

Rivière Banane Marine Reserve Management Plan



Final Draft – February 2008

Submitted to the Monitoring Committee for Rivière Banane Marine Reserve

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Monitoring Committee and the Rivière Banane Community**



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“Developing marine reserves for sustainable fisheries and biodiversity conservation in the Rodrigues Lagoon”

Partners: Rodrigues Regional Assembly, Shoals Rodrigues, Indian Ocean Commission and Newcastle University, UK

SUMMARY

The Rivière Banane Marine Reserve was gazetted in 2007 after extensive sensitization and consultation with the local community. The Monitoring Committee for Rivière Banane Marine Reserve is currently taking forward the management of the site. The Committee have agreed that a Management Body should be formed to take on the management of the site under the supervision of the Monitoring Committee for Rivière Banane Marine Reserve and the Rodrigues Regional Assembly.

Law enforcement for the site will be the responsibility of Fisheries Protection Service and National Coastguard staff. This will add significantly to the workload of these organisations, therefore it is suggested that additional budget be requested to cover the staff time required.

Routine management of the site will be the responsibility of the Management Body and implemented by a Marine Reserve Manager to be based in the Marine Reserve Office and eight Community Rangers, recruited from the Rivière Banane fishing community.

Many aspects of the establishment of the site are funded under grants already secured or could possibly be funded under grant applications yet to be secured. However, some key aspects of the management of the Rivière Banane Marine Reserve have yet to be funded and these are highlighted.

To complete the set-up of the Marine Reserve is estimated to require another Rs 697,400. To run the Marine Reserve for a year with the suggested staffing and operation levels is estimated to cost approximately Rs 2,270,840.

The effective enforcement of the Rivière Banane Marine Reserve will lead to a reduction in fishing sites available to Rivière Banane fishers and will impact on the livelihoods of the 56 registered fishers and numerous unregistered fishers in the area. Some fishers will benefit directly from the Marine Reserve, being employed as Community Rangers. In parallel to the development of the Rivière Banane Marine Reserve, two alternative livelihood projects are being developed with GEF-SGP and IOC-FFEM funding. The success of these alternative livelihood projects will have a great influence on the success of the Rivière Banane Marine Reserve. Alternative livelihoods for fishers should be a key consideration of the Management Body.

A VISION FOR RIVIÈRE BANANE MARINE RESERVE

With effective management and support at every level the vision of the Monitoring Committee for Rivière Banane Marine Reserve and the Rivière Banane community includes:

Environment:

- A well-protected marine environment where coral reefs thrive and fish and octopus populations can recover.
- An effective lagoon fisheries management tool with spillover of larvae and adults into adjacent areas.
- Effective protection for existing biodiversity and recovery of degraded habitats, leading to increased biodiversity and resource production.

Management:

- Efficient and effective enforcement of the Marine Reserve by the Fisheries Protection Service and Coastguard - a showcase for these organisations.
- High profile management, with a watch post and reserve office and well-trained, professional and respected community rangers.
- A high level of community support and participation in the management of the marine reserve and associated activities.
- An excellent Marine Reserve demonstration site to encourage the effective development of the three remaining Marine Reserve sites.
- A good programme of local and visitor education.

Socio-economic aspects:

- A suite of successful, environmentally sustainable alternative income generating activities.
- An effective monitoring programme of both biological and socio-economic impacts with a high level of community participation.
- Appropriate development of tourism which is not damaging to the environment and brings income directly to the Rivière Banane community.

The wider community:

- Good partnerships between the Rodrigues Regional Assembly, non-governmental organisations, the community and other stakeholders.
- Close partnership with the UNDP Marine Park and other regional and international initiatives to build a network of marine protected areas around Rodrigues.
- An attraction for people from Rodrigues, the region and internationally.

Requirements to achieve this vision

1. Establishment of an effective management body directed by the Monitoring Committee for Rivière Banane Marine Reserve.
2. Funding commitment from the Rodrigues Regional Assembly to support the day to day running of the Rivière Banane Marine Reserve.
3. Effective enforcement of the Marine Reserve by FPS and National Coastguard and good collaboration with the Community Rangers and wider community.
4. Successful alternative livelihood programmes and good involvement of the community in these programmes.
5. Effective enforcement of fisheries management regulations outside the Marine Reserve to eliminate illegal fishing from the area.
6. Good supporting institutional capacity and legislation for the Marine Reserve.

INTRODUCTION

Purpose of the Draft Management Plan

In April 2007 the Rivière Banane Marine Reserve was protected by the Rodrigues Regional Assembly under the Fisheries and Marine Resource – Marine Reserves Regulations 2007. This followed over five years of consultation and preparation by a number of organisations including the Rodrigues Regional Assembly and in particular the local marine NGO, Shoals Rodrigues. The Rivière Banane Marine Reserve is one of 4 Marine Reserves gazetted in the northern lagoon, and additional sites will be protected within the UNDP Marine Park Project, building an excellent basis for marine protected areas around Rodrigues. In five years time Rodrigues could have an extensive network of marine reserves which could ensure the sustainable future of lagoon fisheries and contribute towards national, regional and international targets for effective networks of marine reserves.

