

Identification of a regional programme in the area of sustainable management of coastal natural resources

Indian Ocean Commission

Executive Summary

1. The mission, carried out by a team of four experts¹ from the consultancy firm EOS.D2C, started on the 16th of April 2003, with the team's arrival in Mauritius. The period spent in the four island countries and the Reunion island in the Indian Ocean (as planned in the accepted technical proposal) ended on the 23rd of May 2003 with the experts' departure.

2. A debriefing was given at COI at the end of the stay. The aim of this debriefing, drafted while various interviews were still to be conducted and the bibliography still to be reviewed, was to present various preliminary hypotheses. The reactions received were taken into account when drafting the provisional report.

A. Progress of the mission

3. The mission progressed in accordance with the schedule given in Appendix 4 of the report, enabling interviews to be conducted with different partners (list in Appendix 5). Although most meetings and contacts ultimately took place under satisfactory conditions, difficulties were encountered because of (i) short periods of stay by the mission in each country, (ii) a lack of previous preparation of the mission in most countries.

B. Methodology

4. The methodological approach of the work conducted for the analysis of coastal issues focused on three areas: **ecological, economic, territorial**.

5. The various coastal and institutional actors in situ, considered as partners in the identification work, **were systematically consulted and involved** through semi-directed interviews based on a simple guide prepared at the start of the mission. The report integrated the opinions and suggestions received by the mission.

6. The different aspects were also integrated **systematically** at the end of the stay in each country, on the basis of the Pressure-State-Response model (OECD, 1993), which was used as a general conceptual framework. The team worked with the support of the basic format recommended within the framework of the integrated management methodology of the project cycle² (problem diagrams/targets/strategy).

¹ M. José Rakotomanjaka, fishing economist– M. Philippe de Verdilhac, expert on coastal fisheries, M. Raymond Labrousse, expert on land use planning, Dr Jean-Jacques Goussard, head of mission, ecologist.

² According to the methodology reviewed (March 2001)

C. Mission guidelines

7. The mission guidelines were based mainly on the following points:

- The terms of reference and the starting memorandum drafted at the start of the mission³, and observations received about this memorandum from the different partners in the programme
- The multilateral environmental conventions in which the states involved are represented and appended provisions adopted by the Conferences of the Parties
- The letters of sectoral policies of states, as well as issues and policy papers of the IOC. The national environmental action plans of the states involved (Environmental Management Plan for the Seychelles, Environmental Action Plan for Mauritius, Charte de l'Environnement for Madagascar, Plan National d'Action pour l'Environnement for the Comoros)
- The Cotonou Agreement and its appended parts
- The letters of cooperation policy of the European Union with regard to the environment.
- The final evaluation report of the PRE⁴-COI
- Various other basic documents, which are mentioned in Appendix 6 of the report.

D. Main facts

8. The island countries of the Indian Ocean display **diverse profiles of potentialities and constraints**, which are organised according to geological, morphological, human, social, and historical characteristics. This diversity of situations explains the existence of **contrasting** strategies for organising and sharing space and resources. The main factors determining these potentials or constraints are (i) geological origin (ii) extension of the continental shelf, (ii) extension and maturity of coastal coral formations and associated ecosystems, on which the coastal halieutic and tourist potential depends. Added to these are the **different economic development strategies** implemented in these environments.

9. The limited surface area of most of the countries involved makes it necessary to take jointly into account coastal/littoral development and in-depth land use patterns, which are closely connected. In the case of Madagascar, (i) these two areas are also linked, and (ii) the isolation of a large proportion of coastal areas has brought about a situation where « in archipelago » distribution of coastal poles of development is not unlike the situation of small islands.

10. Agricultures in the region are mostly **multifunctional**. In many cases, the **vulgarisation** of coastal rural areas and the hinterland is accelerated by the rapid development of introduced opportunistic species (often invasive) which, despite their importance as alternatives for native ligneous species (energy, timber and utility wood), contribute to the simplification of terrestrial natural systems. Therefore, the latter no longer performs the same services in terms of recreation and ecotourism, protection of soils, or maintenance of island genetic diversities. On the small islands, coastal landscapes are also heavily altered by intensive building and dispersal of infrastructures, **creating** inadequate land tenure control.

11. **Fisheries** in the countries in the region is dominated by industrial tuna fishing, almost entirely leased to foreign shipowners, and poorly integrated into the national economies. Semi-industrial long-line fishing, emerging only recently, is mainly in Réunion.

³ This starting memorandum had been drafted at the headquarters of the IOC on the 4th day of the mission, and followed up the interviews done at the headquarters of the General Secretariat of the IOC, giving a summary of their main points.

⁴ Regional Environmental Programme of the Indian Ocean Commission

12. The configuration of the coastal area enables two quite distinct facies to be distinguished: (i) the volcanic facies in the Comoros, Réunion and Mauritius, characterised by the narrowness of the continental shelf; (ii) the non-volcanic facies, granite in the Seychelles, various in Madagascar, where the continental shelf is more or less developed. The nearby resources are mainly demersal, and relatively limited if the continental shelf is restricted, and generally associated with the coral facies. The distant resources are more abundant, made up of large pelagics dominated by tuna and swordfish.

