

CREATION PROJECT OF A MARINE MAMMAL OBSERVATORY IN THE SEYCHELLES

Workshop

19- 20 January 2005- SFA, Mahé, Seychelles



Survey report :

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Workshop report for the creation of a Marine Mammal Observatory Marine in the Seychelles

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CONTEXT AND HISTORY OF THE WORKSHOP

The Seychelles government has been interested in the conservation of the natural heritage that Marine Mammals represent for a long time ... and has been as such involved in the creation of the first Sanctuary for the Indian Ocean Whales in 1979 by the International Whaling Commission (IWC).

In 2002, the Zoological Society of Paris (ZSP) and the Paris Natural History Museum on the one hand, the French Ministry of the Environment and Natural Resources (MENR) and the Marine Conservation Society Seychelles (MCSS) on the other hand, joined to develop a Volunteer Observer Network for Cetaceans in the Seychelles. The objective was to create a tool for the acquisition of regular data regarding the populations of cetaceans that may contribute to plan specific studies and take decisions as to the conservation programmes run by the MENR.

On that occasion, the SZP presented identification sheets of Cetaceans and observation reports, both in French and English, which were displayed jointly with the collaboration of the Ministry of Transportation and Tourism (MTT), the Seychelles Fishing Authority (SFA), the Marine Charter Association and the MCSS (Claro & Hergueta, 2002).

When the Observer Network was set up, we carried out a series of interviews so as to assess the number of sightings of Cetaceans in the Seychelles waters, confirming the regular or seasonal presence of a very rich biodiversity as regards marine mammals (Claro & Hergueta, 2002).

The number of data collected between 2002 and 2004 by the network proved very limited, due to a rapid loss of motivation in the absence of a local follow-up by those involved in the network on a regular basis.

In order to overcome this problem, Stéphane Hergueta (SZP) proposed in 2004 his expertise to the MENR to consider the creation of a Marine Mammal Observatory in the Seychelles (MMO Seychelles). This local and perennial structure would be a tool for both the expertise and sustainable management of a part of the Seychelles natural heritage.

At the request of the MENR, Stéphane Hergueta drew up the Terms of Reference (ToR) for the MMO Seychelles that were approved by the MENR in October 2004. The ToR underline the need to integrate the different Seychelles government and association actors to the reflective process of the MMO project, regarding the needs for its creation and the definition of its objectives and how it should be operated and funded, and suggest the creation of a working group.

This proposition was accepted by the MENR. The Cooperation and Culture Department of the French Embassy supported the project and funded the expertise mission by Stéphane Hergueta for the organisation of the first meeting de travail planned on 19 and 20 January 2005. The meeting was held in the SFA offices and the SCMRT-MPA contributed to the meeting expenses.

WORKSHOP REPORT FOR THE CREATION OF A MARINE MAMMAL OBSERVATORY IN THE SEYCHELLES

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The meeting, organized by the Ministry of Environment and Natural Resources (MENR), with the technical collaboration of the Zoological Society of Paris (ZSP) was held in the SFA offices (Mahé, Seychelles), on 19th and 20th January 2005.

The workshop was co-funded by the Service of Cooperation and Cultural Action (SCAC) of the French Embassy in the Seychelles, the MENR, the Ministry of Tourism and Transportation (MTT) and the Seychelles Centre for Marine Research and Technology –Marine Park Authority (SCMRT-MPA).

27 people took part in this workshop representing the MENR, the MTT, the SCMRT/MPA, the SZP, the Seychelles Fishing Authority (SFA), the Seychelles Island Foundation (SIF), the Coast Guards, the IOTC, the Institute for Research and Development, the Fishing Boat Owners Association (FBOA), Global Vision International (GVI), the Island Conservation Society (ICS), the Marine Conservation Society Seychelles (MCSS), Nature Seychelles and the SCG.