Under the Darwin Initiative of the UK Government, the project “Developing reserves for biodiversity conservation and sustainable fisheries in Rodrigues” offered support to Shoals Rodrigues and through them the Rodrigues Regional Assembly (RRA) in the establishment of the four marine reserves in the northern lagoon. One of the outputs of this project is an initial management plan to take forward the management of the Rivière Banane Marine Reserve. This plan is written based on consultation meetings held by Shoals Rodrigues with the Rivière Banane community since 2002, a comprehensive socio-economic study of the Rivière Banane area conducted by Shoals Rodrigues in 2006, biological monitoring by Shoals Rodrigues since 2002 and specific meetings with the Monitoring Committee of the Rivière Banane Marine Reserve, individual members of the committee and the Rivière Banane fishers and wider community in November 2007.

A first draft of this plan was circulated to the stakeholders listed in Appendix 1. All consultees were asked for their general comments, their opinion on Consultation Questions at the end of each section and also for any additional suggestions. Written comments were received from Sergeant J.P. Genave of the National Coastguard. Shoals Rodrigues also held meetings with the Rivière Banane community in January 2008 to go through the recommendations with them. These comments on the first draft have, where possible been incorporated into this final draft and are also given in detail in Appendix 4. Continuing consultation and adaptation of the management plan by the management body and stakeholders are anticipated to continue until the Rivière Banane Marine Reserve is operational. Whilst funding under the UK Darwin Initiative project finishes in early 2008, a grant from the Indian Ocean Commission (IOC) will fund some additional consultation and some initial set-up costs for the Marine Reserve.

Background on the Rivière Banane Marine Reserve

The Rivière Banane Marine Reserve is located in front of the village of Rivière Banane on the North East coast of Rodrigues.

The co-ordinates of the corners of the site are:

A: 19° 39.936'S 63° 28.874'E B: 19° 39.328'S 63° 28.500'E
C: 19° 40.473'S 63° 28.628'E D: 19° 40.257'S 63° 28.085'E

The extent of the Marine Reserve can be seen in Figure 1. The total area is 1.5 km² and the perimeter is 5.3 km. The depth ranges from 0.5 m to 20 m.



Figure 1: Location of Rivière Banane Marine Reserve and the surrounding communities (from Hardman et al 2006).

Consultation on the development of the Rivière Banane Marine Reserve

In 2002 Shoals Rodrigues had funding from GEF-SGP for a project to talk to fishing communities about the problems they faced and another project to look at the possibility of creating marine reserves for fisheries management and biodiversity conservation. Through a series of consultation meetings with the Rivière Banane community and other communities and an assessment of suitability of sites for protection, Rivière Banane was selected as a possible site for a marine reserve. Over the intervening years Shoals Rodrigues have held numerous training, consultation and other meetings with the fishers of Rivière Banane and have developed an excellent relationship with the community.

The Rodrigues Regional Assembly took these proposals forward and in 2007 four Marine Reserves including Rivière Banane were gazetted by the Rodrigues Regional Assembly. Prior to gazettement of the site, more community consultation was carried out with people at Rivière Banane by Shoals Rodrigues.

The Rivière Banane site was selected to include the special area “Aquarium” which still contains good numbers of commercial and other fish species. This site was seen by fishers and scientists as a good potential source of fish larvae that could replenish surrounding areas if left unfished. The area was also selected because of the highly degraded reef flat which has the potential for recovery of both habitats and the associated species.

Aquarium is also a distinctive site, both topographically and biologically, forming a natural snorkelling pool surrounded by coral and diverse fish which is currently an attraction to tourists despite its degraded state. If the area is effectively protected from fishing and other damaging impacts it could become much more attractive to visitors and locals alike and develop as a scientific and educational resource for the Island of Rodrigues.

The entire area of the Marine Reserve site is subtidal. The main subtidal habitats are macroalgae and seagrass on sand, reef flat corals and reef slope corals. The reef flat is currently degraded, with low live coral cover (less than 15%). However the reef slope is healthy, with over 50% coral cover and 69 species of coral have been recorded. Coral cover is high at Aquarium, however the area appears to be impacted by fishing activities (discarded and broken basket traps, fishing line are found at the site). The corals have not been affected by coral bleaching in recent years. Fish communities show signs of overfishing and are dominated by damselfish, with large predatory fish rare. The area has the potential for high biodiversity and is an important site for the endemic coral *Acropora rodriguensis* and the damsel fish endemic to Mauritius and Rodrigues, *Pomacentrus rodriguensis*.

