

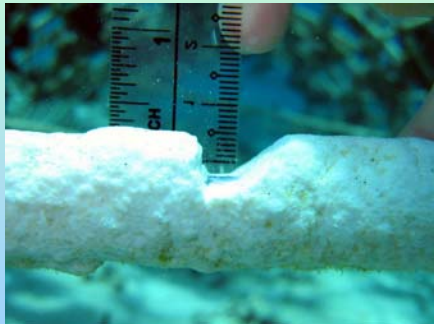


Assembly BioRock structure in Indonesia

MIT First Step Coral

Grand Prize Winner : MIT IDEAS Competition

→ Harnessing in-situ tidal energy in the Philippines to rehabilitate highly threatened coral reef resources using BioRock



Calcium deposited on BioRock



Negros Island, Philippines

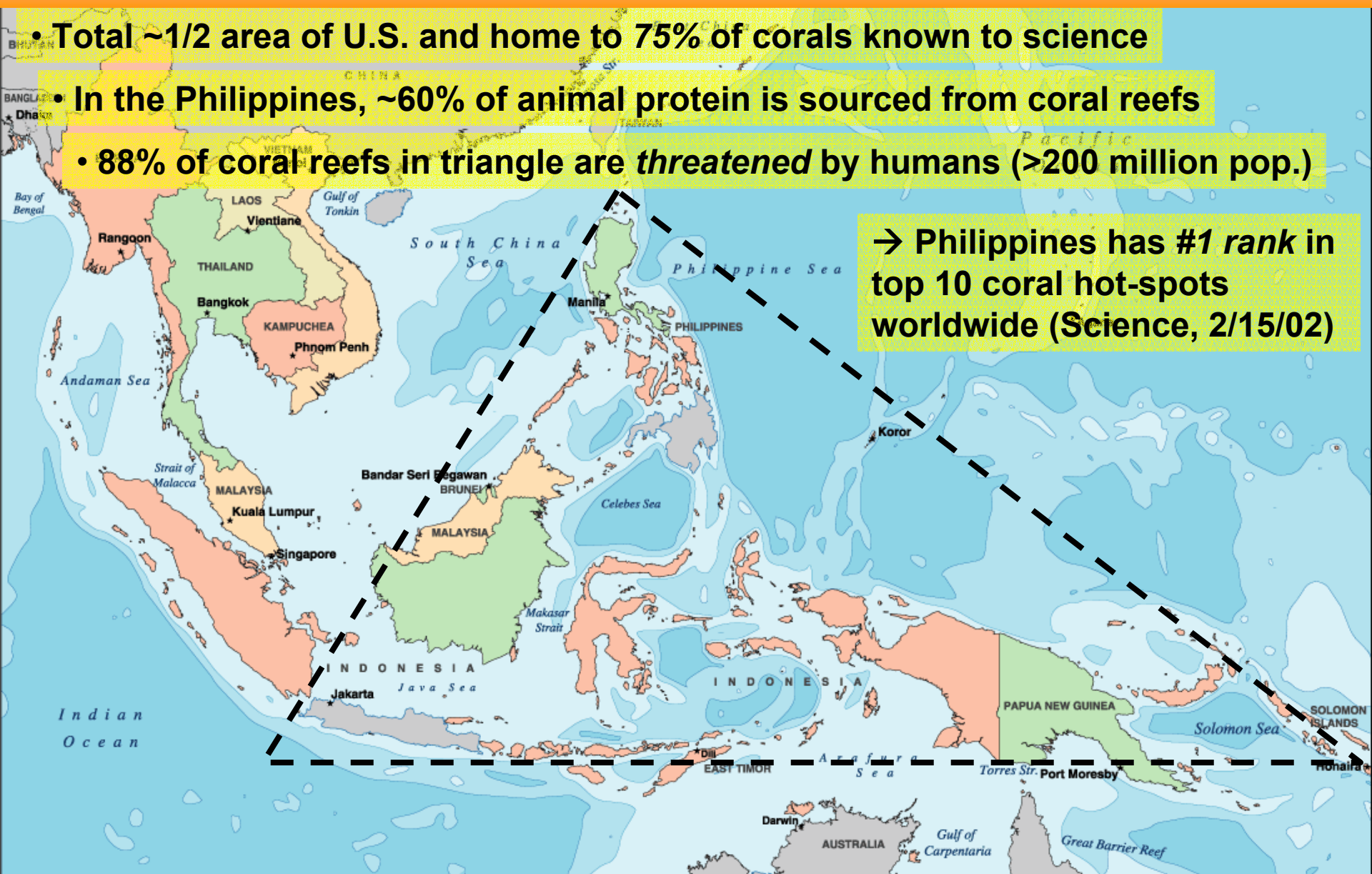


BioRock w/ corals after 4months

Coral Triangle

- Total ~1/2 area of U.S. and home to 75% of corals known to science
- In the Philippines, ~60% of animal protein is sourced from coral reefs
- 88% of coral reefs in triangle are *threatened* by humans (>200 million pop.)