Objectives of the meeting

Here are the main objectives of the first workshop's meeting:

- Assessing the current state of knowledge on Marine Mammals in the Seychelles,
- Discussing the need for the Seychelles to develop a monitoring and expertise tool on Marine Mammals, allowing a better description of their status, evaluating the possible threats to those species and the potential for developing eco-tourism activities relating to Marine Mammals ;
- Identifying the possible partners interested in the Creation of a Marine Mammal Observatory in the Seychelles (SMMO).

Workshop process

19th January 2005 morning

Dr. Stéphane Hergueta, expert with the SZP, showed the results of the data stemming from literature and collected in 2002 by him when the Observer Network was created, and by the Ocean Alliance campaign. It turns out that the Seychelles archipelago is an outstandingly rich site as regards marine biodiversity with 28 to 30 species of Cetaceans and one species of sirenia. Since the data collection has relied so far on punctual scientific campaigns carried out several years apart and by different teams, it is not possible to draw the least conclusion about the seasonality of their occurrence (especially for the migratory species), and the role that the Seychelles waters play in the different stages of their biology (food, reproduction, etc.).

David Rowat (MCSS) and Riaz Aumeeruddy (SFA), major partners of the Volunteer Observer Network for Cetaceans in the Seychelles (ROCS), showed all the data collected by the ROCS between 2002 and 2004. They both underlined the need to create a structure of local coordination in order to develop this network required to keep the observers motivated.

S. Hergueta started with an overview of the current conservation status of the different species of Marine Mammals occurring in the Seychelles. The status of those species, such as it is defined by IUCN on an international level, has been identified from the available scientific knowledge, more or less regular census campaigns plus in the Antarctic (whales), and the surveys conducted in some geographical areas without any relation to the Western Indian Ocean (Eastern Pacific for spotted dolphins and spinner dolphins). The results show that the status of most Seychelles species is only specified for 17 species and as such is not representative of the local realities, while it is essential to set up efficient conservation measures, among which in the Indian Ocean Whale Sanctuary.

Those interventions and the discussions that followed, underlined the lack of data on the distribution, the populations and the conservation status of Marine Mammals (whales, dolphins and dugongs) in the Indian Ocean Whale Sanctuary. Thus, it is difficult to point out priority levels for the different species only based on the biological criteria and their conservation status.

19th January 2005 afternoon

The interventions of the Conservation department of the MENR (Pierre-André Adam), the MTT (Marsha Parcou) and the SFA (Vincent Lucas) allowed reviewing the conservation aspects, the development of eco-tourism and the interactions with fishing activities. Bertrand Wendling (SCAC/ MENR) put emphasis on the need of coordination both regional and international by an intervention on the newest knowledge on the migrations of humpback whales.

The following presentations and debates showed that:

- As regards conservation issues, if Marine Mammals are protected on the national level (legislation) and on the international level (Convention on Migratory Species, CITES, International Whaling Commission), it is urgent to identify the possible threats to those species on the local level (pollution, poaching, etc.) and on the regional level (tankers traffic). Information and awareness campaigns about the marine natural heritage should include a specific speech regarding Marine Mammals that could be supplied by the MMO Seychelles (SMMO) activities ;
- As regards the development of eco-tourism activities relating to Marine Mammals, it is urgent to identify the sites where the occurrence of the animals and their density are sufficient to develop whale/dolphin-watching activities. This identification work should be

carried out in close collaboration with private partners (tour operators, hotels, charter companies, diving centres, etc.). Besides, some specific information disseminated to tourism professionals regarding cetaceans should allow including those attractive animals to tourists to all the communication media. It could be completed by a training session that would help the tourist operators specializing in sea activities to give their customers the opportunity to watch Cetaceans ;

- Regarding any interaction with fishing activities, the priority is to study the phenomenon of depredation so as to reduce the impact of cetaceans (false killer whales and pilot whales at least) on long-line fishing. Though no statistics are available, occasional captures of dolphins by longliners scarcely occur, mainly because unlike those of the East Pacific, the dolphins of the Western Indian Ocean barely mix with tuna.