The area has the potential for restoring a high level of biodiversity and is an important site for the endemic coral *Acropora rodriguensis* with high abundance and the damsel fish endemic to Mauritius and Rodrigues, *Pomacentrus rodriguensis*.

The main resource use in the area is fishing, with 56 registered fish from Rivière Banane, Brulé, Trefles, Roche Bon Dieu, Bel Air and Grand Montagne. They fish for octopus using harpoons and for fish with basket traps and lines. There is also seine net fishing in the area by the team from Point l’Aigle.

Hotels and tour operators from Port Mathurin, Anse aux Anglais and Grand Baie bring tourists to go snorkelling at Aquarium and local people also go snorkelling at the site. Three dive operators (from Pointe Venus Hotel, Cotton Bay Hotel and Rodriguez Diving at Pointe Monier) also use the area. There are currently relatively few conflicts in the area, but fishers believe that tourists destroy basket traps in Aquarium.

The community supports the development of the Marine Reserve because they have seen their catches decline in recent years. Many fishers have said that they would be willing to move to working on the land and the current GEF-SGP sustainable agriculture project will support diversification into new agricultural practices.

LEGISLATION AND PROTECTION

Legal protection

Under the Fisheries and Marine Resources – Marine Reserve Regulations 2007, the Rivière Banane Marine Reserve is protected from all fishing activities, except for those prescribed by the Commissioner for Fisheries and authorized in writing by the Departmental Head of Fisheries. The penalty for fishing in the Marine Reserve will be Rs2000-5000 for a first offence and Rs5000-10000 and a prison term of up to two years for second and subsequent offences. The Rivière Banane community have suggested that these penalties are not large enough to act as an effective deterrent. They suggest Rs10,000 fine for a first offence and Rs20,000 for a second offence. On the other hand, the National Coastguard find these fees reasonable.

It is anticipated that additional byelaws or other legislation will be needed to ensure the full protection of the site. For example, legislation to support the charging of fees for diving and snorkelling in the area, mooring of pleasure craft and other recreational uses could support the funding of the Marine Reserve. Byelaws to manage tourism and recreational impacts will also be required. One stakeholder raised the need for an urgent update of the Marine Reserve legislation to clarify permitted fisheries activities within the Marine Reserve.

Managing fishing pressure in the Marine Reserve and in the surrounding area

It is proposed that the reserve be closed to all fishing so the fishing pressure within the reserve will be reduced to a low level, as near as possible to zero (depending on compliance). High protection of this nature will lead to the widest benefits in terms of species and habitat recovery. Outside the reserve there is a risk that fishing pressure will increase but two GEF-funded alternative income generating projects for the Rivière Banane community are working towards providing additional employment in marine tourism and sustainable agriculture to employ some of the fishers who previously fished in the Marine Reserve area. The Community Rangers will also be employed from the Rivière Banane fishing community. With the support of the GEF-SGP projects, and if the Rodrigues Regional Assembly supports the employment of Community Rangers, alternative or additional income opportunities will be available for around 45 of the 56 registered fishers. The total fishing effort in the area should therefore decrease significantly.

Managing tourist impacts in the Marine Reserve and the surrounding area

The Marine Reserve will be protected under the Fisheries legislation from extraction of curios and other potential tourist impacts. However, accidental impacts such as damage to coral are more likely. Funding for the installation of two mooring buoys has been secured from GEF-SGP. It is suggested that a Marine Reserve leaflet be produced that explains the regulations in the reserve and a Code of Conduct for diving, snorkelling and boat operating to protect corals. This Code of Conduct could be publicised widely and training offered to dive and snorkel guides to ensure that it is followed by visitors to the reserve.

Issues such as visitor number control, litter production and impacts of tourist infrastructure (e.g. water consumption and sewage production) will have to be

addressed by the Monitoring Committee for Rivière Banane Marine Reserve and practical solutions implemented by the Management Body.

INSTITUTIONAL ARRANGEMENTS AND RESPONSIBILITIES

As the Rivière Banane Marine Reserve is protected under Fisheries Legislation, the ultimate authority for the reserve is the Chief Commissioner's Office. Management and strategic decisions will be the responsibility of the Monitoring Committee for Rivière Banane Marine Reserve which includes representatives of a number of government departments as well as a range of other stakeholders. To ensure the long-term stability of the Rivière Banane Marine Reserve it is suggested that the Monitoring Committee for Rivière Banane Marine Reserve or an alternative management authority be given legal status and a clear mandate.