13. The development process of coastal fisheries and promotion of the small fisherman in the region follows a two- and sometimes three-stage process:

- **Traditional fishing:** The basis of the fishing unit is the dugout canoe, which offers a narrow radius of activity – creating local overfishing and low yields barely capable of covering the needs of private consumption. The traditional fisherman plays little part in economic trade, and cannot therefore release the necessary surplus to invest in a more efficient work tool.
- **Modernised traditional fishing:** boats between 5 and 8 meters long, equipped with outboard motors, enabling a wider radius of activity. In the volcanic islands, the indispensable tool to accompany this fishing unit is the fish aggregation device (DCP). It requires a growth market that can ensure a return on investment.
- **Semi-industrial fishing:** industrial fishing is defined by ownership of the work tool by companies, and formalised management. Only in exceptional cases does small-scale fishing become semi-industrial.

14. In Madagascar, this process is barely underway, because of the **isolation** of most of the coastal areas. In Mauritius, despite the implementation of apparently necessary means, it is only just underway, and fishermen working far beyond the lagoon and the external slope are still a minority. In the Comoros, despite difficult economic conditions, at least one third of boats, or 1,500 units, are able to go into open sea. In the Seychelles, the process is practically complete: only 8 % of small-scale fishing boats are not motorised. Semi-industrial fishing has been able to develop there by exploiting the resources of a continental shelf that is exceptionally large for a small archipelago. In Réunion, the process is finished. Help from the state through implementation of DCPs, and the granting of large subsidies and tax refunds have been a determining factor in this.

15. Management and allocation of resources:

Unfair competition: in the islands that are both densely populated and relatively developed (Réunion, Mauritius), we are seeing unfair competition (catch and sale) against professional fishermen by unregistered or recreational fishermen. The large number of these fishermen makes any preventive action or tightening of the regulations politically delicate. This makes it very difficult to implement reliable statistics on catches, and major risks of over-exploitation.

Competition and complementarity of industrial fishing: fishing by bottom trawl is almost impossible around the volcanic islands through lack of their own sufficiently extensive seabeds. On the other hand, Madagascar and the Seychelles offer large trawlable expanses. The Seychelles authorities have forbidden any trawling in depths within their exclusive economic zone, thereby preserving the seabeds and fish populations. In Madagascar, on the other hand, shrimp populations are exploited both by industrial trawler fishing and small-scale fishing, creating a competitive and potentially confrontational situation.

16. Fragile and exposed special resources: Madagascar's coastal shrimps are one of its major industries, and the subject of much attention. There are other export industries focusing on smaller

and localised resources. Here, we often observe anarchic exploitation, heavily stimulated by exporters, and whose sustainability is far from certain. For example:

Lobsters: we are witnessing a reduction in catches at the same time as a reduction in size. In the Comoros where there are large stocks, exploitation could get out of control if conditions were right to establish an export industry.

Holothurians: in Northwest Madagascar, the population was decimated when divers equipped themselves with diving equipment. In the Comoros, exploitation has continued unbridled; but for how much longer?

Sharks, present in greater or less abundance in all countries in the Region, are generally exploited only for their fins. Populations are slowly being renewed.

17. Valorisation of coastal fishing products: better valorisation of fishing products enables profits to be made where catches are no longer as abundant. There is progress to be made in this sphere, to a greater or lesser extent in each of the five countries.

18. Research into and monitoring of coastal fisheries: depending on the country, the scientific organisations responsible for coastal fisheries are developed and specialised to a greater or lesser extent. In general, this structure is also responsible for aquaculture and marine environments. Efforts are focused mainly on species that constitute economically important resources: tunas, swordfish and coastal shrimps. Small pelagics, which are underrepresented in catches, are neglected everywhere. As for demersal fish, their extreme diversity in coral environments means that individually they are not taken very much into account. Available statistics are insufficient to provide monitoring and regulation of fishing pressure in most of the countries, especially concerning coastal demersals.

19. Aquaculture: nowhere in the region do we see small-scale marine aquaculture enterprises arising from tradition as is the case throughout Southeast Asia. Three types of situations can be observed in the region:

Industrial shrimp farming: this exists in Madagascar and the Seychelles. Operators like governments seem well aware of the failure of shrimp farming in various countries in Southeast Asia due to inadequate evaluation of environmental problems. As a result, they are being very cautious.

Fish breeding in cages: these are initiatives by authorities via research bodies. The costs of research and development are high and only relatively rich countries like France (Réunion) and Mauritius have invested in this approach. The economic viability of such initiatives remains to be determined.

Algoculture: the regional model is that of Zanzibar where this activity is large and perennial. The first of the countries studied to have tried to reproduce the Tanzanian experience is Madagascar; despite establishing technical feasibility, the experiment came to a sudden end because of the very nature of the receiving public.

20. Tourism: for tourism, seaside in particular, the maturity and extension of coral reef formations plays a fundamental role in the potential, whose development is also dependent on air services. Here too, the situation in the different countries in the Indian Ocean is mixed. As far as the island states are concerned, and considering the tourist space dynamic model⁵, we see that parts of the Comoros and Madagascar are in a so-called emerging tourism phase; some places in these groupings reach phase I (pioneer resorts resulting from the opening up or the special attraction of sites). Concerning the Seychelles, Réunion and Mauritius we see type III situations (stage of organisation of large flows to

⁵ Miossec. J.M. 1974. - *Eléments pour une théorie de l'espace touristique*. [Elements for a theory of the tourist space] Paper given to the Paul Claval fundamental geography seminar. 76p.

various settlements), which may locally tend towards stage IV (saturation and full urbanisation of the tourist area).

