Blue Ventures Conservation Andavadoaka, Madagascar

conservation
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Andavadoaka wins top United Nations award for Biodiversity conservation

Research Update, April to June 2007

Village of Andavadoaka wins United Nations Equator prize

Pioneering sea cucumber aquaculture trials in Andavadoaka

Blue Ventures launches non-profit carbon offsetting programme, benefiting communities and biodiversity in southern Madagascar

The Village of Andavadoaka announced as Winner of the UNDP Equator Prize

On 27 May the Village of Andavadoaka, Madagascar, was honoured at the United Nations Headquarters in New York by the Equator Prize, an international recognition of extraordinary work to diminish poverty through the conservation and sustainable use of biodiversity. The prestigious prize serves to further advance the understanding within the global community of the vital link between healthy, biologically diverse environments and the creation of sustainable livelihoods.

The community of Andavadoaka was acknowledged for its work in partnership with Blue Ventures, Madagascar's Institut Halieutique et des Sciences Marines (IHSM), and the Wildlife Conservation Society (WCS), developing community-run marine protected areas in the remote southwest of the country. It is a tremendous achievement for Andavadoaka to have been selected from a group of 25 finalists, chosen from more than 300 nominations from 70 different countries.

M. Roger receives the news that Andavadoaka has won the Equator Award

The Andavadoaka partnership project represents a unique opportunity for long-term monitoring and evaluation of the potential for community-run marine protected areas (MPAs) to meet the diverse needs of coastal stakeholders while preserving the ecological system upon which their economy is based. It is hoped that the experiences of the collaborative multi-stakeholder approach pioneered in Andavadoaka will contribute towards a model for the design and implementation of marine and coastal environmental management plans elsewhere in Madagascar and across similar regions worldwide.

Represented by community members Georges Manahira and Daniel Raberinary of Blue Ventures, the village received international recognition at an Awards Ceremony in Berlin, Germany on World Environment Day, 5th June. "Over recent years, Blue Ventures Conservation has worked closely with the village of Andavadoaka in protecting some of Madagascar's most critical and threatened marine areas,"

said Dr. Iary Berthine Ravaoarimanana, Madagascar's ambassador in London. "This unique partnership is working to ensure that Madagascar's incredible marine resources remain healthy and productive for generations to come."

Georges Manahira and Daniel Raberinary receive the Equator award on behalf of the village of Andavadoaka

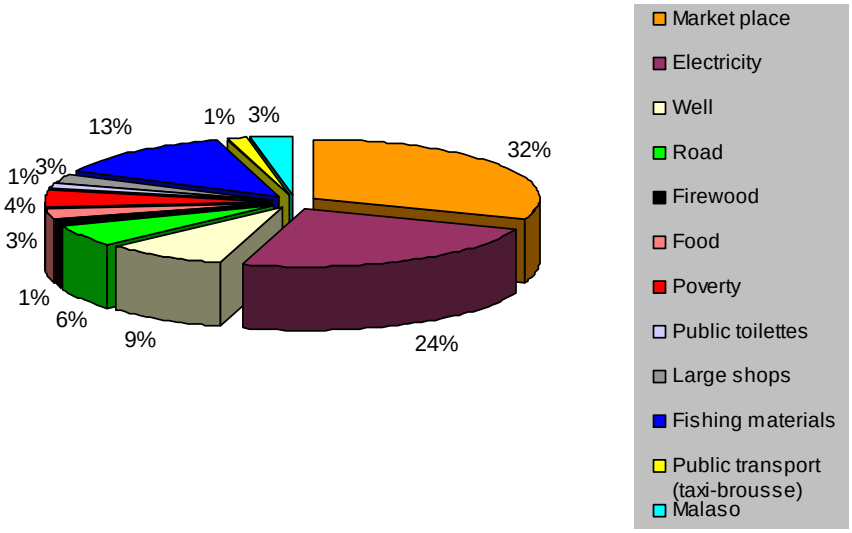
UNDP Administrator Kemal Derviş said of the winners, "The proliferation and scaling up of efforts such as these is critical to the achievement of our common goals to conserve biodiversity, respond to climate change and achieve the Millennium Development Goals."

In addition to international recognition for its work and an opportunity to help shape international policy and practice in the field, the community of Andavadoaka will receive US $30,000 to support local development initiatives.

