Blue Ventures Conservation Andavadoaka, Madagascar

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education
research

First hatching of green turtles recorded in southwest Madagascar thanks to Blue Ventures' conservation efforts.

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Research Update, April to June 2008

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Two Green Turtle nests hatch

BV marine biologists have witnessed the first hatching of green turtles recorded as a direct result of their efforts to protect the species in southwest Madagascar.

In a move unprecedented in the region, residents of the remote village of Lamboara have now voted to protect surrounding beaches during the nesting season, outlawing turtle nest raiding and targeted turtle fishing.

The emergence of 92 live hatchlings marks the first success of an awareness-raising campaign launched by BV two years ago. This aims to find and protect turtle nests in the Velondriake area, which covers a 50km stretch of coastline south of Morombe.

"The impact of a small amount of education on the lifecycle and biology of the turtle has been amazing," says Charlotte Gough, BV field scientist and campaign co-ordinator. "People here understand their resources are being overexploited, and that they need to do something to preserve them for future generations. The residents themselves put forward the idea of protecting whole beaches during the nesting season."

Green turtle (Chelonia mydas) hatchlings emerging from their nest.

Blue Ventures worked with the community in Lamboara to guard the nest after a local fisherman reported its location. He had heard about the or-

ganisation's offer of a reward for information on nesting activity.

For Sosy Kadioke, the nest's guardian, the event has been a moving one. It is the culmination of 90 cold nights spent on the beach watching the nest in the middle of winter. Few Lamboaran residents have seen juvenile turtles. "This is a really important time for me," Sosy told BV. "When I brought the only two dead hatchlings into the village it was the first time people had ever seen baby turtles."

The green turtle (*Chelonia mydas*) is found in the waters off southwest Madagascar. But the adults are targeted by fishermen and the nests are usually raided for their eggs. Both the eggs and turtle meat are valuable sources of food in remote coastal villages that are struggling to deal with the pressures of population growth and marine resource scarcity.

In perhaps the most damaging method of harvesting eggs and meat, females are often caught and killed as they leave the beach after nesting. This not only has an immediate effect on the adult population, but it also compromises the future turtle population in the area. Female green turtles will return to the beach on which they hatched to make their own nests when they reach reproductive maturity. BV scientists feared that the amount of nest raiding and turtle fishing meant that females were no longer able to reproduce effectively in the region, a situation that may have led to the local extinction of the species.

"We thought there were no turtles nesting here anymore. But saving this nest has prompted the village to help preserve a species," says Gough. "And our experience of work in this region is that when one village chooses to do something, others follow.

Two weeks after news of the first nest broke, a second nest being monitored on the same beach was also found to have hatched successfully. The nest was reported to BV, but the date it was laid was unknown. It had been feared that the eggs had failed to hatch. Excavation of the nest however, revealed 98 empty eggs, and no unmatured embryos. Twenty five dead turtles found in the nest are believed to have become trapped in trees roots after hatching. The evidence suggests that the remaining 73 juveniles emerged successfully.

BV scientist Charlotte Gough and Lamboara village data collector excavating the turtle nest

BV's initiative to protect turtles started with a modest poster campaign in villages throughout the Velondriake region two years ago. A small financial reward of 20,000 ariary was offered to anyone who reported the location of a turtle nest. But little information was forthcoming. The reward has since been raised to 100,000 ariary, an amount that reflects the value of both the eggs and the adult turtle's meat on the local market. When a nest is reported BV pays for a guardian to protect the beach the nest is on until the eggs hatch.

"It's really encouraging, word about this nest has spread fast and village presidents from elsewhere are already showing an interest in the turtle project," says Gough. "Maybe this means that local residents know of nesting beaches that we are not aware of. We hope so."

PACP Village Exchanges

Blue Ventures is expanding its work in the SW of Madgascar as it commences work on the PACP project 'Projet d'Appui aux Communautés des Pecheurs de Toliara' funded by the government of Madagascar and the Banque d'Afrique de Developpement (BAD). The objective of the PACP project is to help reduce poverty in rural areas in Madagascar with the specific aim of promoting the sustainable development of traditional marine fisheries.