21. **Main infrastructures** (communication, harbour, airport, urbanisation, and other infrastructures). These facilities are linked to the spatial distribution of urbanised areas, and serve economic activities in which the secondary and tertiary sectors can, in some cases, represent an increasing share. The intensive building of houses in the coastal areas is widespread due to the lack of adequate land control.

22. These different interventions in space and resources still obey **sectoral logics**. They generate even greater pressures on natural systems such that the development of economic activities results in establishment of settlements, which **tend to multiply, as long as these activities are profitable**. Making these sets of heavy constraints coherent and compatible is difficult in areas where the ecosystems are interconnected, closely interdependent, and where the surface area is restricted, and in any case limited.

23. In this context, the coastal issues are: (i) **difficulties in allocating a restricted space** between different methods of appropriation and organisation falling within different sectors, logics, and functions; (ii) **difficulties in allocating marine and coastal resources** between different methods and types of exploitation, for which **maximisation of added value must be the main strategic orientation. It is a question of optimising viability in a context where pressures are exerted on fragile natural systems with low resiliency**. Regulating allocation of and access to resources is often done finally through **intersectoral user conflicts**.

24. These issues are made even more acute if one considers (i) that coastal marine environments are both producing systems and supports for economic activity, **but are also receiving all the effluents generated by the activities of the land sphere «in depth»**; (ii) that these environments (particularly coral reefs) are directly subject to the effects of global change, especially warming, the effect of which can be great loss of vitality of coral colonies, worsened by mechanical and physico-chemical effects (lowering of the salinity level, increase in the turbidity of the water) linked with the dynamism of climatic events (especially cyclones).

25. **Global economic issues:** whatever the efforts of countries to adopt sustainable development, these efforts will not be enough, and could even be threatened by the expansion of the international trade framework. This situation causes even greater risks, since protection of the world's biodiversity, concentrated in tropical countries like those in the Indian Ocean, remains the responsibility of states.⁶

26. On an economic level, the implementation of the WTO rules, to which the special agreements, such as the Cotonou Agreement, must in any case take into account, could seriously threaten the economies of countries who have relied on cash crops agriculture or emerging industrial sectors, or generally on all the islands' multifunctional agricultures. Applying the TRIPS⁷ will also make the transfer of technologies to renewable energies or waste treatment more difficult, whereas such technologies (autonomous sewage treatment for example) are vital for the small islands.

27. Global warming directly threatens natural resources vital to the ecosystems and economies of island nations (destruction of reef ecosystems, modification of behaviour and renewal of halieutic resources, etc...). Furthermore, the compensations provided for by the Kyoto Protocol (instruments of flexibility of implementation of the Convention on Climate Change) are hard to access, and are minimal for islands with a small surface area.

⁶ Sovereignty of states in conservation – Art.3 Principle and Art. 8 – In-situ conservation of the Convention on Biological Diversity.

⁷ Trade-related aspects of intellectual property rights.

E. Social response and demands from states and partners

28. All the different islands visited implement social response strategies⁸ aiming to reduce pressures on the ecosystems, or even to restore them. The different methods for this social response include:

- Ratification of MEAs⁹, the internalisation which encounters numerous difficulties in national contexts
- Drafting and implementing national environmental action plans
- Adopting suitable legislative instruments (standard law frameworks)
- Implementation of conservation and/or sustainable management projects and programmes
- Development of capabilities of civil society regarding local management of natural resources
- Emergence from civil society of independent and structured conservationist initiatives,
- Synergy between these non-governmental entities with technical services with the aim of transferring intervention capabilities to the local level
- Widening of the mandate of local governments in a decentralisation approach, which is still to be pursued and consolidated.

29. These different elements of social response must **however be built around identifying appropriate technical solutions and propositions**, which can ensue either from national and/or local or individual experiences, or **from access to pools of experience from other coastal regions facing the same problems**. In this sense, there is a widespread demand to connect manager players (i) with each other on a regional scale; (ii) through access to sources of information and **skills outside the region**. This need is felt globally in the search for suitable technical solutions, and also thematically (exchanges of experience in conservation concerning problems of setting up and managing marine parks, exchanges of experience and data between researchers for example). It is above all a matter of avoiding isolation in national contexts **and of federating all regional resources in aid of the social response**.

30. We see in effect that regional and multilateral initiatives **tend to multiply**. This results in **increasing needs to coordinate and monitor** in order to maintain a certain coherence and organised mutual reinforcement of actions.

F. Quality factors of a future intervention

31. Support for a coordinated strategy for the sustainable management of coastal areas on a regional level must first integrate the different priorities, which emerge from an analysis of the regional situation, and from the provisions of the 9th EDF regional strategy:

- **The fight against poverty, which is carried out through sustainable management of natural resources and coastal ecosystems:** in this sense a future programme must support and give preference to (i) an increase in the added value of coastal resources combined with (ii) improved control of monitoring and management of such resources.
- **Respect for international commitments of contracted states within the framework of the MEAs.**
- **Support for states conducting negotiations on international commerce, to take environmental aspects into account.**
- **Coral reef ecosystems are the focus of everybody's attention**, particularly on the MEA level. It would be logical for the future programme to consider as a priority the sustainable management of associated reef and coastal environments (mangrove swamps, macrophyte meadows), diversified ecosystems that support many economic activities.