20th January 2005 morning

The discussions focused on identifying the objectives of a Marine Mammal Observatory according to the 3 main lines described above (conservation, ecotourism and interactions with fishing activities), on the national, regional and international levels (see page 6).

A general consensus came up in favour of the creation of a Marine Mammal Observatory in the Seychelles.

SMMO activities should at least include:

- Developing, managing and analysing the data collected by the ROCS;
- Developing a Seychelles Stranding Network (SSN), field interventions, managing and analysing the data collected by the so-called network;
- A regular and seasonal monitoring of populations of Marine Mammals in the monitoring sites;
- Managing the data base;
- Setting up training sessions and awareness campaigns and activities.

In view of the objectives, every member of the workshop presented his own activities and explained how he could get involved in the SMMO activities.

According to those declarations of intent, the present intervention areas by the partners of the SMMO mainly focus on the inner islands of the granitic plateau and the site MAB UNESCO of Aldabra. It is essential to find further partners, especially the private islands, so as to expand this intervention area to the remote islands where the pelagic species are found.

Stéphane Hergueta proposed a functional schema of organisation describing the SMMO as a transversal structure (see schema page 10) coordinating the observation efforts of the Observer Network and the Observatory itself, centralizing/analysing the data collected and providing expertise for the ministries concerned. The SMMO would be made of active partners and 2 full-time persons: 1 network animator and 1 internal expert.

After debate, the functional schema was approved by the workshop.

MCSS suggested to host and coordinate the SMMO database by relying on the expertise and experience acquired for the « Marine Turtles» base.

The SMRT-MPA agreed to host the structure for centralizing the data centralisation and developing the networks.

The technical and human skills, especially for data analysis and scientific expertise on Marine Mammals, were judged insufficient, even inexistent.

Stéphane Hergueta (SZP) offered to work as an internal expert (director of research) and train both the staff and partners of the SMMO.

It was suggested that the SMMO be set up as an association, with a Board of Directors made of a representative of each partner. The secretariat could be run by the SCMRT-MPA and the coordination by the SCMRT-MPA and the MCSS (if funding is obtained).

It was decided that the working organization of the SMMO will only be decided when the first funds are obtained.

The rest of the morning was dedicated to identifying new sources of funds for the creation of the SMMO. What was decided is to launch the project as soon as possible. A first funding will be solicited from with the Environment Trust Fund (ETF) to re-launch ROCS, to organize training to species identification at sea, and to launch the database and drew up d'un dossier GEF or World Bank.

20 January 2005 afternoon

The workshop drafted the conclusions of the meeting. It consists in a list of objectives on the international, regional and national levels, an official declaration for the creation of a Marine Mammal Observatory in the Seychelles, as well as an action plan.

While waiting for preliminary funds, it was decided that the Observatory would be a non formal organization, run by the declaration of the workshop's members for the creation of a Marine Mammal Observatory in the Seychelles.

The following members: MENR - ZSP – SCMRT/MPA – SFA – MCSS – SIF – ICS – Coast Guards – GVI, officially declared themselves "active partners" of the observatory.

Objectives and activities of the SMMO

The workshop set up the SMMO objectives. This first list will be further completed.

On the international level:

SMMO objectives are to provide:

- data on the species, populations, distribution and behaviour of Marine Mammals,
- samples for genetic analysis / samples of pollutants,
- data helping to monitor the conservation status of the species,
- elements to the bodies in charge of the lobbying as regards Marine Mammal conservation

The SMMO activities will be carried out in the context of an international coordination (IUCN Marine Mammal Specialist Group, etc.) and endeavour to get involved in the international programmes.

On the regional level:

SMMO objective is to contribute to a regional dynamics as regards the network of exchange of information and data in the area of the Western Indian Ocean (WIO).

The SMMO activities will first focus on finding regional funds and develop education programmes.

