

# Blue Ventures Conservation Andavadoaka, Madagascar

World's First Certification for MPA Professionals includes BV staff member ReCoMap and EU funding to develop sea cucumber farming projects  
Velondriake model is replicated in Ranobe Bay



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Research Update, July to September 2008

*Edited by Sophie Benbow*

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## WIO-COMPAS certification workshop

Marine Protected Area (MPA) professionals from five countries across the Western Indian Ocean region were invited to attend an MPA management workshop in Kenya. The Western Indian Ocean Certification Of Marine Protected Area Professionals (WIO-COMPAS) workshop and certification process included case studies, presentations, field visits and interviews with the assessors.



This represents the first certification programme in the world for MPA professionals and aims to recognize those professionals who

have proven their skills on the job to provide effective management of MPAs. Daniel Raberinary (BV Community Outreach Officer) attended the certification workshop held in the Malindi National Park in Kenya, between the 12<sup>th</sup> and 23<sup>rd</sup> of August.

Participants were judged on their competence and performance as managers of MPAs. Guest speakers included Tim McClanahan (Senior Conservation Zoologist at the Wildlife Conservation Society) who mentioned the lack of scientific data from southwest Madagascar and therefore highlights the importance of the Velondriake MPA as a ground breaking project; Glenn Ricci (coastal environment specialist from the

Coastal Resources Centre at the University of Rhode Island) explained the basic rules of being a good facilitator between stakeholders in MPAs and the importance of maintaining high standards of communication; Sue Wells offered advice about the effective evaluation of MPA management; and Rosie Traveyan spoke about the issue of securing financial deals to ensure that MPA management is long term.

Following these discussions it became clear that the Velondriake MPA was the only one to use a community based management style, and the other reserve managers were extremely interested in the merits of this strategy.

Universally the main problems of MPA management were highlighted as fishermen breaking fishery laws because of declining fish catches. The participants also agreed that the effects of climate change were being felt in their communities through amplified degradation of the habitat.



*Daniel Raberinary*

The key growth area discussed for Velondriake was tourism. It was acknowledged that Velondriake is situated in an area with very poor infrastructure, but that any developments which could boost the areas appeal to ecotourists would generate a sustainable independent income to fund vital management initiatives. Increasing tourism would also generate more employment for local fishers and may reduce their dependence on the marine resources. To ensure the long term sustainability of Velondriake managers must actively involve local communities in new development. Daniel suggested that more training programmes would be of use. In particular he highlighted staff management, general MPA management and accountancy as key areas in which he felt he would benefit from more training.

#### Holothuria mariculture plans

Blue Ventures has recently secured funding from the Regional Programme for the Sustainable

Management of the Coastal Zones of the Indian Ocean Committee (ReCoMaP) to expand its alternative livelihoods program and develop holothurian (sea cucumber) mariculture in four villages in Velondriake.

The project proposal, ranked 2<sup>nd</sup> out of 500 proposals from 7 countries in the WIO, has been awarded €1,187 for a two year project starting in September 2008.

The project is pertinent to the overall objectives of ReCoMaP: to enhance sustainable management and conservation of coastal and marine resources. This project aims to alleviate poverty in coastal populations through close collaboration with the Velondriake Association to strengthen the capacity of local communities to achieve sustainable integrated coastal zone management.



*Sea cucumber processing*

The project intends to build on the experience and lessons learned from the pilot holothurian mariculture trials that were conducted by Blue Ventures, IHSM and Copefrito with the Andavadoaka Women's Association between 2007 and 2008. The project is working in partnership with the Velondriake Association and Madagascar Holothurie (MH) – a private company that has been formed by Copefrito, IHSM, the Université Libre de Bruxelles (ULB) and the Université de Mons-Hainaut. Madagascar Holothurie has been created with in-

vestment from all stakeholders to pilot holothurian farming on a commercial scale for 24 months. MH is aiming to scale up production of the sea cucumber hatchery and nursery site to reach production of 100 000 juveniles per year, although lack of space in ponds was identified as the main bottleneck to production of sea cucumbers on a commercial scale.

In the interest of poverty alleviation and promoting sustainable development in the region, MH has opted to achieve grow out of sea cucumbers to commercial size through village-based mariculture as opposed to through industrial-scale production. This is in recognition of the fact that there is an urgent and crucial need for viable alternative livelihoods to be developed for the coastal communities of southwest Madagascar, particularly for women.