It is anticipated that the day-to-day management responsibility will be delegated to an organisation (known as the Management Body in this document) administered by the Rodrigues Regional Assembly and led by the Steering Group on the Monitoring Committee for Rivière Banane Marine Reserve. There are a number of options for the nature of this Management Body:

1. A company
2. A new non-governmental organisation
3. An existing organisation

The newly formed Discovery Rodrigues initiative, a company owned by the Rodrigues Regional Assembly, with a board of directors, may provide a model for a company or new NGO. An existing organisation would have the advantage of being established and respected in the community. Whichever approach is taken, the Management Body will require clear terms of reference. These terms will ensure that the operation of the Management Body does not undermine the objectives of the Marine Reserve or the regular involvement and participation of stakeholders in the management. In matters of enforcement the relevant commissions and departments will retain their responsibilities under their areas of jurisdiction. The Management Body would deal with issuing permits, managing staff, finances and collecting fees and other day-to-day matters under the guidance of the Monitoring Committee for Rivière Banane Marine Reserve.

When the Management Body has been established, they will use the latest version of the management plan to develop a programme to implement the management suggested. Depending on the arrangement agreed on, the Management Body will also be required to produce a budget to submit to the Monitoring Committee for Rivière Banane Marine Reserve and to the Rodrigues Regional Assembly, for their approval.

Responsibility for strategy and future developments in the Marine Reserve will remain with the Monitoring Committee for Rivière Banane Marine Reserve. The management of Rivière Banane Marine Reserve will be the responsibility of the Management Body. It is anticipated that the management body would:

- Prepare and implement annual workplans and budgets
- Employ and supervise the Marine Reserve Manager, Community Rangers and other staff employed to work at the Rivière Banane Marine Reserve.

- Co-ordinate volunteers working to support the Marine Reserve.
- Prepare written reports and accounts based on a schedule provided by the Monitoring Committee for Rivière Banane Marine Reserve.
- Ensure the enforcement measures were effective.
- Oversee research and monitoring in the Marine Reserve.

Staff of Rivière Banane Marine Reserve would report to the Marine Reserve manager who in turn reports to the Director of the Management Body. The Director of the Management Body will be a member of the Monitoring Committee for Rivière Banane Marine Reserve and will be the main channel of communication between the two organisations.

FINANCE AND FUND-RAISING

a) Budget

An estimated budget covering the first year of operation of the RBMR has been prepared and can be found in Appendix 2. Some of the funding has already been secured, but other areas still require funding sources to be identified. Appendix 3 outlines aspects of work to be carried out, suggested timescales and whether or not funding has been secured. The areas of funding yet to be secured are outlined in Appendix 3. A total (including 10% contingency) of approximately Rs 697,400 is estimated for start up costs for the reserve office and equipment for community rangers and a total of Rs 2,270,840 for the annual running costs including salaries.

b) Sources of revenue

Recreational use fees will be the main sources of revenue generated by the Marine Reserve. It is anticipated that the running costs for the Marine Reserve will initially have to be covered by the Rodrigues Regional Assembly with support from donor-funded projects. User fees will not generate significant revenues under current circumstances (numbers of visitors etc) but it is important that other revenue opportunities are explored as the Marine Reserve and the alternative income projects develop. For the long term stability of the Marine Reserve, the aim should be to recover as much of the running costs as possible from user fees. It is suggested that a bank account be established for fees and other money received or collected by the Management Body.

Fees

These suggested fees would be revised on a regular basis to take inflation into account.

(They would also be charged in addition to the charge for the service provided by the dive or boat operator)

a) Diving

- An Annual Dive Fee at a recommended level of Rs 1000.
- A Daily Dive Fee at a recommended level of Rs 200.

b) Snorkelling

- An Annual Snorkel Fee at a recommended level of Rs 500.
- A Daily Snorkel Fee at a recommended level of Rs 100.

c) Glass bottom boat

- A fee for glass bottom boat trips at a recommended level of Rs 50 per passenger for a single trip.

d) Boat mooring on mooring buoys in the Marine Reserve

- An annual Mooring Fee at a recommended level of Rs 2500.
- A daily Mooring Fee at a recommended level of Rs 500.

e) Visitors to Marine Reserve in other boat

- A recommended fee of Rs 25.

f) Special use fees – e.g. for scientific research and filming for TV

- An annual special use fee of Rs 6000
- A daily special use fee of Rs 1500

g) Other sources

Grants will be sought for further development of the Marine Reserve by the Management Body, and by the Monitoring Committee for Rivière Banane Marine Reserve and the member organisations.

A programme to allow individuals and businesses to donate to the Marine Reserve and sponsor its operation is suggested. This would be administered by the Management Body.

Other funding mechanisms such as sale of souvenirs, guided tours of the Marine Reserve and the village, selling sustainably produced local produce and guide books will be explored. Other fundraising suggestions from stakeholders include holding a community fancy fair, international contests, sporting events and concerts.

Looking at more long term solutions, the possibility of the implementation of an environmental tourist tax on air tickets from Mauritius to Rodrigues to provide a fund for projects of this nature was also suggested.

The Management Body could work with local hotels and tour operators to make attractive packages available to tourists whilst ensuring maximum benefit to the local community.

