

GLOBAL CORAL REEF ALLIANCE

A non-profit organization for protection and sustainable management of coral reefs

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7TH INDONESIAN BIOROCK CORAL REEF, FISHERIES, AND BEACH RESTORATION TRAINING WORKSHOP, GILI TRAWANGAN, LOMBOK, NOVEMBER 15-21, 2010

The **7th Indonesian Biorock Coral Reef Restoration, Fisheries Habitat Restoration, and Shore Protection Training Workshop**, was held at Gili Trawangan, Lombok, from November 15-21, 2010 with the kind support of the Gili Eco Trust and the entire Gili Trawangan community.

The Deputy Governor of Lombok opened the workshop, along with Pak Agung Prana, Balinese ecotourism pioneer. The Governor sent the head of the regional Planning Agency, BAPEDA, to discuss future developments.

More than 80 people participated in the Workshop, including a wide range of divers, students, conservationists, scientists, engineers, artists, doctors, and lawyers from all over the world.

As usual, the majority was from Indonesia. They included more than 20 students in Marine Science, Biology, and Forestry at Mataram University, Lombok, all of who were trained as divers for the workshop. All of them are planning Biorock related research projects.

There were also participants from Bali, Java, Sulawesi, and other islands.

Local people from Gili Trawangan island came to learn about the Biorock technology that they have seen installed around their island over the last 5 years: members of the island Youth Association "Remaja, Karang Taruna", teachers from the local primary school, SATGAS (community ocean patrol that prevents fishing with bombs and poisons, and anchoring in restricted zones), students and teachers from the Gili Trawangan high school of tourism, and the Kadus and Kades (head of the village and head of all the 3 islands, Gili Trawangan, Gili Meno, and Gili Air).

Besides Indonesia, participants came from many parts of Asia, including Malaysia, Singapore, Thailand, Kuwait, Qatar, and China, and from Australia, Europe, North America, and South America.

Students learned all aspects of Biorock® Technology theory and practice, including the fundamental physics, electrical engineering, mechanical engineering, chemistry, and biology, along with hands-on training in design, construction, installation, monitoring, maintenance, and repair. They saw documentary films and heard lectures on the latest developments in marine ecosystem restoration. They saw the dramatic growth of corals and fish populations on Biorock reefs ranging in age from 0 to 5 years, and the Biorock shore protection projects that are growing back beaches on the north end of the island that had been severely eroding.

More than 16 new Biorock reefs were designed, built, installed, and planted with corals by the students, bringing the total of Biorock reefs at Gili Trawangan up to nearly 60. These are located in front of dive shops, restaurants, and hotels of Gili Trawangan. The total Gili reef restoration structure is now a whole dive site and many spots for snorkeling where tourists can enjoy observing Biorock structures and their inhabitants. The Biorock projects at Gili Trawangan now rival the **Karang Lestari** Biorock project in Pemuteran, Bali as the world's largest and most spectacularly successful coral reef restoration project.

Biorock is the only method that increases coral growth rate and resistance to environmental stress, so Biorock reef corals bleach less, recover faster, and have higher survival from global warming-caused heat stroke. This course came at a very critical juncture, because 2010 is the hottest year in history, and severe coral bleaching took place

across the entire Indian Ocean, South East Asia, the West Pacific, Persian Gulf, and Caribbean this year, including Lombok.

Water temperatures throughout Indonesia, and many of the most important coral reefs in the world, now remain several degrees warmer than average, and will start to bleach in the next few months if this continues. If it is as severe as is expected, only places with Biorock Coral Arks will have much coral, fish, and beaches afterwards.

Biorock graduates are now trained to restore coral reefs and fisheries, and grow back severely eroding beaches. They can apply these skills as soon as local communities, government policy makers, and international funding agencies recognize the critically urgent need to restore rapidly vanishing coral reefs and the fisheries, shore protection, tourism, and biodiversity services they provide over 100 countries, before they vanish.

Only those with proper Biorock training have the knowledge and skills to implement new projects, and will receive full support with advice, advanced training, and materials needed to start new projects designed to save marine ecosystems from the runaway effects of global warming, global sea level rise, pollution, and unsustainable over-exploitation.



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