On the national level:

The main objective of the SMMO is to draw up the inventory of the species of Marine Mammals in the Seychelles and their time-space distribution.

It will endeavour to evaluate the possible threats on the local level and the potential for developing eco-tourism activities that they represent for the Seychelles.

To do so, the SMMO will identify the local skills for collecting and analysing the data and will develop relationships with fishermen.

It will organize training sessions (identification of species and monitoring methods) and help to set up awareness campaigns with the general public as regards Marine Mammals conservation.

Declaration of the workshop's members

Stating that Marine Mammals are an essential part of the Seychelles natural heritage ;

- *Recognizing that* Marine Mammals are indicators for the quality of the Seychelles marine ecosystems ;
- *Aware that* Marine Mammals constitute a real potential for the sustainable development of the Seychelles ecotourism;
- *Recognizing* the lack of data on the populations of Marine Mammals in the Indian Ocean Whale Sanctuary;
- *Aware that* conflicts exist between some Marine Mammals and the fishing activities in the Seychelles ;

The members of the workshop agreed to:

- Work together in a public / private sector partnership to assess the present status of populations of Marine Mammals in the Seychelles ;
- Share data through an equitable Memorandum of Understanding ;
- Raise the awareness of the public about the Marine Mammals of the Seychelles ;
- Increase data collection on the occurrence, abundance, behaviour and the possible threats to Marine Mammals ;
- Disseminate those information to the regional and international organisations involved ;
- Reinforce the conservation of Marine Mammals in the Seychelles territorial waters ;
- Developing guidelines for Marine Mammal interactions based on best practice and the precautionary principle ;
- Investigate methods to reduce the impact by cetacean predation on fishing activities ;

Action plan

Les actions of the workshop will be drafted (SZP-MENR) and gathered on a CD-ROM, as well as all the computer-aided presentations (PowerPoint). They will be further disseminated to all partners and other possible partners (to be identified, see below).

Both the SZP and the MENR will finalize the objectives and activities of the SMMO (international, regional and national levels) and display them to all partners.

The ZSP will identify the possible networks, programmes and specialist groups of Marine Mammals on the regional and international levels.

A « Memorandum of Understanding » for the SMMO, clarifying in particular the principles of ownership and exchange of data between partners, will be drafted (as it was done by the MCSS for the "Turtles" programme) and displayed by the ZSP to all partners for comments and modifications.

New SMMO partners, especially private partners (hotels, tour operators, etc.), should be identified and solicited. They will be delivered a copy of the MoU.

The MENR will submit its request for funds to the ETF in the name of the non formal structure of the SMMO.

If the ETF funding is obtained (1st year), the following actions will be set up:

- The SMMO will be made official ;
- The ZSP will conceive and implement programmes of training to identify and monitor Marine Mammals at sea. Those training sessions will be catered for the partners of the network carrying out field actions (presence at sea, animation of the Observer Network, etc.) as well as the sea professionals involved in the network (fishermen, skippers of charter companies, diving centres, etc.);
- The MCSS and the SZP will be in charge of adapting, printing and displaying the sighting form;
- The SCMRT and the MENR will be in charge of re-launch and run the Observer Network ;
- The MCSS and the SZP will be in charge of publishing newsletters on their websites (English-French) ;
- The MCSS and the SZP will write and submit their requests for funds to the GEF (medium size) and other sponsors.

If the ETF funding is not obtained (1st year), the following actions will be set up:

- A search of other sources of funds by all the members of the SMMO ;
- building up collaborations with the private sector ;
- punctual expertises (identification of priority sites and species, education) will be carried out by the SZP with the private sector or other sources de funding ;
- The present partners will get even more involved in the Observer Network (SCMRT-MENR).