As part of the PACP project, Blue Ventures recently hosted a series of village exchanges, in collaboration with WWF and Reef Doctor, bringing village representatives from the communes of Belalanda and Manombo to Andavadoaka to learn first hand from Velondriake how to establish marine reserves.

The project aims to establish 50 marine reserves along the southwest coast of Madagascar between Soalary and Morombe. The project covers 310km of coast, an area which includes 70 000 inhabitants distributed across 92 villages. Due to the geographical extent of the project, the 310km stretch of coastline has been divided into zones with Blue Ventures working in the commune of Manombo, WWF/Reef Doctor working with communities in the Baie de Ranobe in the commune of Belalanda, and WCS working in the commune of St Augustin to the south of Tulear.

Following the launch of the project, Blue Ventures has also completed the first two stages of the work program with the villages of Fitsitike and Andrevo in the Commune of Manombo. The first stage involved a 2 day training workshop in each village aimed at raising awareness of the purpose and benefits of marine reserves as a management tool and introducing the general steps involved in their creation.

At the end of each training workshop it was announced to the village that the next stage in the PACP project was to take 10 members from each village on a 'voyage d'initiation' or practical village exchange to Andavadoaka. The aim is to open up Andavadoaka as a training centre for villages from other areas to learn in situ and first-hand from members of the Velondriake Association about the experiences and lessons learnt during the implementation of marine reserves and the creation of the Velondriake Management Committee so that the Velondriake model can be replicated in other communities in SW Madagascar.

BV scientist Daniel Raberinary conducting a workshop during the village exchange

The first village exchange took place in Andavadoaka on the 22nd-23rd April. The workshop was hosted by Blue Ventures, WCS and the Velondriake Committee in Andavadoaka and attended by village members from Fitsitike and Andrevo including the President of the Federation of Fishermen of SW Madagascar, together with representatives from PACP, WWF, Reef Doctor and Fimihara (a community based association based in Ifaty that was set up with the support of Reef Doctor). The workshop was officially opened on the 22nd April by the President of Andavadoaka and the PACP project and all partners were introduced. The workshop provided members of the Velondriake Association with an opportunity to act as both trainers and facilitators during the 2 day training workshop.

The second village exchanges took place on 12-13th June and 14-15th June and was once again a collaborative multi-partner initiative involving Blue Ventures, the Velondriake Association, WWF and Reef Doctor.

A total of 72 participants attended the exchanges over the four days in June, including representatives from 14 villages involved in the PACP project from the Baie de Ranobe and the commune of Manombo where WWF/Reef Doctor and Blue Ventures are working respectively. The workshop was also attended by members of the local government from both communes, representatives of Fimihara and representatives from the villages of Maromena and Befasy, to the south of Anakao, who, with the support of WWF, have created an octopus no-take zone based on the experience of Andavadoaka.

The marine reserve component of the PACP project is based on the success of the octopus no-take zone of Andavadoaka and thus the aim is to replicate the Velondriake model in other communities in southwest Madagascar. The idea behind the village exchange is for villages participating in the PACP project to learn in situ and first-hand, from both members of the Velondriake Committee and residents of Velondriake, about the experiences and lessons learnt during the implementation of marine reserves and the subsequent establishment of the community managed network of marine protected areas. On their return to their own villages, the sharing of information and knowledge assimilated during the exchange, is anticipated to act as a catalyst, encouraging each village to create their own marine reserve to promote the sustainable management of marine resources.

The first day of the workshop was a classroom-based training session, led by members of the Velondriake Committee and supported by BV facilitators, to explain the processes behind the creation of marine protected areas, based on the experience of Velondriake. Prior to the workshop, members of the Velondriake Committee each prepared training materials relating a different part of the process including the history of Velondriake, the management structure, the zoning plan for the Velondriake marine protected area network and the dina (local law) that regulates resource use in Velondriake. The village exchanges are thus not only providing an opportunity to publicise Velondriake, but are also providing a prime opportunity for building the capacity of the Velondriake committee through the 'training of trainers'.