→ Philippines has #1 rank in top 10 coral hot-spots worldwide (Science, 2/15/02)



First-Step Coral System: *Active* Reef Rehabilitation

1. BioRock Process

- Low voltage DC currents to deposit nutrient rich substrates for coral growth



BioRock deployment,
Bali, Indonesia



Increased fish populations in BioRock structure

- Corals *grow 3-5 times faster*
- Increase coral *survival 16-50 times*
- Increases fish population
- Proven in the Pacific, Caribbean tests

2. Gorlov Turbine

- High efficiency turbine to harness in-situ tidal energy to power BioRock
- 1kW system to power a 30sq. meter area of BioRock



3 blade Gorlov turbine with electric generator to be connected to BioRock structure

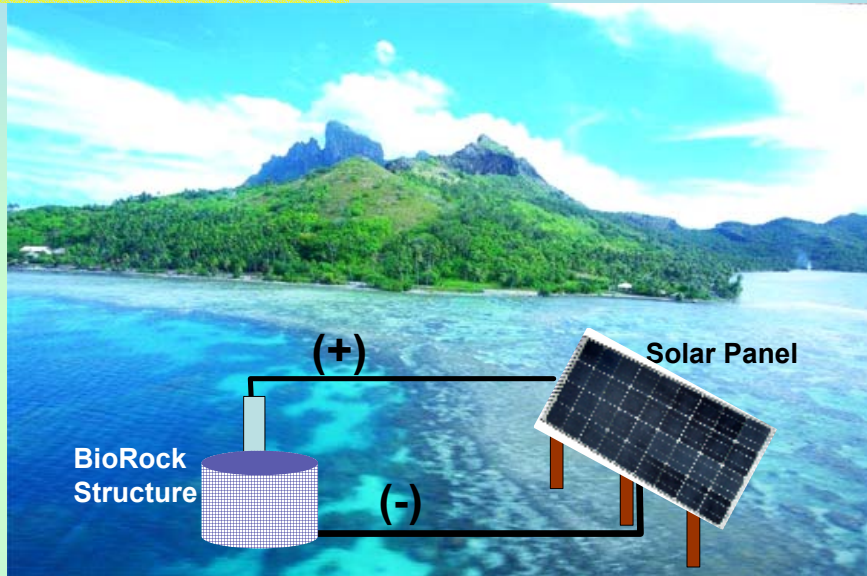
→ These two technologies have never been brought together before

→ Potential to change coral rehabilitation worldwide

First-Step Coral System: *Active* Reef Rehabilitation

Alternative Power Sources

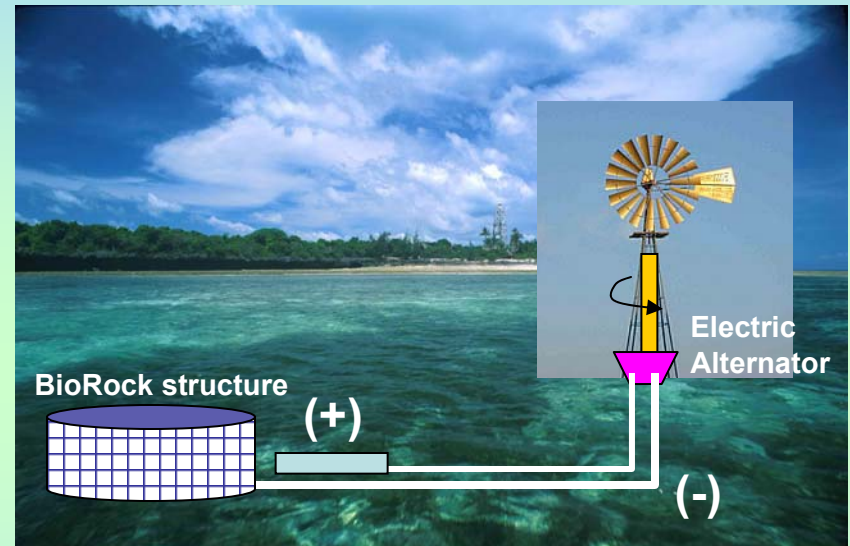
3. Solar Power



BioRock structure powered by Solar Panel array

- Tremendous solar resource in the tropics, 1kW installation for 30sq. m BioRock installation
- Another pollution free, renewable energy source with low maintenance
- Solar energy vastly untapped in the Philippines