⁸ The OECD's Pressure-State-Response model (1993)

⁹ Multilateral Environmental Agreements

- **Taking account of the heterogeneity of the regional situation:** Although we observe the existence of coastal problems common to states in the western Indian Ocean, we also observe that (i) intervention capabilities, particularly political, (ii) the priority given to these different levels in governments' agendas, and (iii) the nature of these priorities, are highly variable, as witnessed by the diversity and heterogeneity of demands gathered by the mission, many of which do not in principle come under regional subsidiarity.
- **The results of the PRE-COI:** the PRE-COI has therefore enabled the introduction of the concept of the integrated management of coastal zones in a relatively effective way. The fact remains that this strategy is a long-term approach, which assumes preconditions : for example, regarding local and national governance, structuring and representation of coastal actors, or the control of stakes and technical solutions. The latter seem difficult to unite within the initial operation deadlines for this programme.

32. **Direct involvement of states in the implementation:** although in effect the Cotonou Agreement emphasises the participation of Civil Society in implementing the Agreement, the role of states should not be underestimated, particularly concerning environmental issues, where the state **remains the main long-term guarantor. The programme should fit into other existing and/or planned interventions** in terms (i) of synergy; and (ii) of complementarity, especially with the different regional authorities already operating with regard to the sustainable management of coastal areas. This means that the **programme should avoid, where possible, creating new structures that may lead to future costs** at the end of its period of implementation.

33. **A widening of the circle of stakeholders and beneficiaries of regional cooperation to the private, non-governmental sector, civil society, and local politicians**

34. **Encouraging articulation and complementarity between island contexts and those of coastal continental states:** generally speaking, it is not therefore a matter of tackling the issue of the geographical field of intervention of the future programme in a dogmatic, arbitrary or administrative way, but rather **in accordance with (i) the appropriateness of the operation and the means available; (ii) and optimisation of the effects of the programme by identifying the relevant geographical scales of cooperation for each component of the action.** If all coastal states in the southwest Indian Ocean are in effect both actors in and beneficiaries of the programme, we can envision a more intense intervention in the case of island countries, taking into account their specificity and the stakes, especially in implementing pilot actions with demonstrative value. The act of encouraging networks should enable all the coastal countries of the southwest Indian Ocean to be included in the field of intervention, with the aim of consolidating already existing regional authorities. **The timely extension of this group to Mozambique would be achieved through mechanisms of coordination with the southern Africa Group established for the 9th EDF (Inter Régional Coordination Committee).**

35. **Expressing the principle of regional subsidiarity:** the understanding of the notions of regionality and subsidiarity has been a major stumbling block during the implementation of the PRE-COI. On numerous occasions, as mentioned above, the mission was able to note that for different partners these two terms could cover very different notions and realities. In any case, a regional programme intervenes in support, and not in substitution, of national initiatives. It can, and should, also play a precursory role in introducing new methods, approaches, or concepts.

36. The mission was able to bring to the forefront the fact that in a number of spheres linked to management of coastal areas, the regional added value does not necessarily fall within common denominators, **but also within the great socio-cultural, historical, geographical and economic diversity** of the countries and peoples of the Indian Ocean.

37. **The Nairobi Convention** offers an existing framework adapted to the development of regional technical and functional cooperation broadened to coastal continental countries. **Nevertheless, the methods for implementing such cooperation deserve to be better defined, especially concerning definition of functions falling within the regional level.** The existence of a reference document, such as a “charte”, on a regional scale, regularly updated, setting out the operational «rules of the game» and those for **coordinating** regional cooperation in the field of sustainable management of coastal areas, would be useful. This assumes on the part of states **an effort to define and make decisions as to the domains that should, or are able to, fall within subsidiarity.** This also assumes that **the practical methods of this cooperation in precise domains** are properly defined.

38. **Mobilisation of regional actors based on rooting in the local economic contexts:** The main concerns of most of the coastal actors are today undeniably of an economic nature, and are to be connected with the countries’ development needs, and alleviation of poverty, which still affects large proportions of coastal populations in some countries in the Indian Ocean.

39. **Reasoning in terms of services, products, tools and instruments:** the viability and sustainability of actions conducted by the future programme, like its future efficiency, will closely depend (i) on the ability of the programme to ensure wide and effective dissemination of the products of actions; (ii) on the ability of coastal actors to replicate technical solutions. Very special attention must therefore be paid to the finished, and easily transferable, character of products that are elaborated, disseminated, and adapted.

40. **A new concept of management of networks:** in the different cases mentioned above, the networking of a number of regional partners must first of all be seen as a **means** of achieving the objective, which is materialised as it happens by the product(s) expected (especially methodological and practical). In this sense, these networks are managed **from and for demand**, and not by supply, as is still often the case. Networking will also be used (network of marine parks) as a **tool for strengthening capabilities and professionalising the actors concerned.**

41. **A strategy for strengthening capabilities also directed towards demand:** it is essential to focus training efforts according to practical fields of application. This link is created through **strong interaction** - provided for in the programme – between activities for strengthening capacities and the practical implementation of activities for managing and developing coastal areas.

G. Programme concept

42. The future programme should be viewed as a **framework programme** based on three principles:

- **Complementarity** of the resources, methods and skills of the countries concerned for the definition and implementation of regional guidelines for the sustainable management of the coastal areas.
- **Convergence** of the technical approaches, in particular methods for monitoring resources and ecosystems.
- The application of **subsidiarity** (regional added value at the different levels on which the project operates and in the methods used for its implementation - economies of scale, performance arising from the sharing of resources and skills, and durability).

43. Accordingly, it is essential that the concept of the future regional programme be based upon **mechanisms, instruments and processes** (which can preferably be perpetuated), rather than on set options (such as pre-defined pilots), which run the risk of very quickly becoming obsolete or inappropriate.