Since receiving notification of this award the village has held meetings to discuss priorities for spending its prize. Consensus has now been reached on plans to fund renewable electricity generation in the village. It is widely believed that the opportunity of creating a reliable and cheap source of electricity could form the basis of many new opportunities for the village and surrounding communities. The lack of publically provided electricity was identified as the second largest disadvantage by Andavadoaka villagers in a survey conducted by Blue Ventures socio-economic team (see graph). In many ways electrification of Andavadoaka could fundamentally improve village life, expanding opportunities and allowing potential small businesses to pursue their activities more effectively, as well as forming the basis for major improvements in health, education, tourism and communications.

An example of these new opportunities is in the freezing of seafood products. Marine resources harvested by the fishers of Andavadoaka and surrounding villages are of much higher commercial value when frozen quickly. The current lack of freezing facilities means that catches degrade quickly on the long and difficult journey to Toliara, and often lose value before they reach markets and collectors in the regions capital. A reliable and accessible electricity supply would enable communities to benefit from this additional market value through the use of storage freezers for catches, which could be provided by fisheries collectors.

Electricity for the village's primary and secondary schools will help students to work after dark and to use electrical items as learning tools, in particular radios, computers and printers. Running electrical equipment, such as radios, from a power supply rather than from battery power will also reduce the number of used non-recyclable batteries which are dumped or burned, reducing the environmental impacts associated with this, as well as the costs to villagers through saving on the purchase of batteries. If local hotels are able to offer lighting and power for recharging camera batteries and other appliances they may also be able to charge a higher rate, bringing more capital into the village for development in other areas.



Andavadoaka villager perceptions of community problems

The provision of a reliable power supply to the local hospital building would also enable greater efficiency in the treatment of illnesses, expanding the range of medical procedures that can be undertaken locally, reducing the need for evacuation to Morombe and Toliara. Lights within private households will reduce the need for the burning of kerosene lamps, the smoke from which is believed to contribute to respiratory disease and infection particularly in the old and young. The burns from these fires are currently one of the most common injuries amongst children.

In the eventuality of cell phone coverage being extended to cover the commune of Befandefa, the availability of electricity will also permit the use of cell-phones, providing for the first time a means of cheap and reliable communication between villages.

"The Equator Prize recognises the devoted work of men and women to the cause of saving our planet from ecological disasters. Through their work, they are demonstrating that good ecology is also good business. Thus they serve as torch bearers of the movement for sustainable human

happiness," noted Professor M.S. Swaminathan, Equator Prize jury member and former president of the National Academy of Agricultural Sciences of India.

Launched on 30 January 2002, the Equator Initiative is a partnership that brings together the United Nations, civil society, business, governments and communities to help build the capacity and raise the profile of grassroots efforts to reduce poverty through the conservation and sustainable use of biodiversity. The world's greatest concentrations of biological wealth are found in equatorial regions, in countries that also have some of the highest levels of poverty. The Equator Initiative champions and supports community efforts to link economic development and income generation with the conservation and sustainable use of biodiversity.

Sea cucumber mariculture pioneered in Andavadoaka

In April the newly-formed Andavadoaka Women's Association signed a contract with Blue Ventures, the fisheries collection company Copefrito, and Toliara-based aquaculture research group Aqualab to establish a pilot sea cucumber farm in the region.

Sea cucumber enclosure

As part of this exciting new venture Aqualab, in partnership with Copefrito, is providing the Women's Association with batches of up to 250 juvenile *Holothuria scabra*, raised *in vitro* in Aqualab's aquaria at the University's marine institute, the IHSM. Fulfilling their role in the partnership, members of the Women's Association are responsible for supervising the growth of the juveniles in their natural seabed habitat, into commercially valuable adult sea cucumbers. Once adult growth size has been reached, the Women's Association will harvest the sea cucumbers for sale to Copefrito, who will in turn sell the products on to international markets.