The financing from ReCoMaP will enable Blue Ventures and the Velondriake Association to link individual family groups to the commercial supplier/buyer, transfer the technology for holothurian farming, define models for ownership and train families to run a profitable and sustainable business.



*Women helping BV staff construct sea cucumber farming pens*

Holothurian mariculture is a simple technology that uses locally available materials, requires low capital investment and low labour inputs from Vezo fishers. The proposed project will lead to the creation of 25 distinct family units



with the technical capacity and means to carry out Holothurian mariculture. The project will finance the 'start-up' materials for a total of 4 pens per family group which will remain the property of each family. It will also provide the juveniles to stock these pens on the condition that the families re-pay the 'delivered' price of the juveniles when the market-sized sea cucumbers are sold.



Sea cucumbers in pens on land before deployment to villages

To engender a strong sense of local ownership the socioeconomic model for the ownership of private mariculture businesses will be based on clans or family groups of the same lineages. This methodology will not only ensure that the project investment will be equitable across the village but will also address gender issues, as all roles and responsibilities will be shared equally between men and women within each family group. In the villages of Velondriake Vezo families group together according to lineage to share fishing material, to fish together and to share the catch among all members of the group. The processing of Holothurians is traditionally carried out at a family level and thus it is fitting that Holothurian mariculture, as an alternative to resource extraction, should be similarly implemented at a family level.

The long-term sustainability of coastal resource management and the development of alternative livelihoods depends on the ability

of Velondriake to act as an independent community organisation to administer and manage its own projects and innovate microenterprise developments.



Sea cucumber farming pen

This project will build the capacity of the Velondriake Association by employing local people as key members of the project team and providing them with the necessary skills and knowledge. It will establish a framework for the Velondriake Association to implement and manage projects and thus lay the foundation for future small business developments and alternative livelihood projects such as ecotourism and seaweed farming.

This project is funded by the EU and ReCoMap.



**Octopus No-Take Zone (NTZ) periods decided**

The children, men, women and elderly of fifteen villages fish octopus at 65 different sites in Velondriake, and for many octopus is their sole money-earner. The reproductive biology of *octopus cyanaea* in southwest Madagascar is still not well understood. These two aspects summarise the challenges of a community-managed fishery in all its complexity.

Armed with strong community management structure and Daniel Raberinery's new research find-

ings on the octopus life cycle, Blue Ventures and the Velondriake committee have discussed octopus management plans for 2008 which build on the lessons learnt over the last four years.

On 14<sup>th</sup> March 2008 the Velondriake Committee and Blue Ventures (BV) held a workshop on octopus fishery management in Andava-doaka to overcome any short fallings of the 2007 closures and to repeat its successes.



BV Staff chairing a Velondriake meeting

This workshop achieved a number of objectives:

1. BV trained the Velondriake committees in the reproductive biology of *Octopus cyanaea*. Knowledge of the behavioural ecology and life history of the species is a prerequisite to understanding the justification and timing of Velondriake's octopus NTZs; and it is thus essential to taking informed management decisions.
2. The committee learned criteria for selecting appropriate sites for an octopus NTZ, including characteristics of a successful NTZ.
3. The Velondriake committee members presented and shared the history of the NTZs to date, with each Vondrona (geographical region within Velondriake) presenting its experiences from the first closures of 2004 to those of the 2007.
4. Blue Ventures presented a scientific analysis of the 2006 and

2007 closures, incorporating data collected by community members, and presenting key lessons learned and recommendations for further closures in 2008.

As a result of these completed objectives, the committees suggested how to improve management for 2008 and each Vondrona presented its preliminary proposals for NTZs.

Suggestions made by the committee to overcome earlier problems included fixing a single opening date for all NTZs, to remove problems of convergence and 'free-riding' by itinerant fishers on the day of each NTZ reopening; stopping octopus fishing during the neap tides and working with collectors to enforce this; and implementing permanently rotating reserves, whereby as soon as one closed area is reopened, a nearby NTZ of similar size is closed.



