

# Against All Odds

Two eco-friendly resorts are helping to protect and preserve Maldives' reefs, one coral at a time

Words by David Espinosa and photos

courtesy of Banyan Tree Resorts



*above:* An aerial view of the luxurious Banyan Tree Resort on North Male's Vabbinfaru Island. The Lotus Project rests on the side opposite the main jetty, while the neighbouring Angsana Resort (out of view) lies two minutes south

*right:* After eight years, the Angsana Resort's Barnacle Project is chock-a-block with healthy corals and other assorted marine life

**Standing at the end** of the resort's jetty, I gaze soulfully at the ocean that stretches seemingly to the edge of the earth. A few metres away, the sea, flecked with shades of turquoise, displays alternating hues of vibrant yellow and red. Healthy corals. A reef pulsating with life.

The temperature on this sultry February afternoon reaches into the mid'30s, with nary the whisper of a breeze. And yet, despite the trickling rivers of sweat running down my neck, I imagine it's tough to find a place more beautiful than the Maldives; it's equally difficult to conceive of anything surviving this heat.

Six years ago, the corals in this quintessential paradise almost didn't.

**Captain Coral** Abdul Azeez Abdul Hakeem is the Marine Environment Advisor for the luxurious Banyan Tree and Angsana resorts, which at first strikes me as odd. Few resorts, if any, would designate funds for conservation; and it's a lofty title, which I soon learn doesn't begin to illustrate the prodigious efforts he's carried out over more than two decades, or his love of the Maldives and passion for preserving the marine environment.

He is a nature boy. That much is evident from the way he speaks of his country, blessed by palm-fringed islands surrounded by cerulean seas bursting with life. The shock of white hair belies a sparkle in his eyes, and Azeez sighs almost imperceptibly before speaking. "We never thought [global warming] would happen to us," he calmly explains. "It was difficult to visualize; in my lifetime I'd never seen anything like it. I cried."

The now infamous global warming event that hit the Maldives in 1998 was devastating. Though precise figures are unavailable, anecdotal estimates rarely vary. Dr Tom Goreau, president of the Global Coral Reef Alliance (GCRA), paints a gloomy picture: he believes the mortality of the corals in North Male alone was 95 per cent; in other atolls the numbers were often worse. But all wasn't lost. With pain came understanding and learning.

Rewind two years, when Azeez met Tom Goreau and Wolf Hilbertz, and the two scientists showed the eager learner how to "grow" corals using just a few steel bars, titanium mesh, cables and a small generator. A light switched. "What I saw was unbelievable," Azeez recalls. "Corals extract carbonate naturally from the water. [Biorock] just did it quicker."

Azeez saw an application for the reefs in the Maldives. And after securing an initial investment of US\$10,000 from the resort's owner, the Ihuru Barnacle was born. Steel bars imported from Singapore were welded together, connected electrically and positioned on North Male's Ihuru Island (what is now the Angsana Spa Resort) house reef. Azeez experimented, and learned using

acropora - the fastest growing, most common coral in the Maldives - and porites. The acropora didn't survive, but the initial porites transplants bonded well to the "carbonate bed", and within three weeks the Ihuru Barnacle was a living reef, complete with fish and other assorted marine life.

Fast-forward to 1998, and while most of the reefs in North Male have died, the survival rate of corals on the Barnacle was between 16 to 50 times higher than the surrounding reefs. Although the corals *may* have bleached (ie. the symbiotic algae died), the difference is they did not die. Which is an important point, according to Dr Goreau. The corals "are either able to make metabolic energy (ATP) on their own, or [we are] providing the energy needed for skeleton growth, leaving more of the corals' own energy for growth, reproduction and resisting environmental stress."

But that's only half of the story. The strain of corals "bred" on the Ihuru Barnacle did not bleach during a recent "hotspot" (in which water temperatures rise, if only briefly). Azeez believes the colonies on the Barnacle are now more resistant, and hopes to use these "super"





*Clockwise from above: Azeez (right) and an assistant record the various species of corals on the Ihur Barnacle project; measuring growth of a head of porites; the only piece of the Barnacle not covered in corals is the opened top*

corals as a garden to re-seed the surrounding reefs. It stands to reason that a reef of corals grown on the Barnacle will resist future warming events. Which is good news for the environment, good news for the Maldives, and even better news for Azeez.