The second day of the exchange was spent by each group visiting the villages of Lamboara and Antsatsamoroy, with the aim of visiting an existing marine reserve and talking to villagers to find out more about their experiences first hand. Through visiting areas outside of Andavadoaka and interacting with people from other Velondriake villages, the participants were able to validate what they had learnt about Velondriake and witness first hand community-based marine resource management in action.

BV scientist conducting a workshop with the Velondriake committee and the village representatives they were hosting

During the visit to Antsatsamoroy, the participants were split into three groups based on different activities. The first group visited a fishing site that was closed as a temporary octopus no-take zone by the villages of Antsatsamoroy and Nosy Mitata in 2007. The second group, comprising a team of divers equipped with masks and snorkels, visited one of the sites that the community has proposed as a permanent marine reserve. The third group remained in the village and conducted a door-to-door questionnaire to find out first hand from the residents how the marine reserve was created and the effect it had on the productivity of their fishery.

The opportunity for other Velondriake villages to host visitors from outside the region, not only served to expand the exchange of experiences, but also gave local residents the occasion to learn more about the PACP project. The realisation that an initiative, which they have played an active role in creating, is being replicated in other coastal communities in southwest Madagascar, will undoubtedly serve to instil a sense of pride and achievement in communities in Velondriake.

The exchange – which was the third and largest to date - provided a real forum for the sharing of ideas, experience and knowledge between people from a diversity of roles and regions. The exchange of information worked in both directions and served to broaden the horizons of the Velondriake Committee. It was encouraging for Velondriake to learn about other marine conservation initiatives, such as the 'Massif des Roses' - a marine protected area created by Reef Doctor and FIMIHARA, which is a major tourist attraction and

generates considerable revenue from user fees.

At the close of the workshop, the feeling was very positive with all the participants convinced of the need to create marine reserves and keen to return to their villages to share their experiences. As an indication of the far reaching success of the exchange, the village of Ifaty is now considering closing 1km of reef to octopus fishing for a period 6 months starting in October 2008.

Equator prize ceremony

The official ceremony of the handing-over of the Equator prize occurred on April 26, 2008, under the direction of the Cabinet Director of the Ministry of the Environment.

The ceremony was also attended by representatives from the south west of Madagascar, including government officials from the region of Menabe, the Director of Fisheries in Tulear, the Regional Director of Tourism, The Deputy of Madagascar in Morombe, The Chief of District of Morombe and The Mayor of Befandefa.

Monsieur Roger, the President of the Velondriake committee, and the former President of Andavadoaka receiving the Equator Prize

The Cabinet Director of the Ministry of the Environment explained that the prize ($30,000) will be used to bring electrification to the village of Andavadoaka. He then proceeded to intro duce 'ADER' (Association for the Development of Rural Electrification), who will aid in the development of the electrification plans in the village through the installation of solar panels. He also congratulated Andavadoaka and Velondriake for their efforts on environmental protection. The ceremony ended in a celebratory lunch for all those who took part in the ceremony.

Managers of Marine Protected Areas meet in Madagascar

Managers from Marine Protected Areas of the Western Indian Ocean attended a meeting to share experiences on financing MPAs and to explore how MPAs can become financially sustainable in the long term.

Garth Cripps represented Velondriake and Blue Ventures. The diversity of MPA financing was striking: The Seychelles has well-financed protected areas thanks to the combination of philanthropy, private investment and strong government institutions, together with a small, wealthy population. The Comoros and Madagascar are at the other extreme: large communities who are dependent on marine resources, limited government funding and strong reliance on foreign donor finance and support from international NGOs.