*BV Staff working with the Committee to select NTZs*

BV recommended that Velondriake began the closures at the beginning of October to ensure that the full breeding season of *O. cyanea* is protected by the closures, and that the opening of the NTZs coincided with the end of the national closure of the fishery at the beginning of February. This was primarily to avoid intense fishing effort on NTZ reopening days; a factor had removed the accrued fisheries benefits of previous NTZs.

Following this planning workshop, committee members returned to

their villages to teach their respective communities what they had learned during the workshop and to decide which aspects of the workshop's proposals would be implemented. BV also visited each village, holding village meetings with the Velondriake Committee member to ensure that there was a full understanding of the NTZs and what had been covered during the workshop.



*The Velondriake Committee*

The Velondriake President, BV and the director of Copefrito also met in Andavadoaka and Toliara to discuss these ideas. A final Committee meeting was held in Ampasilava on 10<sup>th</sup> June 2008 to finalise the NTZs for 2008. Velondriake committee members attended this meeting, along with village presidents and recognised community leaders from each village within Velondriake, a total of over sixty participants. The attendees decided on a single closure date, 1<sup>st</sup> November 2008, and selected 13 NTZs. The community agreed as a whole to support the neap tide octopus fishing ban. This is currently being finalised with the collection companies to ensure that they support it.

#### Successes in marine conservation are contagious

In April and June 2008 a number of successful village exchanges hosted by Blue Ventures and the Velondriake Association occurred. Following these exchanges, the majority of villages that visited Velondriake have proposed to cre-

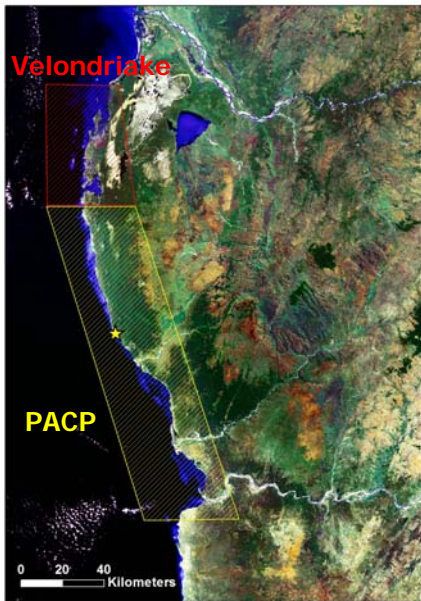
ate their own marine reserves. Over the last few months Blue Ventures has worked closely with these communities to support them in the decision making process. To help the villages to decide how they use and view the status of their local marine resources, surveys of Traditional Ecological Knowledge (TEK) were carried out in each village together with participative mapping of fishing sites. TEK refers to the knowledge that is passed down through the generations about fishing activities and is an extremely valuable tool in community resource management. The TEK surveys were supported with a participative mapping exercise which mapped the habitat areas, and names and location of the fishing sites for each village, together with the main resources and fishing techniques used in each zone. The TEK surveys and the creation of the participative map are an essential process to help the villagers to decide on the key species and habitats they want to protect through marine reserves.

Three of the villages have decided to follow in the footsteps of Velondriake and create temporary no-take zones primarily for octopus. They have also decided to follow the same closures periods, from 1<sup>st</sup> November until 1<sup>st</sup> February, that are proposed for Velondriake this year, designed to protect the main spawning and brooding period for *O. cyanea* in southwest Madagascar. This closure period is an extension of the regional octopus fishery closure which occurs from 15<sup>th</sup> December – 1<sup>st</sup> February, thus the reserve reopening will coincide with the lift of the regional ban on octopus fishing, ensuring that fishing effort will be spread evenly across all fishing sites.

Once all of the villages had decided on potential sites the next



step was to assess the suitability of the proposed sites as marine reserves. Blue Ventures sent a team of divers to survey the sites, including the PACP Project Coordinator Georgina Robinson, BV Field Scientist Louis Pearson and two of our Malagasy science staff Bic Manahira and Angelo Donah. BV staff were hosted by Reef Doctor in Ifaty for the duration of this survey.



*Velondriake and PACP areas.*

The surveys began with the 2 most northerly villages, Tsifota and Fiharenamasay, approximately 50km north of Ifaty. The mission of the survey team was explained to the village president during a brief stop in the villages on the journey to Ifaty, and local guides were employed to find the sites. In each village, the proposed reserves consisted of large expanses of reef flat which extended beyond the reef crest to include the reef slope of the barrier reef. Prior to the surveying, the extent of the proposed reserve was mapped with a GPS and the assistance of our local guide, allowing the identification of areas to survey.