**Sowing the Seeds** As remarkable as reef regeneration is, it's also cost prohibitive. Until such time when he can have several regeneration projects running concurrently, Azeez has developed other means of protecting his backyard. Foremost is transplanting pieces of coral onto reefs, healthy or not.

Azeez has been collecting live pieces of broken coral for half an hour, for coral transplantation on the stretch of reef to the north of the Banyan Tree's house reef. It's not sexy, but it is necessary work nonetheless. "The Maldives is full of fish," Azeez says, bowing his head bashfully, but with pride. "But without corals there would be no fish."

Coral transplantation is labour intensive, and within minutes I

realise this is only a measure to complement reef regeneration. Azeez swims down to point out a small crack on the reef. He swims down again, carefully selecting a coral fragment and handing it to me when he surfaces. I collect a wet saltwater cement ball (mixed by hand on shore), free dive down and wedge the ball into the crack, ensuring there's enough space for coral growth before I twist in.

After 30 minutes of "lung-breaking work, I take stock. Ten corals "re-seeded". One free diver out of breath. Not in vain, though. Floating on the surface, the sun creates shards of light on this small patch, and then it hits me: This is a flower arrangement! However small scale our efforts, we are sowing the seeds for future generations; and it seems to be working.

Just room north of the jetty one of the divemasters, Shaheed, points out small blocks of dead coral. Atop each is what can only be described as a sprig of living coral in bright, bold colours. A ball of porites grows here, a stand of acropora there, straining towards the sun.

These are the initial experiments at "re-seeding", and I couldn't be more amazed. The concrete balls no

## environment



*from top to bottom:* Construction of the Lotus took place on the Banyan Tree beach; the Lotus was "swum" out, and released only metres from the reef's drop-off

longer look like concrete balls, shedding the familiar dull grey colour for tones of light brown and grey to match the reef structure. The corals, too, are a welcome sight. They have grown upwards, sideways and down onto the reef. It is Nature re-inventing itself, and the progress is heartening.

**It's Alive!** It's the last day and I'm anxious to see the star attraction. I had already dived the Banyan Tree's Lotus Project, which sits on Vabbinfaru's western end. Covering the steel bars are small pieces of local corals, and fish are already attracted to the structure. Azeez indicated a length of acropora that, using hand signals to mimic, has grown at least three times its initial size in just a few months. Remarkable growth, but the Barnacle Project on the neighbouring Ihuru is the real success story - they've saved the best for last, and by now I am desperate to dive this piece of "living history"

The resorts' dive manager, Benoit, gives me the shortest of briefings, which sounds easy enough until we drop down on the reef. A heavy current fights us, and but for my excitement to see the Barnacle I would turn back. It's worth the effort, too, for near the end of the dive I see the Ihuru Barnacle. At least I think I do.

In truth I couldn't be blamed for overlooking it entirely. There is the unmistakable tipi-like shape I was told to look out for, but the entire structure, easily five to six metres in height, is covered in all manners of life: various stands of acropora, big heads of porites, sponges and soft corals.

Benoit points out the cables and steel mesh that enable the Barnacle to pull calcium carbonate from the water, growing the corals. What amazes me is the fish seem to prefer this odd-looking edifice to the surrounding, natural reefs. A small window-the only part of the Barnacle not covered in some manner of coral - allows me to peek inside, where I see a handful of oriental sweetlips, some snapper and an angelfish. I poke around some more and manage to find a small blenny.

Over cocktails Azeez and Benoit chat excitedly about my dive on the Barnacle. I remark at the growth, and there's an unmistakable pride in their eyes. Azeez cautions that it will be 15-20 years before the corals' recovery can be fully gauged; I imagine what new discoveries will arise by 2020. Until then, and the days when reef regeneration is more widespread, one man and his staff continue to defy the odds, and work towards a solution that will some day benefit us all.