IMPLEMENTATION OF MANAGEMENT

a) Staffing

It is suggested that the Rivière Banane Marine Reserve is be staffed by a team of people comprising 8 Community Rangers, under the direction of a Marine Reserve Manager. The manager will report to the Director of the Management Body, who will in turn report to the Monitoring Committee for Rivière Banane Marine Reserve.

The responsibilities and qualifications will be as follows:

Marine Reserve Manager

Responsibilities

- To oversee and implement the development and management of the Rivière Banane Marine Reserve under the guidance of the Management Body and the Monitoring Committee for Rivière Banane Marine Reserve.
- To supervise the activities of the staff assigned to the Rivière Banane Marine Reserve.
- To communicate regularly with the Management Committee, Rodrigues Regional Assembly and stakeholders.
- Monitor radio communication and assist in communication with enforcement officers.
- To prepare reports on a monthly basis for consideration by Management Body and Monitoring Committee for Rivière Banane Marine Reserve.
- To be responsible for the construction of infrastructure related to the Rivière Banane Marine Reserve.
- To co-ordinate awareness raising and education locally and further afield.
- To co-ordinate staff development.
- To ensure staff welfare.
- To contribute to fund raising initiatives.

Qualifications

- Experience of boat operation
- Good literacy, numeracy and computer skills
- Experience of management and accounting
- Knowledge of fisheries or marine biology or coastal zone management.
- First aid training.
- Dive training.
- Boat engine and equipment maintenance skills.
- Good interpersonal skills.

Suggested salary: Rs 20,000 per month (all salaries should be checked with the Labour Office).

Community Rangers x 8 ¹

The rangers will report to the Manager of the Rivière Banane Marine Reserve.

The responsibilities, qualifications and remuneration will be as follows:

Responsibilities :

- To carry out a programme of surveillance of the Rivière Banane Marine Reserve to ensure that no fishing or other extractive activities are taking place in the park. Suggested regime – 5 8 hour shifts per week for each Ranger. Shifts could be 5am – 1pm, 1pm – 9pm and 9pm-5am. This would give two Community Rangers on duty at all times. They should be supported at all times in their work by an “on-call” FPS or National Coastguard officer.
- To operate VHF radios and keep in regular contact with the Marine Reserve Manager and law enforcement officers.

¹ **NB: The number of rangers has been discussed at length but it has been suggested that a smaller number could effectively manage the area – this is a topic requiring further consultation.**

- To ensure that divers and snorkellers have paid the appropriate fee and are following good practice whilst in the Marine Reserve.
- To raise awareness of the Marine Reserve with the local community and with visitors through informal contact and also by assisting in education campaigns.
- To liaise with officers from the Fisheries Protection Service and the National Coastguard to ensure that effective enforcement of the specific Marine Reserve legislation and also national fisheries and environmental legislation takes place.
- Check the mooring buoys and do simple maintenance or arrange repairs as appropriate
- Assist with monitoring activities – including dive surveys.
- To maintain boats and equipment.

Qualifications :

- Experience of boat operation and boat operating qualification (or willingness to train)
- Knowledge of fisheries or marine biology or coastal zone management.
- Local knowledge as ex-fisher from the area.
- Ability to swim, snorkel and dive (or willingness to train)

It is anticipated that the Community Rangers would be a mix of female and male to reflect the composition of the Rivière Banane fishing community. It is important to ensure that social or cultural issues do not impact on the recruitment of women to these posts.

Salary: the Rivière Banane community suggested a monthly salary for the Community Rangers of Rs 6000.

Rangers will receive training in:

- Boat operation and safety at sea
- Swimming and lifesaving
- First aid
- Snorkelling and diving
- Local marine ecology and identification
- Marine reserve theory and practice
- Customer care
- Conflict management
- Basic language training – English and French
- Basic literacy and numeracy

b) Infrastructure

Demarcation and mooring buoys

A plan for the installation of 16 marker buoys, and 4 corner buoys has been developed by Shoals Rodrigues and funded by IOC. These buoys will be placed at key locations around the boundary of the Marine Reserve by Shoals Rodrigues with the assistance Reef Conservation Mauritius.

Information boards

3 information boards will be placed on the coast at Rivière Banane to explain the location and purpose of the Rivière Banane Marine Reserve.

Watch tower

Funding has been secured for a watch tower for Community Rangers and law enforcement officers to watch over the Rivière Banane Marine Reserve. The watch tower will be in place by June 2008. Improvements to the road to the watch tower site will also be needed to ensure good access.

Reserve Office

The watch tower will not be easily accessible to visitors so it has been suggested that a small reserve office be constructed near the beach at Rivière Banane. This office would provide an officer for the Marine Reserve Manager and duty station for the Community Rangers, sleeping room for enforcement officers, kitchen and bathroom for those on duty, a toilet for visitors, office for issuing permits, educational space for the local community and visitors. This office would support all aspects of work on the Marine Reserve. The Rivière Banane community would like to see the office constructed near to the North Beach. The office should be designed with environmental sustainability in mind and fit in well with the village and surrounding landscape.

