thorns Starfish ( <i>Acanthaster</i>

problem.	<i>planci</i> ) Infestation – these eat the coral.
Pollution from plastic debris	Rising Sea temperatures, due to climatic changes, leading to coral bleaching
Overfishing, even though the area have been declared a utilization zone (meaning that fishing is only allowed for personal consumption).	Nutrient and sediment runoff from Bali (for reefs on the Bali Coastline).
Anchor damage.	

### Management of Menjangan

The Biosphere Foundation has set up a project called 'Friends of Menjangan' with a local Non-governmental Organisation (NGO), which is based in the Bali-Barat National Park. The project aims to bring together interested stakeholders to make a difference to the future of Menjangan and its reef, by working together with local communities and visitors. Below are some of the management actions they have taken:

#### Current:

- Three new signboards to welcome visitors to Menjangan Island were placed on the island. These boards give three clear and simple instructions in English and Bahasa Indonesia: 'Don't break the reef', 'Take your trash home' and 'Don't use an anchor'.
- Mooring buoys protect the reefs from anchoring.

#### Future:

- Facilitating educational programs for the boat divers, tour guides and tourists about reef maintenance and protection.
- Implementing regular beach and reef clean-ups.
- Eradicating destructive fishing by setting up educational outreach programs and co-operative patrols between local government, central government and the fishermen at Menjangan Island.
- Development of sustainable projects that will provide the community with income.

- Setting up school educational programs about reef conservation and waste management.