Fees paid by the two million tourists who visit Mauritius each year finance its MPAs, run by the government. Inevitably they are managed to accommodate the tourist industry. Its economic clout and the high visitor frequentation mean that conservation objectives are not always achievable. In Reunion long efforts to establish a full MPA have had limited success, despite adequate financial backing and a wealthy, educated population who are not dependent on marine resources. Money is not the key ingredient.

Everybody at the conference agreed on one point: applying for donor finance is onerous, a drain on the resources of even the larger MPAs. (Some employ specialist consultants to write proposals and promote them with particular donors.) Many proposals are not successful; those that are often come with time-consuming evaluation and reporting conditions. Relying on this financial model is not going to allow a multiplication of conservation efforts to a scale where broad, real impact will be achieved, nor will MPAs dependent on mass tourism revenues, where conservation becomes incidental to the main business. We're swimming against the tide of 'business as usual', which undervalues the ecosystem.

The hotel development policy of the Seychelles government reflects a truer value of ecosystem worth. Before building a hotel in the Seychelles, an investor must make a minimum contribution of one million USDs to an annuity. Interest from this is used to protect and manage the marine environment around the hotel. That this requirement has not deterred investors from the Seychelles gives a measure of the commercial value of unspoilt coastal landscapes and healthy coral reefs. It is a telling lesson for Madagascar, where foreigners can acquire coastal property for a pittance and develop it with little regard to the environment. It also shows the business potential of marine conservation.

Sale of carbon credits earned through the sequestration of carbon dioxide can be used to protect mangrove forests

Of the MPAs presented at the meeting Velondriake was unique in that it is significantly supported by a social enterprise – Blue Ventures, whose sole objective is to invest its revenues in conservation. Blue Ventures' work in establishing 50 NTZs elsewhere in the South West is also unusual in that it is financed by the Bank of African Development and forms the basis of an economic development project for rural coastal communities.

Blue Ventures wants to take its biodiversity business model, currently based on eco-tourism, further to enable a more flexible and timely financing of conservation and at the same time bring economic benefits to local communities. Beneficiaries of the eco-system services provided by the protected area would pay a user fee for these. Some examples include: the sale of carbon credits

earned through the sequestration of carbon dioxide by protected mangrove forests; or the payment by commercial fisheries for the increased fishery productivity and sustainable management of their business resource capital that the MPA provides them. The vision is to build Velondriake into a social enterprise that would bring real benefits to communities as a reward for the proper management of their marine resources. It is a model that would be more reproducible. To attain it we would need solid community-based natural resource management, the scientific monitoring to prove the business case and the legal instruments necessary to negotiate payments from outside beneficiaries.

Fins from an estimated 6000 sharks that had been collected by a 'middle-man' from Morondava in the shark fin trade.

Shark and turtle monitoring programme expands

In May 2008 Blue Ventures initiated a second shark and fisheries monitoring programme, this time in the Morondava region of southwest Madagascar, approximately 250 km north of Andavadoaka.

Training the new sous-collector in the village of Betania, just south of Morondava.

The expansion of the monitoring programme follows a pilot project in Andavadoaka that has now been running successfully for 18 months. The new project in Morondava aims to not only reveal the extent of the shark and turtle fisheries in this region of Madagascar but also to see the effect of the traditional northward migrations of Vezo fishers along the southwest coastline during the summer months (June to December).

The programme employs a network of "sous-collectors" in each of the villages currently included in the programme. Villagers are trained to collect biological data on each shark and turtle landed in their village as well being a given a camera to take photos of each animal brought in.

At present, the new project is monitoring the catch in ten villages including the two offshore islands of Nosy Be and Nosy Andramitaroky. These islands are populated almost entirely by fishers who have migrated here from the south for the summer months. Migrant fishers come to exploit the shark-rich waters of the Mozambique Channel.

The project will also monitor the shark fin collectors in the region and record the number and quality of fins they collect, along with their village of origin.

In the first two months of the monitoring a total of almost two hundred sharks and turtles have been landed and recorded, along with the fins of a further 6000 sharks collected from the whole of the southwest region.