Improved access to the West beach

Rivière Banane residents are concerned that the current access to the West beach is via their vegetable gardens and they have asked for assistance in improving the track to the beach.

c) Revenue Collection

- Divers and snorkellers visiting the Marine Reserve with boat operators
- The boat operators will be able to buy permits in advance from the Marine Reserve Manager at the Reserve Office
- Snorkellers visiting independently and snorkelling from shore
- These visitors will need to buy a permit directly from the Reserve Office.

- The glass bottom boat operators would need to buy the appropriate number of permits for their visitors from the Marine Reserve Office or from Community Rangers.
- Boats mooring in the Reserve will buy their permit from the Community Rangers when they visit the mooring buoys on their patrol.
- Other boat passengers will be able to buy their permits in advance from the office or from the Community Rangers on their patrol.
- Special use fees would be arranged in advance with the office.
- Online pre-payment of fees could be an option for tourists and could be investigated in future.

MONITORING

a) Biological monitoring

Shoals Rodrigues already has three monitoring sites in or around the Rivière Banane Marine Reserve. They anticipate continuing this monitoring and contributing their results to the ongoing management of the reserve.

Shoals Rodrigues monitoring at Rivière Banane includes habitat and species surveys and some environmental data recording (water quality, nutrient levels, temperature and salinity).

b) Monitoring of use of Marine Reserve

The Marine Reserve Manager will be responsible for reporting on the numbers of visitors to the Marine Reserve, type of use (snorkelling, diving, glass bottom boat or other type of visit. Visitor recording will require the co-operation of the visitor boat operators.

c) Socio-economic monitoring

It is important to monitor the social and economic effects of the Marine Reserve on the Rivière Banane community. A repeat study of the Soc-Mon survey in 2009 after two years of management may be a useful way to assess changes in the socio-economic situation of the community.

The livelihoods of fishers displaced by the Marine Reserve should be monitored carefully. It is likely that the benefits from alternative livelihood programme will not be equally distributed between those fishers affected. The Rivière Banane Management Body should ensure that all those affected have access to training and also to support through alternative livelihood projects.

d) Monitoring of effects of the reserve on adjacent fisheries

One of the aims of the reserve is to make a contribution to sustainable fisheries outside the reserve. To monitor the effectiveness of the reserve in this area it is suggested that a programme of fisheries monitoring looking specifically at the adjacent fishing grounds is established. A combination of current FRTU monitoring and some additional work to increase sample sizes of catches monitored would be ideal. Collecting this information on fisheries effects of the Marine Reserve will be important for helping fishers to understand what is happening.

Community participation in monitoring

In all these areas of monitoring it is important that the community have a high level of involvement. Training for Community Rangers and Community Volunteers could allow people to assist in biological, socio-economic and fisheries monitoring.

EDUCATION AND AWARENESS RAISING

(i) Community education on marine ecology, marine protection and fisheries management to support the establishment of the Marine Reserve

Under the IOC project Shoals Rodrigues will carry out an education programme with the community in Rivière Banane. They will also carry out a wider campaign of

education and awareness raising to ensure that the wider Rodrigues community understands the purpose and function of the Rivière Banane Marine Reserve. A “Junior Rangers” scheme was suggested to involve local young people in the running of the Marine Reserve as an education initiative.

(ii) Education of visitors to the marine reserve

With the start-up funds from IOC, education will initially be shared between Shoals Rodrigues, the Community Rangers and other members of the local community. Over time, the Community Rangers will be fully trained to carry out education of visitors and the wider community.

(iii) Basic training for Rivière Banane community.

In consultation meetings, fishers from Rivière Banane asked for training in basic literacy and numeracy that would help them to contribute to the work of the Marine Reserve and improve their chances of other employment too. Assistance should be requested from the Commission for Education.

The community also asked that facilities like a computer be made available sometimes for them to practice on and for their children to learn computer skills.

(iv) Community Rangers education and professional development.

Community Rangers should be given the opportunity to continue their training after initial ranger training is completed. Training from Rangers from other marine parks in the region is suggested as an effective method. This could be developed into a ranger exchange programme to share experiences and management techniques regionally, for example through the WIOMSA network.

ENFORCEMENT

Three organisations on Rodrigues have mandate for law enforcement: Police, National Coastguard and Fisheries Protection Service (FPS). The two services most likely to enforce marine legislation are Coastguard and FPS. With the new Rivière Banane Marine Reserve it is anticipated that a high level of enforcement will be required in the initial few years of operation.

As the enforcement of the Rivière Banane Marine Reserve would be an additional role for the Coastguard and the Fisheries Protection Service, there are concerns in both organisations that current staff may not be sufficient. To allow these two organisations to work effectively to enforce the Marine Reserves legislation, additional resources will be required to support this new role for both organisations. It is suggested that the Rodrigues Regional Assembly is approached for additional resources to fund 4 full time Fisheries and/or Coastguard enforcement officers to support the work of the Community Rangers. The extra cost of these officers has been included in the budget in Appendix 3, based on monthly salary and costs of Rs10,000 per officer.