44. The strong complementarity of the programme's activities and the mutual support they provide to one another should make the cohesion and management of the operation easier. With regard to purely technical activities, the programme will focus primarily on the coral ecosystems and their associated systems (mangrove swamps, sea grass beds, interfaces with the internal waters), environments that are threatened, which are the object of attention of the international community, and whose conservation is a factor conditioning most of the renewal of coastal resources in the Indian Ocean countries.

H. Goals of the programme

45. The following description of the future programme represents a platform of suggestions for discussion during the seminar to be held in Mauritius in September 2003.

- Overall objective: **To ensure the sustainable management of the natural resources in the region**¹⁰
- Project purpose: **To increase the ability of the states in the Southwest Indian Ocean to take initiatives in the field of the sustainable management of the coastal areas.**

46. These goals must be achieved via eight results defined as follows:

- Result #1: **The monitoring and early warning capability of the state of natural resources – in particular the halieutic resources – and coastal ecosystems are improved.**
- Result #2: **A process of regional coordination and integration of conservation efforts of coastal marine ecosystems is implemented.**
- Result #3: **Appropriate technologies and best practices in the field of sustainable management of coastal areas are identified, accessible and replicated.**
- Result #4: **The ability of states to develop a proactive attitude in international negotiations on Multilateral Environmental Agreements, and the inclusion of environmental issues in global trade negotiations is improved.**
- Result #5: **Private sector economic agents operating in coastal areas are informed and prepared to meet the deadlines for the reinforcement of norms and standards for environmental certification.**
- Result #6: **Community-based organisations are made aware of the stakes and the progress made in the sustainable management of coastal resources and ecosystems, and increase their active contribution to this management.**
- Result #7: **Conditions are created for the viability of the results of the programme.**
- Result #8: **The regional programme is managed, monitored and coordinated and the information obtained is capitalised upon.**

I. Operational structure for the programme

47. Overall, the programme is structured around four closely related and interdependent components:

48. **The Network component, which comprises:**

1. A physical network of pilot sites, directly linked with the network of protected marine areas

¹⁰ On the principle of a cascading logical framework, we have taken the text of the specific objective for natural resource management of the regional strategy, 9th EDF, as the overall objective in this logical framework

2. A group of four federated technical networks, each of them autonomous and communicating outside the region. These networks will be run by a regional programme framework operator (already a permanent institution). They include:
- a) **Surveillance and management of resources, in particular halieutic and reef environments (development of methodological tools, tests and user training).**
 - b) **Protected marine areas** (each of which is a pilot site).
 - c) **Monitoring and dissemination of appropriate technological solutions and best practices** in the sustainable management of coastal areas.
 - d) **Supporting decision-makers** (i) in the area of monitoring and adoption of Multilateral Environmental Agreements, (ii) to take account of the environmental aspects of world trade negotiations, and (iii) in the dissemination of methods and initiatives for environmental regulation and certification to private sector participants.

These different networks will also represent **resource centres** for the preparation of national strategies for coastal resources – the Seychelles fisheries strategy, for example (to be financed under the NIP of the 9th EDF).

49. **The Communication Component:** The communication domain serves to disseminate information from the programme's various networks to various specialist and non-specialist audiences, in particular with regard to public opinion in the coastal states, through access to mass media (daily papers, magazines, television, radio, etc.), and perhaps also to schools (contribution to the preparation of teaching aids for the ARPEGE Programme).

50. **The Training Component:** The training domain is aimed to develop and organise the range of training aids, which will be required at the programme's different levels of activity. This training and, in general, actions to enhance capabilities, should be **complementary** to other actions undertaken by the programme (in particular projects financed under the Action domain). The Training component will be implemented by a **regional programme framework operator** for capacity reinforcement, appointed by the regional coordination unit. Although this role will not be exclusive, where necessary, other operators may intervene.

51. **The Action Component:** This is planned to work on the basis of a budget line which can be **drawn down** by means of annual calls for proposals launched on a regional level, using transparent and pre-defined procedures.

52. **The various actions determining the viability of the programme results on a political and financial level are under the responsibility of the Programme's regional coordinating unit.**

J. Description of the operational components

53. **The network of pilot sites:** the network of pilot sites is a **physical** network, which should comprise (i) all the protected marine areas of the island states in the Indian Ocean; (ii) a sample of protected areas from the coastal continental states. **These sites will not be restricted to the limits of the protected area** and its immediate vicinity, but will extend to its area of influence, to be defined in each case.

54. **The network of protected marine areas:** the network of protected marine areas will **bring together** all the managers of pilot sites and is intended, over time, to incorporate all the managers of protected marine and coastal areas in the West Indian Ocean. In this domain it should be noted that the island states of the IOC already have a wide range of experience. This network will primarily permit the sharing of experience between these different approaches, but will also allow the role and status of the marine parks to be defined (on a local, national and regional level) in the context of the

Indian Ocean. On the basis of these exchanges, the network will undertake a process of reflection, to be developed using a range of **tried and tested management tools**.

55. The network of protected marine areas will be **connected** (i) to the international networks of protected areas already in existence; (ii) to the technology monitoring network established by the programme from where information on best practices tested in other contexts can be obtained; (iii) to the network for the monitoring and management of reef resources, which will operate within the areas of influence of the marine parks in testing methodological protocols. These specific tasks of applied research should lead to important information and recommendations on the relevance of zoning and the impacts of fishery economic activities.