Expert's recommendations following the first meeting of the workshop

Recommendations for the conservation of Marine Mammals in the Seychelles. Considering the results of the workshop, we recommend the creation of a Marine Mammal Observatory in order to:

- identify the space-time distribution of the different species of Marine Mammals through regular sighting campaigns
- study how the sites where Marine Mammals usually occur are used (parturition, breeding, food, rest, etc.)
- identify the possible threats to the survival of the different species of Marine Mammals
- evaluate the efficiency of the protected areas for Marine Mammal conservation on a regular basis
- training observers and/or intermediaries to techniques of identification and monitoring of Marine Mammals
- develop research work contributing to the conservation of Marine Mammals

Activities proposed for the MMO Seychelles

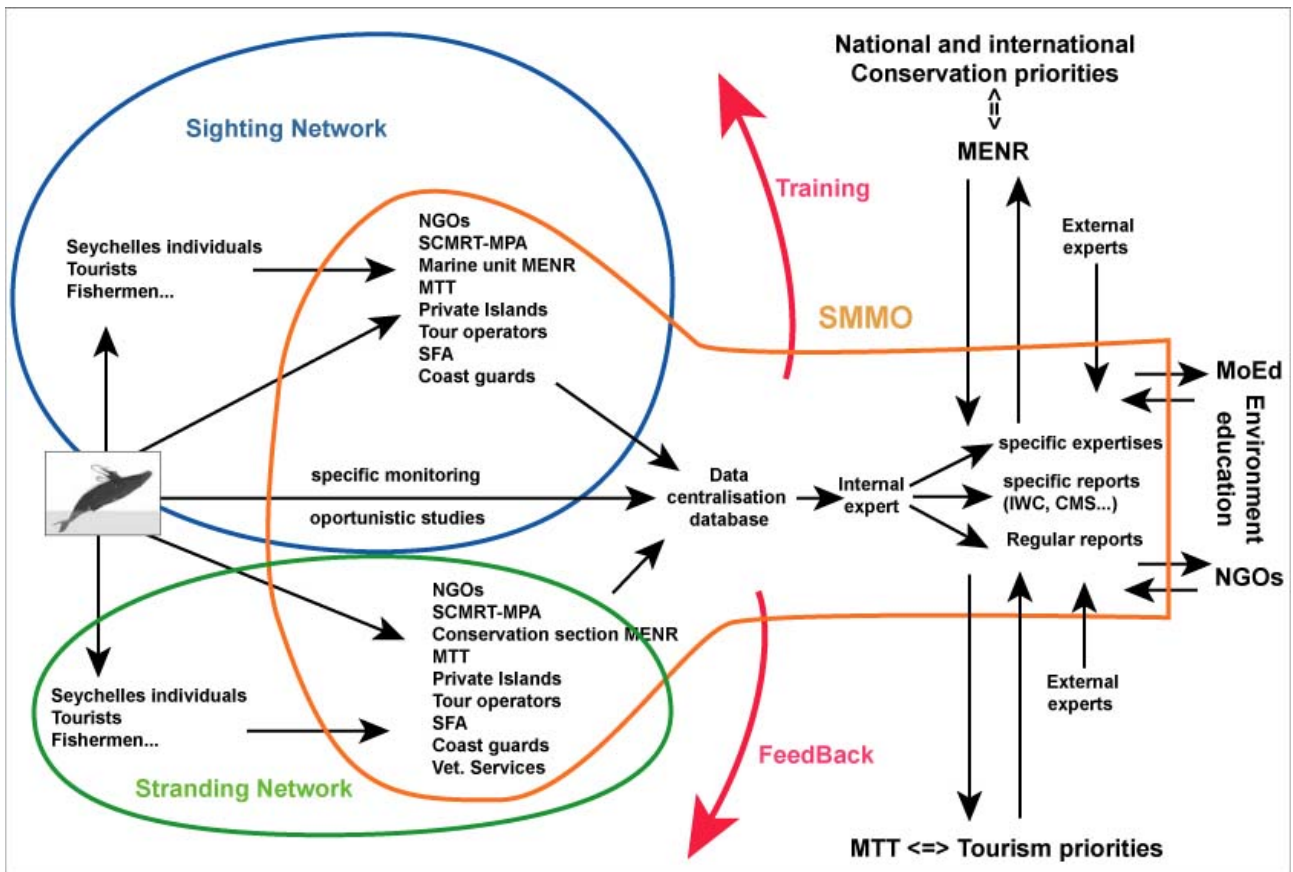
The activities of the MMO Seychelles should at least include:

- Regular monitoring campaigns at sea by boat or by plane (on a middle-term basis) in the granitic islands, plus seasonal campaigns in the remote islands, among which Aldabra:
- collecting pictures of individual identification of animals (catalogue of photo-identification) for a long-term monitoring of the composition of groups, estimating their demographic patterns and their occurrence in the site
- collecting pictures so as to develop libraries of behavioural repertoires for each species and monitoring the social organisation of the different groups (associations between individuals)
- collecting sound recordings so as to create libraries of vocalization repertoires for each species and communication surveys
- implementing and animating a network of stranding intervention with procedures for releasing living animals and disposing of carcasses of dead animals
- carrying out samples of skin (living animals) and tissues (dead animals) in order to establish a health monitoring of the different populations of Marine Mammals
- creating a bank of genetic samples (from the samples made) to help scientific research
- Running and developing the Observer Network already in place: collecting the data through the Volunteer Observer Network and regular interviews of sea professionals (species, numbers, time-space location, etc.)
- creating and managing a database gathering all the observation data collected
- analysing the observation data stemming from monitoring campaigns, the observer and stranding networks, and the statistics collected by the Seychelles Fishing Authority
- setting up an annual census of the status of the populations of Marine Mammals in the Seychelles for the Ministry of Environment and Natural Resources
- carrying out expertises on target programmes
- taking part in the scientific and technical education of the Seychelles students
- developing educational tools for the general public (information booklets, educational workshops, conferences, training, etc.)
- developing eco-volunteer programmes for sea monitoring

Suggestions for a functional organization of the MMO Seychelles

During the workshop, S. Hergueta suggested that the MMO Seychelles be a transversal structure:

- coordinating observation efforts through the Observer Network and the Observatory itself
- centralising/analysing the data collected
- of expertise for the different ministries involved



The principle of the MMO Seychelles functional schema was approved by the members of the workshop. The SCMRT offered to ensure the leadership.

This organization requires at least two full-time persons:

- a network animator who could run the networks on a permanent basis (distribution and collecting of data sheet, discussions with observers, displaying the information, training to species identification and the use of data sheet) and will computerise the data ;
- An internal expert (director of research) who will:
 - establish methods for the data collection;
 - plan, coordinate and implement actions of specific monitoring and research;
 - train the partners to the techniques and monitoring methods;
 - analyse the data collected;
 - display the results by means of conferences, reports, articles, etc.
 - act as a link with the regional network;
 - build up collaborations with the international scientific community.

Both the network animator and the director of research will take part in the environment education of the public.

Needs for setting up the Observatory

Training needs

During the workshop, training needs appeared as essential. In our opinion, they are of two different types:

- training to sea identification of the different species of cetaceans, for the active partners of the observatory acting as intermediaries for the Observer Network and who may take part in the specific monitoring campaigns.
- technical and scientific training for the monitoring of populations, for the observatory's partners who may take part in the specific monitoring campaigns as well as for the permanent staff of the observatory (network animator and director of research).

1- Cetacean identification at sea is a skill that is acquired on a long-term basis and relying on the interpretation of a whole made of dynamic elements relating to the specific behaviours of the different species. Thus, efficient training should rely on media accounting for those dynamic elements (video and animations), and include a session in natural conditions during sea trips.

To this day, no pictures that could be used for this type of training exist. It would be advisable to consider realizing those pictures so as to create a « training video kit » that could be further used on the regional level, during the phase of regional development of the project. If a budget is allotted, Stéphane Hergueta (SZP) offers to complete this kit in collaboration with the Mayotte Observatory.