The aim of the monitoring it to not only highlight the extent of the two fisheries in the Morondava region but to also help to understand the impact of fishers migrations and the implications for the development of marine reserves in southwest Madagascar.

Women's Associations of Lamboara and Andavadoaka

There are two Women's Associations within the Velondriake protected area, based in Andavadoaka and Lamboara respectively. Each Association works independently of the other, but both are founded on the same principles and have the same goals. They aim to promote alternative livelihoods for women whilst contributing to the management and development of Velondriake.

April to June this year has been a time of celebration for the associations. As part of the PACP village exchanges, the Women's Association of Andavadoaka welcomed 25 visiting fishermen from the villages of Andrevo and Fitsitike (in the Rural District of Manombo). Representatives from the Velondriake Committee, Blue Ventures, PACP and WCS, as well as the fishermen, were hosted for lunch by the Association during the visits. The experience served to further improve the exchange of knowledge and experiences between villages.

During the Equator Prize ceremony in April, festivities were organized by various groups, including the Women's Association of Andavadoaka and the children's environmental club, Aloalo. The Association composed a song explaining the creation of Ve-

londriake, its activities and its objectives. It has helped the Velondriake Committee to spread messages of environmental awareness and encourage conservation.

The Women's Association of Andavadoaka

Both Associations have enjoyed continued success with their craft and embroidery ventures, in which they produce and sell clothing, bags, hammocks and hats. They are planning to collaborate with each other and local businesses, such as hotels and supermarkets, to further improve trade. Blue Ventures is maintaining its support for the Associations by facilitating the purchase of raw materials. The Associations' products continue to be popular among Blue Ventures volunteers, and the women have also assisted in recent family planning awareness projects (see 'Family Planning message spread through drama').

Family Planning message spread through drama

Blue Ventures medic Rebecca Hill, who runs a family planning clinic in the village of Andavadoaka, has recently put into action a new initiative aimed at increasing awareness of the use of contraceptives. The project follows several surveys carried out in Andavadoaka by Blue Ventures staff in recent years, in which almost half of women claimed to be aware of different contraceptives and two fifths had access to them. However, a third of local women were against using contraception, despite having access, because of a lack of information and fear of potential negative impacts. This has had serious consequences for sexual health in the area.

Hill felt compelled to raise awareness of this issue among the villagers of Andavadoaka, and impress upon them the importance of condom use in the prevention of sexually transmitted infections (STIs). Previous condom demonstrations as part of her work with the family planning clinic had been well-received, but have not been enough to bring about behavioural change. In the knowledge that drama is an effective means of communication, Hill wrote a play on the subject.

Entitled 'The Sea of Life', the play has now been performed twice in the village in the past three months. It was written in the local Vezo dialect and performed by Blue Ventures volunteers. This was facilitated by Taylor Veriza, a Malagasy research scholar sponsored by Blue Ventures, who assisted in getting the translation and pronunciaton correct and ensuring the message was delivered to maximum effect.

The plays have been highly popular with local villagers

The first play was received well by the villagers, whose only complaint was that it was not long enough. Blue Ventures decided to perform the play a second time, this time as part of a competition open to villagers and Blue Ventures alike.

The judges of the competition were Rebecca Hill, Garth Cripps (Blue Ventures Project Co-ordinator), Monsieur Roger (President of Velondriake Committee) and Lalao Aigrette (Natural Resource Monitoring Manager, Malagasy Blue Ventures Staff).

The winning play, written and performed by the villagers.

As a test of the value of the medium of drama, the competition was a great success. Villagers had clearly been inspired by Hill's efforts, and wrote and performed their own winning play. The villagers' play not only revealed a thorough knowledge of STI's, but was entertaining to all. It was essential to promote the use of contraception without deterring villagers with potentially sombre warnings.

The judges and the audience alike were entertained

Following on from the plays, the BV volunteers and staff and local villagers provided several forms of entertainment for the audience, including songs they had composed about condom use.