4. Windmills



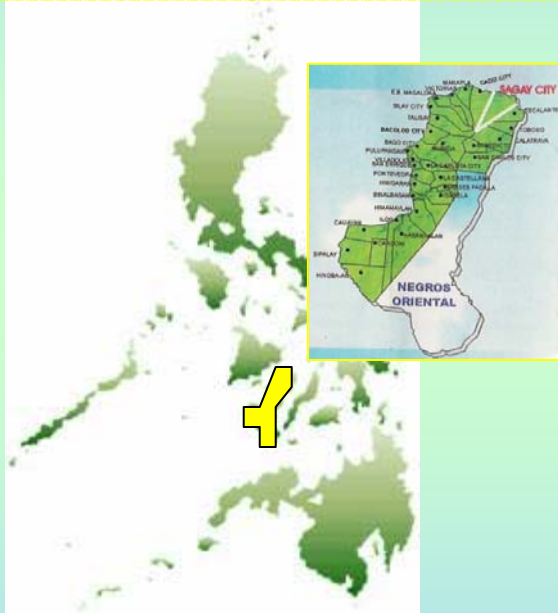
BioRock structure powered by Windmill

- Windmills are well-known technology
- Pollution free and renewable energy
- Easy to construct and deploy
- Wind resources untapped and abundant especially in coastal areas

Community and Impact

Sagay City, Philippines

- Population of 70,000
- Considered a major fishing area bounded by the rich Visayan Sea

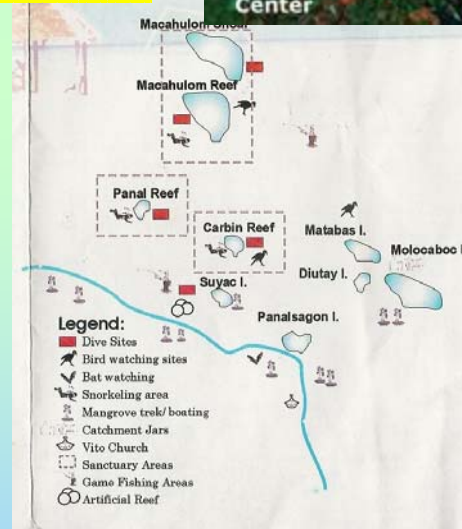


- For the past three decades, dynamite and poison fishing decimated coral formations

In 1995 and 2001, laws passed to establish a **32,000 hectare Marine Reserve and Park Authority**



Marine Museum
Opening June 2006



- Promoting coral rehabilitation will improve fish-catch and livelihood of the local fishermen

Our Team

Thomas J. Goreau, PhD- Non profit partner

Founding partner of Global Coral Reef Alliance and co-inventor of the Biorock(TM) Process of coral restoration. Has implemented numerous Biorock projects worldwide (Indonesia, Jamaica, and Maldives).

Ed Kurth- Technology partner

Licensed supplier of the new Gorlov Helical Turbine.

Gerardo Lao- MIT Student and Team Leader

Philippine Diver and have experience in Electrochemical Processes relevant to BioRock process and sustainable energy methods.

Daniel Walker –MIT Graduate Student

Experience with underwater sensing equipment and remote controlled submersibles. Will help implement the Gorlov Turbine and assist in electrical system integration to convert mechanical to electrical electrical energy to power the Biorock(tm)

Illac Diaz – MIT Research Fellow

A Philippine Diver and graduate student at MIT with various experience in community outreach and non-profit social entrepreneurship programs.

Antonio Cueva- Community Partner

Sagay Marine Reserve Philippines Marine biologist and Head of the Sagay Marine Reserve Authority.

Neil Ruiz – MIT Graduate Student

An expert on labor, migration and economic development in the Philippines. Has participated in various community development and educational programs in the Philippines.

Rhoderick Samonte- Project Facilitator

Sustainable International Development at Brandeis University, World Bank fellow and Rotary Ambassadorial Scholar. Has worked on community development with different NGOs, and former Chief of Staff to a congressman in the Philippine House of Representatives.