Members of the Andavadoaka Women's Association regularly monitor growth rates of the juvenile sea cucumbers

Upon arrival in Andavadoaka, after a bumpy 12-hour off-road journey by truck in saltwater tanks from Toliara, the sea cucumbers are placed in protected enclosures fixed to the seabed within a sheltered bay between the villages of Andavadoaka and Ampasilava. The enclosures, built by Blue Ventures volunteers and members of the Women's Association, keep the juveniles contained within a fixed area to prevent loss of the sea cucumbers. Each cage, clearly marked with surface buoys, is fixed within a shallow lagoonal seagrass zone, selected as suitable habitat for the species following reconnaissance surveys carried out by Blue Ventures and Aqualab.

With support from Blue Ventures researchers, members of the Women's Association regularly monitor the juveniles, recording measurements of length and weight. As part of this monitoring, each sea cucumber in the enclosures is measured, to provide an accurate assessment of mortality and growth rates. In doing so this project is investigating the feasibility of a community-centred aquaculture initiative for growing laboratory-raised juveniles into commercially viable products.

Copefrito, acting as private sector partner and co-sponsor of the trials, has committed to buying the sea cucumbers for sale to international markets, providing the women working on the project with guaranteed income once adult size has been reached. Blue Ventures provides technical support to ensure the farming is conducted sustainably and efficiently, and coordinates activities between all partners. Communicating the aims and activities of the project is considered to be fundamental to the success of the trials, since the high value of sea cucumbers makes the remote enclosures a potentially attractive target for poachers eager to benefit from the easy pickings. For this reason regular project meetings and updates are held to raise awareness of the importance of mutual trust and collaboration in this exciting initiative. So far there have been no recorded thefts from the enclosures, and partners await growth results from the trials over the coming months.

Collection of holothurians (sea cucumbers) at low tide or by free diving is a traditional activity in Madagascar, the production of 'Trepang' (salted and boiled sea cucumber) having been undertaken since the beginning of the 20th century, with the majority of produce being exported to South East Asia.

Sea cucumbers are salted and boiled before being sold to collectors for export

Anecdotal evidence from Iida (2005) suggests that in the late 1970s sea cucumbers were so abundant that a fisher could fill a pirogue with them in one day. As resources have been reduced through over exploitation the continuous demand from overseas has driven market prices higher, resulting in increased incentive for harvesting of already decimated populations and the expansion of harvesting ranges, often through the use of SCUBA to collect deeper specimens.

This illegal and unregulated technique of collecting holothurians not only depletes the resource at an ever increasing rate, but is also responsible for a growing quantity of fatal or severely debilitating diving-related accidents.

McVean's research in the surrounding region shows that collection of sea cucumbers is socially and economically important for many local fishing communities. If Andavadoaka's mariculture project is successful it may be employed as a management and alternative livelihoods strategy for other communities in south west Madagascar.

Launch of Blue Ventures Carbon Offset

Blue Ventures has recently launched an innovative new carbon offsetting fund; the Blue Ventures Carbon Offset, BVCO.

BVCO funds stoves project

Climate change represents one of the greatest threats to coral reefs throughout the world's tropical oceans; yet unavoidable greenhouse gas emissions are associated with many aspects of Blue Ventures' work. In order to mitigate emissions produced by our activities in the UK and Madagascar, as well as the international flights and transport of researchers and volunteers, this new non-profit programme, the first of its kind in Africa, reduces carbon emissions by financing carbon offsetting projects in Madagascar that benefit both communities and biodiversity. The offsetting fund only supports projects that would not be able to go ahead without Blue Ventures' support.

Fuel Efficient Stoves are being trialed in Andavadoaka

The current focus of the offsetting programme is the development of a fuel-efficient stove project to help reduce wood and charcoal use in villages throughout the Andavadoaka and Velondriake regions. This is being developed in partnership with the *Association pour le Développement de l'Energie Solaire*, (ADES) and the University of Toliara. With finance from the offsetting fund, solar ovens, parabolic solar stoves and metal portable energy-efficient stoves are being distributed to replace traditional open fire and three stone cooking methods. These stoves help households to reduce their fuel use by up to three-and-a-half times, with each stove cutting household carbon emissions by 1.5 – 2 tonnes per year. Alongside their emissions reductions, the stoves provide considerable environmental, economic and health benefits.

- Environmental benefits: the new stoves require less wood to generate heat, thus reducing wood foraging, deforestation and associated habitat degradation.

- Economic benefits: The locally-produced stoves create employment through manufacturing, distribution and information dissemination, and reduce household expenditure on fuel wood.