The strength of this success has been augmented by work with the Women's Association of Andavadoaka, who embroidered volunteers' clothing with condom awareness messages. A pirogue (boat) sail has also been decorated with similar messages, and has been used on sailing trips to raise awareness in outlying villages.

Once a highly embarrassing topic, sexual health is now discussed with good humour and STI awareness has most certainly grown. The message

has even reached local children, who enthusiastically made their voices heard during the performances and have since been seen to emulate several of the characters from the plays.

Conferences and Workshops

Keynote Speaker at 5th Biennial Environmental Youth Conference

Sophie Benbow, Research Development Manager, was invited to be the keynote speaker at the 5th Biennial Environmental Youth Conference at the Bermuda Aquarium, Museum and Zoo (BAMZ). This three day conference from 16th – 18th April with the theme 'The Power of One' aimed to inspire the children of Bermuda to care for their wonderful natural environment. Sophie gave the opening lecture documenting the history of BV's work in Madagascar as an example of the power of one NGO focussing all its output on one small village. Sophie also presented a free lecture to the general public which was very well received and stimulated a long question and answer session.

UNDP Ninth Conference of the Parties to the Convention on Biological Diversity

From 14th to 29th of May, Gildas Andriamalala, Blue Ventures Socio-economic Research Coordinator, was in Bonn, Germany, to be part of the indigenous peoples and local communities dialogue. Participants from 23 countries and gathered at the Community Dorf Knowledge Fair, as part of Ninth Conference of the Parties to the Convention on Biological Diversity (COP9 CBD). Gildas represented the village of Andavadoaka as one of the 2007 Equator prize winners. Participants spent ten days sharing, learning and exchanging knowledge on local level appropriate practice in biodiversity conservation and poverty reduction.

During that time the following issues about conservation policy were discussed to address the consideration and involvement of communities:

-Access and Benefit Sharing (ABS)

-Community Conserved Areas (CCAs) and Protected Area -Climate change and Reduced Emissions for Deforestation and Degradation (REDD)

-Agriculture, Forest, Marine and Fresh Water Biodiversity

-Women leadership

-Capacity Building, Training, and Education

-Sustainable Financial Mechanisms for Community-Based Initiatives

Marine and Coastal Biodiversity was one of the important topics covered, since many of the participating groups work in this conservation field. Using the feedback from the workshop "Community Responses to the Conservation and Sustainable Management of Tropical Marine Ecosystems", the community representatives drafted a declaration of Marine Coastal Biodiversity, that was distributed to the delegates of the 9th Conference of Parties.

A highlight of COP9 was the Equator Prize Award Ceremony, during which winners were officially recognized—often in conjunction with their respective countries' official delegations—and Norway officially joined the Equator Initiative partnership. Dr. Charles McNeill of UNDP spoke of the success and evolution of the Equator Initiative's Dialogue Spaces, the Community Dorf being the 10th since the first Equator Prize in 2002.

The 10 days at the COP9 ended with the High-Level Panel Discussion on "Biodiversity and Poverty Alleviation" featured representatives of GEF, UNDP, and the German and Norwegian governments. In his concluding remarks, Juan Chavez, of the Shipibo Konibo people of Peru and representing the leaders of the Community Dorf, noted that exploitation of local biodiversity richness is occurring daily, but there is an alternative. This alternative is to conserve the vast biodiversity in the world, through a strong partnership with governments and Indigenous and local groups. "Such an alliance will help us to work together and achieve our objective, which is the alleviation of extreme poverty neatly combined with a good management of our natural resources," he said ("Between the Lines" Equator Initiative Newsletter 15.)

For more information please go to: http://www.equatorinitiative.org/documents/pdf/BetweenTheLines_Issue15.pdf.

Gildas Andriamalala speaking at the Community Dorf Knowledge Fair

Bic Manahira, Coral Reef Managers workshop, Mauritius. 26th – 28th May, 2008

CoReMo 3 is the latest version of the on-line database being developed by ARVAM (Agence pour la Recherche et la Valorisation Marines, France - Réunion) for monitoring the state of coral reefs in the Indian Ocean. The workshop was funded by ReCoMaP and was attended by participants from Comoros, Madagascar, Réunion, Rodrigues, Seychelles and Mauritius representing a range of NGOs, universities and research groups.