56. These networks of marine protected areas will be required to support the coastal participants in formulating projects and applying for finance under the «**sustainable management of coastal areas**» budget line within the Action Component. It will also produce a **structuring of demand for the training of the coastal actors**, through a global identification of needs for skills enhancement¹¹. The corresponding modules will be developed in the Training component.

57. **The network for monitoring and management of natural resources:** in numerous fields, up-to-date and usable information is lacking, in particular in regard to coastal and non-industrial fishing and monitoring of reefs on a national scale. These different aspects create significant methodological problems, which have not been solved at a realistic and acceptable cost, in order to allow a sufficiently systematic monitoring to be undertaken. In regard to coastal fishing, the development of simplified methods for monitoring levels of activity, possibly with the help of the fishermen themselves for the collection of data, could allow situations of overfishing to be detected early, in order to have a better control over the pressures on fishing resources.

58. The overall philosophy would be based on an improved representation of the geographical network of sites, and a moderate increase in the frequency of data collection. With this approach, the **redundancy obtained by multiplying the data collected of descriptors or simple indicators on physical systems for permanent sampling**¹² could compensate in part for the lower definition of the sampling protocols.

59. These different methodological outputs must be developed through the involvement of **national and international skills**, in order to produce tested, realistic, reliable and viable protocols, using volunteer participants as much as possible.

60. These **integrated methodologies** should be able, for any given site and as part of a monitoring process, to provide information indicating the development of the ecosystems and resources, reflecting the health and vitality of the reef formations (lagoons, reef flats, external slope and associated environments – sea-grass beds and mangrove swamps), as well as trends in the **level of exploitation of coastal fisheries** with regards to both the commercial demersal species and to specific fishing targets (shellfish, cephalopods, holothurians, etc.). **Simple interpretation keys and methods for the communication of results to local and national decision-makers** in terms of trends will be defined. The identification of the target audience for this information, both governmental and non-governmental, must be made **prior to** the work of developing the methodology (the terms of reference for which will be specified partly on the basis of structured and identified demand). This preliminary phase, which will include an inventory and assessment of the existing systems¹³, will also make it possible to identify the **procedures** and channels for regular reporting of results back to the

¹¹ This work can be undertaken in conjunction with the national skills audits currently being carried out by the UNDP in certain regions, as part of Agenda 21.

¹² Provided various problems are solved, such as the permanent marking of transects

¹³ In collaboration with the Agulha and Somali GEF project

beneficiaries (professional corporations and fishermen's unions, technical services, local governments, local NGOs, syndicates of tourism operators, etc.).

61. The fieldwork undertaken as part of the methodology testing will be conducted on **pilot sites**.

62. Links will need to be established when developing this methodology with the **traditional knowledge and skills of coastal populations** (traditional classifications of fauna and habitats, traditional systems and methods of assessing the quality of the natural systems, historical knowledge, etc.) and their possible involvement in data collection.

63. With regard to the activities of the existing reef network, and as part of GCRMN monitoring, finance is provided by the World Bank until the end of the programme (end of 2004), which could be extended by one or two years at a lower level out of the remaining balance¹⁴. Incorporation of the eco-environment component (plankton monitoring) and water quality measurements within the reef network activity, as additional indicators of the quality of the coral environment, would be desirable.

64. The network must be structured on the basis of national working teams. A phase in which a critical inventory is drawn up of the tools already provided must precede the work of developing the methodology. The creation of a scientific committee and a system of **grants for regional postgraduate students** would enable the applied research effort to be stepped up across the entire project in the pilot sites.

65. **The network for the monitoring and dissemination of appropriate technological solutions and best practices in the sustainable management of coastal areas:** different initiatives for monitoring technology have already been developed, in particular by SEACAM in the field of integrated management of coastal areas, by UNESCO-CSI, by the SIDSnet network, by UNEP (project management by IOC – Small Developing Island States / Indian Ocean, Mediterranean and Atlantic) on waste management, etc. The results of these initiatives remain relatively dispersed and ultimately difficult to access.

66. Monitoring of appropriate technology: the identification and transfer of the **appropriate technology and best practices**, in the field of sustainable development and management of coastal resources. This work will be carried out in various areas of application: aquaculture, sewerage, energy, soil conservation and improvement, water management, etc.

67. The network for technology monitoring will also **ensure close cooperation with projects financed by National Indicative Programmes**, in particular concerning technical sectors which are looking for, or using appropriate technological solutions (the Seychelles solid waste project – 85% 9th EDF NIP, Comoros Islands – 8th EDF NIP or Mauritius – 85% 9th EDF NIP, improvement of wastewater management).

68. Monitoring of best practice. Monitoring will be focused on the organisational and contractual instruments already identified and deployed in other situations – «charters», establishment of contracts with coastal actors, public/private eco-effectiveness contracts with agreed upon objectives, and procedures for **financing structures involving the state/private sector/community-based organisations**, in particular in the field of **sustainable tourism**¹⁵.

69. The monitoring network will establish a third section consisting of an inventory of regional skills and initiatives: the creation of a **skills chart** (a data metabase), and national initiatives (particularly projects), which can be consulted via the Internet.