- Health benefits: A reduction in smoke production from the stoves and an increase in stove safety will help to reduce cooking-related respiratory infections and other cooking injuries. Research indicates that cooking smoke and the resulting indoor air pollution in poorly ventilated homes are responsible for 1.6 million fatalities in developing countries every year.

In late May stoves were trialled with households in Andavadoaka to assess the fuel savings and community perceptions of their suitability to Vezo homes. This trial period provided a clearer understanding of community needs and demands for the stoves, as well as a means for more accurate quantification of carbon reductions as a basis for offset calculations. A public consultation was also held at the end of July, comprising a series of talks, cooking demonstrations, public trials and discussions relating to the stoves.

BVCO site manager Vola Ramahery leads public talks and cooking demonstrations on efficient stoves

Beyond Blue Ventures, our carbon offsetting initiative is open to all, providing a non-profit carbon mitigation option for anyone with an interest in Madagascar. With support from the University of Oxford's Environmental Change Institute we're ensuring the highest level of quality assurance and verification by undertaking regular internal and external auditing, along with working towards UNFCC Gold Standard Accreditation.

To offset your travel, your life, or your business with BVCO visit www.bvco.org.uk

Other News

Mangrove research at Antsaranasoa

Research volunteers help to assess anthropogenic damage to mangroves

A recent study carried out by Cambridge University research student Clare Connon looked at the Antsaranasoa mangroves, a small previously unstudied area of mangrove forest close to Andavadoaka, establishing an understanding of the different mangrove species, as well as current levels of exploitation.

Current exploitation of mangroves in Antsaranasoa is thought to be unsustainable

The assessment of the mangroves of Antsaranasoa took place in the summer of 2006 and the project documents the diversity of mangrove species, as well as evaluating the pressures exerted on the mangroves in the Antsaranasoa area by both natural and anthropogenic sources.

Five species of mangrove; *Avicennia marina, Bruguiera gymnorrhiza, Ceriops tagal, Rhizophora mucronata*, and *Sonneratia alba*, were found to be occurring in the Antsaranasoa area. The thesis discusses species variation and spatial distribution, which it attributes through comparison with theoretical models, to soil type preference, and physical parameters such as rocks and river inlets.

The report documented that 12% of areas within the study had damage that could be specifically attributed to human use, yet 65% showed evidence of anthropogenic impact such as zebu-cart tracks and signs of zebu grazing. In some areas researchers could even hear trees being cut down at the same time as collecting data. The high levels of human activity within the Antsaranasoa mangroves indicate that current resource use is unlikely to be sustainable, and with increasing local populations it is improbable that the level of exploitation will slow without some means of resource management.

The Antsaranasoa mangroves have been designated for protection as part of the Velondriake MPA network and will be subjected to conservation management strategies, the success of which will be determined through ongoing monitoring of the area.

Andavadoaka Field Staff visit London

Bic and Daniel saw many of the sights in London

During the run up to the UNDP Equator Prize events in Berlin in June, field research staff Georges 'Bic' Manahira and Daniel Raberinery passed through London to catch up with Blue Ventures volunteers and staff, past a present.

During a week of reunions and celebrations in late May, Bic and Daniel were given a whistle-stop tour of London's sights, including meetings with the Chargé d'Affaires of the Madagascar Embassy, before heading on to Germany to accept the prize on behalf of the village of Andavadoaka.

Meeting with the Charge d'Affaires in the Madagascar Embassy

A regional perspective on MPAs in the Western Indian Ocean

Between 9-14 May a workshop on the Mauritian island of Rodrigues took place to aid the development of effective, well-managed marine protected areas in the Western Indian Ocean. The workshop, hosted by Mauritian NGO Shoals Rodrigues, brought together MPA practitioners from governmental and non governmental organisations in countries throughout East Africa and the Western Indian Ocean region to share experiences and develop practical solutions to MPA management issues.

The event also hosted the first meeting of the Western Indian Ocean Marine Ecoregion (WIOMER) MPA Manager's forum, a network designed to support marine park managers throughout the region. Results from the Velondriake protected area network were presented by Alasdair Harris and Francisco Ramananjatovo from Blue Ventures and the Wildlife Conservation Society