On the barrier reef sites we employed the standard methodology

developed by IHSM for the PACP project which combined Line-Intercept Transects and 1m<sup>2</sup> quadrats to detail the main benthic life forms and 100m transects for fish biomass. On the reef flats, the benthic methodology was conducted by snorkelling. Deeper patch reef sites were also surveyed for incorporation into the reserve, as this is where female octopus would take refuge during the spawning period.



*Blue Ventures dive team*

The third village surveyed on this trip was Fitsitike which had proposed two potential marine reserves situated approximately 13km south of the village on the Grand Recif de Tulear. The distance from the village is explained by the fact that the sites closer to the village suffer from very heavy sedimentation from the Manombo River and so a healthier site further away was proposed. Unfortunately bad weather prevented the BV team from completing the surveys, but Reef Doctor have extended their monitoring programme to include these new sites and are happy to share their data with BV. On their return to Andavadoaka, the BV team has begun data analysis to confirm the suitability of these sites as marine reserves which may eventually be incorporated into a larger, regional Marine Protected Area.

**Andavadoaka resident presents in Toliara**

On the 27<sup>th</sup> September Thomas (Blue Ventures Research Assis-

tant) attended a workshop organised by ReCoMap in Toliara. The workshop was primarily a publicity event for a competition they are running for children from all around the country to produce pictures relating to the protection of the environment. It was also a general forum for attendees to learn more about initiatives in place to enhance environmental protection. The workshop organiser was so impressed with Thomas, a resident of Andavadoaka, that he asked him to give a short presentation in Malagasy summarising the work of Blue Ventures in Andavadoaka and the background of the Velondriake MPA.

After 10 minutes of preparation time Thomas presented to 100 people at the workshop. Introducing himself as a local community member from Andavadoaka and BV employee, Thomas went on to discuss Velondriake's objectives and achievements and the success of a community managed MPA. He also explained the various research projects in place in the region coordinated by BV, including the sea cucumber farming initiative part funded by ReCoMap.



*Thomas working with turtle fishermen in Andavadoaka*

Thomas' presentation generated a large amount of interest and stimulated questions relating to all aspects of BV's work. They were also interested in Thomas' individual achievements, and suggested that he should look for avenues of further study now he has so much field experience. Thomas

returned to Andavadoaka with brochures detailing the children's competition to distribute in the school.

This was Thomas' first experience of public speaking in a scientific forum and by all accounts he proved to be an excellent spokesperson for Blue Ventures work. People were fighting to sit next to him at lunch to continue their discussions of the ground breaking work in Andavadoaka related to the Velondriake MPA! The organisers of the workshop were extremely pleased with the day and are planning on asking for another BV representative to speak at their next workshop.

**Club Apombo formed in Lamboara**

Club Alo Alo in Andavadoaka has been a great success, with kids getting involved and helping to bring education to the whole community. In September 2007 the Club organised an educational play that was designed to inform the community about the delicate balance in their local environment.



*Club Alo Alo performing in Lamboara*

The play was written in English by Alex Mason and then translated by the manager of Club Alo Alo, Bic Manahira, Blue Ventures Assistant Dive Manager. "Soa ty manao reserve" (good to reserve) was so entertaining and well received that the club decided to take the show on the road.

In December 2007 "Soa ty mamao reserve" was performed in 6 vil-

lages in the Velondriake region. The visit to Lamboara sparked the community's interest intensely and they approached the Club Alo Alo members for ideas on how to set up their own club in the village.

At the beginning of March 2008 Bic attended a meeting with community representatives and young people from Lamboara. At the meeting Bic explained the logistics of setting up a new club, the voting process for the formation of a committee, and outlined the objectives that the club would have. On the 15<sup>th</sup> July Bic returned for a follow up meeting and to hold the committee elections. This meeting produced a committee which the community was happy with and Club Apombo (meaning Loggerhead turtle in Vezo) was officially formed.



*Lamboara residents listening to Bic's lectures*

During this visit, Bic also gave the first of a series of environmental lectures on introducing plantations in the village and other fundamental topics including waste disposal. At a further meeting on 21<sup>st</sup> August, a site was nominated for a new garden and instructions were given to prepare the site before planting could begin.