The workshop commenced with an introduction to existing coral reef monitoring programmes (GCRMN and Reef Check) and a description of survey stations in Mauritius that are used for the collection of time-series data. Each of the participants then presented the monitoring activities in their own country, discussing how this links with the regional monitoring programme. Jude Bijoux, the ReCoMaP representative for the Seychelles ended the morning session with a presentation of data collected by the Global Coral Reef Monitoring Network between 1998 and 2008.

In the afternoon, Dr Jean-Pascal Quod introduced the database CoReMo 3. The training covered the selection of monitoring sites and methodologies for the collection of benthic and fish data.

The following day, a field trip was organised to the Flic en Flac reef complex, where the participants were able to put the training into practice and undertake dive surveys to collect data for input into the CoReMo 3 database. The participants organised themselves into three teams of two divers. Each buddy pair worked to collect data on invertebrates, benthic fauna and fish species.

After the survey work was completed, the data was entered into the CoRoMo 3 database guided by the database user manual under the supervision of Dr Quod. This practical exercise allowed for a SWOT (Strengths, Weaknesses, Opportunities, Threats) of the database and an opportunity to identify gaps that need to be addressed in the final version of the database software.

The final morning was spent continuing with data entry and analysis and identifying potential problems with the operation of the database. At the end of the session, all of the practical experiences, problems encountered and comments from the participants were collated and summarised for inclusion into the audit report. Finally, Dr Quod gave a presentation on the new components that ARVAM plans to incorporate into the database during 2009-2010. This includes a module on mobile invertebrates (echinoderms & molluscs), socio-economic data and indicators of stress to coral reefs such as coral bleaching and coral predators (*Acanthaster* & coral-livore molluscs).

The workshop gave valuable insight into the regional co-ordination of data collection, storage and analysis and was highly relevant to Blue Ventures work in Madagascar.

Blue Ventures' reef monitoring work looks at a wide range of quantitative variables that will enable relatively straightforward adaptation of data recording protocols for incorporating survey information into the new COREMO system. We strongly hope that this contribution from Andavadoaka will address the current 'black hole' that Madagascar represents in current regional knowledge of coral reef health.

Other News...

Seychelles reefs show little sign of recovery

Throughout April, a research expedition led by researchers from Newcastle University sailed around the granitic islands of the Seychelles, monitoring the status of the islands' coral reefs ten years after the 1998 mass coral bleaching event.

Like many coral reefs of the central and western Indian Ocean regions, Seychelles reefs suffered widespread mortality as a result of the unusually high water temperatures experienced in 1998, linked to an extreme El Niño event. In the inner, granitic islands of the central Mahé plateau, where water depths rarely exceed 30-50m, many reefs suffered near total loss of dominant reef building corals.

Researchers from Newcastle University have recorded the nature and extent of reef recovery over the years following the mortality event, and at a number of long-term monitoring sites scientists have witnessed the collapse of the reef skeleton left standing after 1998. The erosion and subsequent loss of reef structure have resulted in a substantial reduction in reef complexity and habitat diversity, with some previously thriving reefs being reduced to denuded rubble fields or sargassum beds, showing negligible coral cover and fish life. The results of the latest research show that 10 years on recovery has been variable, with some sites bouncing back to show high coverage of dominant architectural genera such as *Acropora* and *Pocillopora*.

However on the whole such positive signs remain very limited, and the region's reefs do not yet show signs of regaining their previous structure or diversity. Blue Ventures' Research Director Alasdair Harris took part in the expedition, monitoring coral communities at the research sites as part of as broader study investigating possible climate-induced changes in coral community structure in Indian Ocean reefs.

Reef ecologist Dr. Shaun Wilson surveying degraded reef at Cousin Island special reserve, Praslin

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