Rivière Banane fishers are particularly concerned about the impact of illegal fishing inside and outside the Marine Reserve, especially sea cucumber fishing. This needs to be addressed directly.

EVALUATION AND REVIEW

Once the Management Plan has been agreed (by June 2008?) it is important that the document is flexible so that management can be responsive to changes in circumstances.

A possible programme for review would be:

- An interim review after two years.
- A major review after four years.
- Flexibility for modifications between reviews – possible to adapt rapidly to changing circumstances.

It is anticipated that the reviews would be led by the Monitoring Committee for Rivière Banane Marine Reserve.

Suggested actions and requirements for further progress with the Rivière Banane Marine Reserve are outlined in Appendix 4.

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Appendix 1

List of consultees for this document

Monitoring Committee for Rivière Banane Marine Reserve:

Mr Chandrasen Matadeen – Departmental Head, Commission for Marine Parks
Mr Jean Paul Colin – Departmental Head, Chief Commissioner's Officer (incl. fisheries)
Mr Damad Peermamode – Officer in Charge, Fisheries Protection Service
Sergeant J.P Genave – National Coastguard
Mr M.J. Sylvio Perrine – Officer in Charge, Fisheries Research and Training Unit
Mr J. Henri Félicité – Officer in Charge, Environment Unit
Mr Jean Rex Pierre Louis – Administrative Assistant, Marine Park Project
Mr Christian Edouard – President of Association de Planteurs de Rivière Banane
Mr Christophe Meunier – Tour operator
Mr Jacqui Degremont – Dive operator
Mr Jean Maurice Edouard – Head of Village, Rivière Banane
Mr Alex André – Dive operator
Mrs Jenny Pierre Louis – Octopus fisher/President Association Pecheurs de Rivière Banane
Mr Jean Claude Cupidon – Basket trap fisherman, Rivière Banane
Mr Harry Larose – Gite owner Rivière Banane
Mrs Sabrina Desiré – Field Centre Manager, Shoals Rodrigues
Mr Jovani Raffin – Research and Training Officer, Shoals Rodrigues

Rodrigues Regional Assembly

Mr Johnson Roussety – Chief Commissioner
Mr Franceau Grandcourt – Commissioner for Marine Parks and Environment

Other consultees in Rodrigues

Mr Mattan – Departmental Head, Tourism
Mr Davis Hee Hong Wye – ReCoMap Focal Point
Mrs Marie Lourdes Raphael – Environment Unit

Other specialists:

Mrs Pamela Bapoo-Dundoo – GEF-SGP
Mr Remi Ratsimbazafy – WWF Madagascar/IOC
Mrs Gina Bonne - IOC
Mrs Yajoshi Basant Rai – Focal Point for MPA Network
Mr Denis Etienne – IOC
Dr Alasdair Edwards – Newcastle University/Darwin Initiative

Appendix 2

Basic budget for first year of operation of Rivière Banane Marine Reserve

Set-up costs in 2008	Cost in Rs
Build office	200,000.00
Office equipment	60,000.00
Computer	30,000.00
Kitchen	30,000.00
Bathroom	20,000.00
Furniture	30,000.00
Radio	36,000.00
Uniforms	30,000.00
Dive equipment	120,000.00
Snorkelling equip	12,000.00
Safety equipment	24,000.00
Binoculars	6,000.00
Camera	6,000.00
Video	12,000.00
Torches and lights	18,000.00
Total	634,000.00
10% contingency	63,400.00
Total incl. contingency	697,400.00

Running costs per year	
Manager	240,000.00
Rangers	576,000.00
Enforcement officers	480,000.00
Part-time accountant	120,000.00
Fuel for patrols	130,000.00
Telephone	30,000.00
Electricity	14,400.00
Stationery	30,000.00
Education	60,000.00
Cleaning/litter picking	144,000.00
Training	60,000.00
Monitoring	60,000.00
Maintenance	120,000.00
Total	2,064,400.00
10% contingency	206,440
Total incl. contingency	2,270,840.00