For the moment, it would be advisable to set up as soon as possible a basic training session, using the photo equipment and the existing identification data sheet. This training session will focus on the main indices used for identification: anatomy, behaviour, ecology. The training session would allow distinguishing the main categories of cetaceans (whales, sperm whales, bottle-nose whales, dolphins,

cetaceans between 4 and 10m long) and identifying 3 to 4 common species (sperm whales, humpback whales, spinner dolphins, bottle-nose dolphins).

2- Training to techniques for monitoring populations will include a theoretical session and a practical session. The practical session will allow acquiring the ability to use the equipment and the scientific monitoring protocols in real conditions. In order to perpetuate the skills acquired during the training session, it is essential to keep applying them as soon as the training session is over. Therefore, the training to monitoring techniques should only start when the Observatory is set up.

Technical and scientific support

Short of local skills, the setting up of the MMO Seychelles will depend on external skills. This scientific and technical support should contribute to:

- train the Seychelles staff working with the MMO;
- provide an expertise in biology of Marine Mammals to help develop monitoring protocols, identify sites of regular monitoring and implement an action plan on a long-term basis for the MMO;
- provide an expertise to complete the funding application forms of the MMO.

Priority sites and species

Though there are very few available data, yet it is possible to set up a few priorities as regards the species and sites requiring regular monitoring programmes.

The sperm whale and the humpback whale, the migratory species whose IUCN status is « Vulnerable » and concerned by the International Whaling Commission and the Convention de Bern (CMS), are obvious priorities. Indeed, it is urgent to establish whether the two species reproduce in the Seychelles waters, whether they feed there, and whether they can stay more than a season (rhythm of migration – resident groups) and to which populations they belong.

Three species seem to include established groups around the different islands: **the bottle-nose dolphin** (Mahé, Praslin, La Digue, Desnoeufs), **Risso's dolphin** (D'Aros) and **the spinner dolphin** (D'Aros, Alphonse, Aldabra). Those sedentary groups offer a high potential for developing whale/dolphin-watching activities around the islands. They are also good biological indicators to evaluate the fluctuations of the status of the marine environment around the islands. Lastly, Risso's dolphin might be the only one resident group known for this species and would be as such an exceptional biological model for the scientific study of the species.

Since the **false killer whale** and the **pilot whale** are involved in the problems of depredation on long-line fishing, they constitute a priority with important economic consequences. Their study is part of a project of integrated research in the component « long-line fishing » in the « South Western Indian Ocean Fisheries Project » (SWIOFP), a programme of regional cooperation that is being elaborated to solicit funds from the World Bank. The SMMO should run and manage this survey.

For the remote islands, three sites seem to require a priority monitoring:

- Aldabra associating a high density of Marine Mammals (among which humpback whales and dugongs) with a status of protected area (World Heritage) whose efficiency for marine species outside the lagoons has not been evaluated.
- The submarine wall of the granitic plateau off Denys and Bird islands (known as "island of cows") presenting a high density of deep-sea Marine Mammal species (among which the sperm whale) on various seasons.
- The Amirantes (D'Aros, Desnoeufs, Desroches) and the surrounding submarine walls, where a great diversity of species occur all year long (among which sperm whales and a few resident groups of dolphins).

By crossing those priorities (species-sites), we obtain a coherent and relatively limited whole presenting a level of feasibility compatible with the type of organisation accepted for the SMMO. Apart from Aldabra whose access is still difficult due to its remote location, the monitoring of the sites is conceivable with collaborations with private partners (especially private islands). The monitoring programmes would allow to study the major part of the priority species.

The case of the species involved in les depredations is only conceivable with a collaboration with the longliners and will depend for the most part on the funding of the SWIOFP programme.

Appendix : List of participants

19 January only (1) and 20 January 2005 only (2)

Surname	First name	Organism	Email
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