¹⁴ A recommendation of the mid-term review

¹⁵ The enhancement of land reserves for tourism in Madagascar could fall into this category (see Appendix 3, geographical profile of Madagascar)

70. **The support network for decision-makers and the private sector:** there will be two distinct aspects: (i) the support network for decision-makers in charge of monitoring MEAs and negotiations on International Trade; (ii) support for the dissemination of knowledge on systems for certifying eco-effectiveness, whose target market consists not only of the private sector, but also of certain technical services and NGOs. These different aspects have been deliberately grouped within the same network in order to ensure that there is a **consistent and integrated approach of the different aspects of the strengthening of international legislation.**

71. **In the former case,** this network is aimed at providing **up-to-date and relevant support to decision-makers, negotiators and national operators, in order to develop a proactive attitude on the part of states** with regard to international decisions concerning:

- The development of Multilateral Environmental Agreements (MEAs) and their internalisation in a national context;
- The environmental constraints and impact of measures decided as part of international commercial negotiations.

72. For these two points, support is focused on interpretation and translation of the issues using simple and clear tools in widespread use of measures related to these various contexts. Training seminars using these regularly updated documents will be organised with the aim of enhancing national capabilities (i) to internalise on a national level the measures contained in the COPs,¹⁶ in the case of MEAs; (ii) to strengthen negotiating skills and the ability to predict environmental issues raised in the WTO. These various tasks will be organised in a complementary manner and combined with the efforts being made to reinforce skills in this area and which have already been planned in other contexts (COMESA, Commonwealth, etc.) on this topic.

73. **With regard to activities concerning the enhancement of eco-effectiveness,** the network will provide information using online tools and communications to professional organisations, as well as through the establishment of a **regional eco-label «charte»¹⁷** covering economic activity in the coastal area. This «charte» must offer a **non-binding contractual framework for the recognition of environmental management** by companies in the partner states of the programme, based on voluntary adherence. The three areas most affected will be: conservation, tourism and fisheries. Overall, the programme will aim to **enhance the ability of the Standards Offices and Bureau in the countries of the region which will develop norms,** in partnership with professional groups, and establish a collective movement for the creation of regional standards in certain areas.

74. **The Training for Action Component:** the training domain will act principally in close collaboration and complementarity with the other components of the programme, in support of:

- **The programme networks** for the purpose of disseminating the results and technical contents;
- **The projects and actions financed from the budget line for actions for sustainable management of the coastal areas,** and including a training section (training of eco-guides, training of selected local representatives and technical services in the decentralised management of natural resources, etc.);
- **The other projects financed from NIP funds in the various countries.**

¹⁶ Conferences of the Parties

¹⁷ Appendix to a future regional « charte » for the sustainable management of coastal areas

75. The training component may also be able to establish a contractual partnership with the EDC¹⁸, for training for the private sector **within the context of the specific skills of the Cotonou Agreement Institution.**

76. **The budget allocation for financing initiatives for sustainable management of coastal areas:** this line will enable actions to be financed, which will be identified through regional calls for proposals. Assessment and evaluation of these calls for proposals (or projects) in the 1st, 2nd and 3rd years of the programme will be carried out by one or more ad hoc joint commissions, **on the basis of assessment matrices consisting of various criteria.** In each case, these evaluation grids will be included in the procedures manual for the management of the budget line, to be implemented as soon as the programme commences, and must be transparent for all the partners. This budget line also represents a balancing item for the programme in light of (i) probable but not certain future commitments (continuation of the ARPEGE programme for instance); (ii) other requirements such as the year +3 rule.

77. The budget line may be subdivided into several items:

- **A fund for the study and appraisal of projects to be submitted for financing out of NIP funds;**
- **A principal item: Actions for Sustainable Management of Coastal Areas.** A definition of the profile of these actions should be made principally at the time of their appraisal. However, these actions should give priority to **the links and synergy between the conservation and sustainable exploitation of coastal resources, the contribution of regional added value, the integrated management of coastal areas by controlled transfers of management prerogatives** over natural resources to decentralised authorities under the control of the technical services, and **the transfer of appropriate technology or the replication / dissemination** of best practice (identified by the monitoring initiative).

78. The financing of these projects through these budget allocations will probably make it possible to increase the **visibility of regional action** through the publicity surrounding the call for proposals, while at the same time **enlarging the circle of partners and potential beneficiaries** of the future programme.

79. **Activity of the communication component:** the communication component is principally intended: (i) to ensure awareness of the programme and of its **proximity to the public** in the region by making it highly visible; (ii) to ensure the technical content is communicated to users in a focused manner. **Existing mass media will be given preference** (purchase of space in large circulation national daily newspapers, purchase of airtime on rural radio and television, etc.).

80. **Possible further actions:** part of these activities intended to achieve viable steps towards the sustainable management of coastal areas also include the continuation of other actions launched by the IOC and the European Union in this field, in particular the ARPEGE programme.

K. Involvement of the states and viability of the results of the programme

¹⁸ Enterprise Development Centres

81. The support offered by means of this future regional programme concerns **structural** aspects of coastal area management. With that in mind, it is essential that **the results of the programme are viable**, if we consider that the establishment and consolidation of regional partnerships can only be envisioned over the **medium and long term**.

82. **Involvement of the states in the programme is essential if the acquisitions are to be developed adequately.** As well as seeing interesting economies of scale in the monitoring of technology, know-how, and their implementation, we have also recently seen events such as coral bleaching have underlined the **interdependence of coastal states from the point of view of protecting the biological heritage** (coral recruitment and regeneration of the reef are highly dependent on the existence of reefs in good condition able to produce larvae at the moment of reproduction). Moreover, the strategy document of the 9th EDF stresses the need for **coordinated management of efforts to safeguard the coastal heritage**. This involvement and coordination can occur at different levels.