Appendix 3: Suggested timescale and funding summary

	2007		2008												Funding	Source	Lead Organisation
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
First draft of management plan - comments	Yes														Yes	DI	SR
Consult on management plan with community	Yes	Yes													Yes	DI	SR
Complete second draft of management plan		Yes	Yes												Yes	DI	SR
Establish Management Body			Yes	Yes											No	RRA?	MCRBMR
Continue work on management plan, as appropriate				Yes	Yes	Yes									N/A		MCRBMR
Secure land for watch tower and reserve office		Yes	Yes	Yes											No	RRA?	MCRBMR
Education Sessions			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	IOC	SR
Purchase of materials for IOC work			Yes	Yes											Yes	IOC	SR
Demarcation					Yes	Yes									Yes	IOC	SR/RBC
Information Boards				Yes	Yes										Yes	IOC	SR/MCRBMR
Monitoring					Yes	Yes		Yes		Yes	Yes	Yes	Yes	Yes	Yes	IOC	SR/RBC
Purchase Boat			Yes	Yes											Yes	IOC	SR
Training Rangers						Yes									Yes	IOC	SR
Continue training rangers and community							Yes	No	RRA?	MCRBMR							
Construct watch Post					Yes	Yes									Yes	IOC	SR/RBC
Construct Reserve office					Yes	Yes									No	RRA?	MCRBMR
Equip Reserve Officer						Yes									No	RRA?	MCRBMR
Opening Ceremony								Yes							Yes	IOC	MCRBMR

RRA = Rodrigues Regional Assembly
IOC = Indian Ocean Commission
DI = Darwin Initiative (UK Government)
SR = Shoals Rodrigues
RBC = Rivière Banane community
MCRBMR = Monitoring Committee for Rivière Banane Marine Reserve

Appendix 4 – Comments from Stakeholders on Draft 1 of this document

In addition to the consultation meetings and interviews outlined above, specific feedback on the first draft of this document was received from one key stakeholder representing a Government body and from the Rivière Banane community. These comments have been incorporated where possible in the second draft and are summarised below:

Comments from Sergeant J P Genave, National Coastguard:

1. Legislation

As a law enforcement officer I am considerably concerned with the contents of the Rodrigues Regional Assembly Fisheries and Marine Resources-Marine Reserve Regulations 2007 Section 3(1) & (2) where it is stipulated that:- The different fishing methods and other activities to be authorised within the Marine Reserves shall be prescribed by the commissioner responsible for the subject of Fisheries. There it is clearly defined that there may be some kind of fishing or other activities within the Marine Reserve. It is quoted in the draft that the reserve will be operational by mid 2008. I therefore suggest that some regulations as regards the methods of fishing and the activities authorised be enacted well before the coming into operation of the Marine Reserve.

2. Penalties

The penalties are quite dissuasive and reasonable.

3. Management Body

I think that a corporate body (Govt & Private) would be most appropriate for the management of the Reserve. The body may be constituted as an authority or Corporation with legislative powers. Such powers should be legitimated through enactments of course.

4. Institutional arrangements

The draft proposals fit the requirements

5. Budget

I may not be in a position to submit my views on that issue but I might suggest that provision be made for unforeseen rise in costs of goods and services (maintenance, spares, fuel, CEB etc).

6. Budget met by RRA

The Fisheries and Marine Reserves Act 1998, caters for a Marine Protected Area Fund. I think budget may be raised from that Fund as a Marine

Protected Area comprises of either a Fishing reserve; a Marine Reserve or a Marine Park.

7. Fees

A committee constituting of all operators of Dive boats; Representative of consumers; tour Operators etc may find out a compromise on that matter.

8. Other Revenue-generating activities

International contests like Chasse aux Tresor Sous-marine may be organised regularly with the help of the Office du Tourisme.

9. Funding of Marine Reserve Management and Community Rangers

Once more the Marine Protected Area Fund may be solicited. As regards salaries the views of the Labour Office may be sought.

10. Reserve Office

The Commission for tourism and Commission for Public Infrastructure may assist.

11. Collection of fees

The system is suitable but in the future *On-Line Booking* for foreigners should be possible.

12. Enforcement by the National Coast Guard

For the time being it would be practically impossible for the NCG to be available round-the-clock at the RBMR due to lack of manpower which barely meets their actual basic operational commitments. But the question of dedicating a team of Coast Guard Officers to the Rivière Banane MR lies on the decision of the Central government itself. The NCG at present would merely assist in periodic patrols which I am sure will not be sufficient.

Comments from the Rivière Banane Community

1. Legislation and Protection

The fines stated in the draft are too low and wouldn't discourage illegal fishing. Instead, fines should be 10,000Rs for a first offence and 20,000 plus a prison sentence for the second offence.

A further addition to the regulations is that boats should only be allowed to enter the reserve using sail or engines; propulsion by wooden poles should not be allowed as it causes damage to the coral communities.

2. Institutional arrangements and responsibilities

Shoals Rodrigues should manage the Marine Reserve, however the Director should be someone from the Rivière Banane community as the community needs to be fully involved in the reserve management.

3. Finance and fundraising

The fees stated in the draft are acceptable.

Fundraising activities could include a raffle, fancy fair (village fete), concert or a volleyball match.

4. Implementation of management

The salaries stated in the draft are appropriate for the posts.

5. Infrastructure

All are in agreement with the construction of a small reserve office, however it should be on the north beach. A track road will need to be build to the beach to allow access for tourists and other visitors.