Two other villages have expressed interest in setting up similar village clubs. These villages will soon be sending official letters of interest so that work can begin on forming environmental education clubs in these villages.

**PADI AWARE International beach clean up day**

On Sunday 21st September 2008 a team of Blue Ventures staff and volunteers set off on a clean up dive to an isolated patch reef named Recruitment. Armed with mesh bags and gloves the divers collected all the marine litter they could find on the reef. A successful dive left the reef pristine, and free from manmade debris.



*Banner promoting the clean up day on Andavadoaka beach*

The main event of the day was a large scale beach clean up. This had been carefully planned to ensure maximum village involvement, and BV volunteers designed a banner to increase awareness of the aims of the day. Children from Andavadoaka were recruited to help the staff and volunteers with the daunting task of clearing Andavadoaka Beach of all litter.



*Andavadoaka kids racing along the beach with a full sack of rubbish*

In no time at all the team had a small army of children chanting in unison 'Liovo Saragna' which means 'No Rubbish' in the local Vezo dialect. Assistant Dive Manager, Bic Manahira, distributed



sacks to the children and stood guard over the ever growing pile of rubbish. A truly successful day and a small mountain of rubbish to show for it!

Coral reef expert visits  
Andavadoaka

In July Blue Ventures was delighted to welcome Professor Charles Sheppard to Andavadoaka. Charles, a renowned coral reef ecologist and advisor to the UK government on marine conservation issues, visited the Velondriake initiative as part of his role as ecological advisor to BV.



Charles Sheppard, BV Advisor

Over the coming years Charles will provide guidance and support to BV's marine research team on matters relating to marine ecosystem monitoring and assessment. During the visit, Charles accompanied BV reef monitoring coordinator Bic Manahira on research dives throughout the Velondriake region, as well as on Toliara's famous Grand Récif, located immediately offshore of the coastal capital of southern Madagascar.

#### Conferences and Workshops

#### *Raj Roy reports on the 11<sup>th</sup> International Coral Reef Symposium*

"Act now to save coral reefs": the International Coral Reef Symposium, held every four years - this year in Fort Lauderdale, Florida -

witnessed more than 3,400 reef scientists, fisheries managers, and conservationists unite to discuss the state of the world's reefs.

Raj Roy, Blue Ventures Operations Manager, presented a short report on the state of octopus fisheries in southwest Madagascar, and Blue Ventures' work over the last 5 years to help develop sustainable fisheries practices, introduce alternative livelihoods and combat overfishing.



The Velondriake network, in southwest Madagascar, has been set up by local communities, with help from Blue Ventures and project partners, such as the IHSM and WCS. The network demonstrates that economic development can – and must - go hand-in-hand with environmental conservation, echoing key themes from the symposium.

The overall tone of the conference was positive, but urged for action to be taken. Terry Hughes, Darwin Medal winner 2008, remarked in the closing keynote, "corals are in trouble. But they're not doomed. We can fix them and we know what to do. It's just a matter of doing it."

#### New reports on website

[A Socioeconomic Baseline Assessment: Implementing the socioeconomic monitoring guidelines in southwest Madagascar](#)

With the support of CORDIO, Blue Ventures Socioeconomic research Coordinator, Minna Epps, conducted an initial SocMon survey of three villages in the region

in 2006. This survey generates important baseline data of the population structure and analyses key demographic statistics of the villages. Results from this report will help managers of the Velondriake MPA to tailor adaptive management plans and encourage community support of initiatives in the region. [The full report is available online here.](#)

The second part of this report which studies the attitudes and perceptions of local villagers towards the marine resources on which they depend for their survivals will be online soon.

[An assessment of the migratory flow of \*Megaptera novaeangliae\* along the southwest coast of Madagascar](#)

At the culmination of the 2007 survey season Blue Ventures staff and volunteers had witnessed 130 humpback whales (*Megaptera novaeangliae*) travelling through the region from the purpose built whale watching platform on the offshore barrier island of Nosy Hao.



Humpback whale breaching

This report presents evidence that the whales sighted in this are migrating up and down the coast, and suggests improvements to future seasons. [The full report is available online here.](#)