83. **Political level:** in 1999, the Council of Ministers of the IOC States adopted a regional policy guidance document, contributing to the development of the IOC States. Following that decision, no further initiatives were developed and the Regional Commission for Sustainable Development, a consultative body referred to in this document, is not operational. The different aspects of politics on an international or enlarged regional scale (Nairobi Convention) have remained at a very general level, and do not take into account sufficiently or specifically, in a detailed manner, the current situation of the Indian Ocean states. There are no precise guidelines for the implementation of these policies and resolutions, nor any regional mechanisms for the coordination and follow-up of actions. While for the states, the organisation of the deployment of measures and activities is a question of national sovereignty, certain domains fall within regional subsidiarity.

84. The pilot role of the IOC for natural resources as part of the 9th EDF NIP should encourage IOC member states to adopt a defined and dynamic political or strategic instrument, accompanied by mechanisms for coordination, forming a joint reference point for the sustainable management of coastal areas.

85. The question arising with regard to the future programme is **the identification of a regional policy body or authority** able to take advantage of the **desired flexibility of the programme** to assist with **consolidating** the main lines of regional policy for sustainable development. As we stand at present, this could possibly be a Regional Commission for Sustainable Development, or a body operating with representation of the five centres of excellence whose establishment was decided by the IOC. Over time, it is possible that this body could take on a policy role for all regionally-based sustainable development activity. The secretariat of this regional body would be provided by the regional coordination body for the programme, located at the IOC.

86. **To provide the region with a permanent financial instrument:** if procedures for drawing on the budget line for actions prove to be satisfactory, it would be useful to envision a permanent role for this financial instrument in the form of a trust fund. This is a medium or long-term option, whose relevance and feasibility can be assessed over the planned life of the programme.

87. **Financial and operational level:** the involvement of the States in the implementation of the programme could occur via their contribution at different counterparty levels, which could be the object of discussions during the Mauritius Seminar in September 2003.

L. Implementation procedures

88. Steering the programme: The programme must be coordinated by a regional coordination body, which will act as regional project supervisor. The regional coordination body will liaise directly with the programme framework operators responsible for the different components, with whom the regional coordination body has a contractual relationship under a mandate conferred on them. This regional coordination body would be under the supervision of a Steering Committee, responsible for administrative and financial matters (principally as Authorising Officer and EC) and a Regional Policy body, authority or committee (referred to above). The Regional Authorising Officer for the Programme would be the General Secretariat for the Indian Ocean Commission, which has specific responsibility for natural resource management under the Regional Strategy of the 9th EDF.

89. Technical assistance: the regional coordination body would include a regional coordinator, an expatriate technical assistant, an administration and finance manager recruited in the region, and a secretariat. All other human resources would be provided via (i) contracts given to programme framework operators, (ii) service contracts issued by the regional coordination unit based on programme specification or specific topics. In theory, use should only be made of the expatriate technical assistance resource if regional expertise in the field is not available, if an outside view is required where the transfer of technical solutions is involved, or for training purposes. In all cases, the expatriate technical assistance resources should work in conjunction with regional experts.

90. Linguistic aspects: the programme will be at least bilingual (English, French) in all its internal and external communication.

91. Monitoring, capitalisation and evaluation: the programme will implement a monitoring system providing control and allowing for real-time knowledge of (i) the status of actions, (ii) the adequacy of the resources deployed in relation to (iii) the outputs versus the planning and initial work schedule. It is intended to allow the managers and **operators to apply the necessary corrective measures while the programme is underway, thanks to early gap identification and analysis.** Under this future programme, this role is vital in ensuring that the programme's decision-making bodies have maximum sensitivity to the results produced by the strategies implemented, and are able to refocus these strategies where necessary.

92. All decisions and documents related to the establishment of the mechanism for monitoring and evaluation must be included in the procedures manual, to be checked and approved by the supervisory authorities responsible for the future regional programme.

93. Since the future regional programme can be considered as a pilot project in the regional context, the two aspects of (i) **capitalisation** (recording of the processes used and the results and outputs achieved) and (ii) **communication** (external visibility of the project, communication and feedback on experience) should be able to be **integrated** in the monitoring activity for reasons of effectiveness and economies of scale.

94. Evaluation: independent evaluations, both mid-term and final, will be undertaken specifically according to the basic format and directives concerning the evaluation of programmes financed by EDF funds. **The future programme will be subject to external audit at each of its independent evaluations. An annual audit of the accounts will be carried out with the help of a regional office.**

M. Involvement of the Reunion Island in the programme

95. The involvement of the Reunion Island in this programme is obviously essential at various levels: (i) participation in the regional process that the programme has to develop, **with particular reference to the concept of sustainable co-development**, underpinning the regional cooperation strategy of the

Reunion Island ; (ii) development of the specific skill centres of the Reunion Island for the benefit of the ACP States in the region, (iii) development of skills in the Reunion Island , particularly in the area of technical assistance, (iv) improved performance, especially in the management of marine parks, benefiting from cross-fertilisation from other experiences.

96. Moreover, the domains developed in this proposed regional programme are consistent with the demands of the Reunion Island , particularly in regards to the monitoring of reef ecosystems and the network of marine parks.

97. The main issue relates to the synchronisation of the support that the Reunion Island (not eligible for the EDF) could obtain from the ERDF with the commencement of the regional programme funded by the EDF. This synchronisation requires particular attention, right from the current pre-feasibility stage, but especially during the appraisal phase, to ensure that preparing the application for ERDF funding commences early enough to ensure that it is completed in time for the launch of the programme.