ARTISANAL FISHERIES
INCOME DIVERSIFICATION STUDY
ECO-TOURISM & RECREATIONAL FISHERIES
June 2012

Programme for the implementation of a Regional Fisheries Strategy for the Eastern and Southern Africa and Indian Ocean Region

Programme pour la mise en œuvre d’une stratégie de pêche pour la région Afrique orientale-australe et Océan Indien

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INDIAN OCEAN COMMISSION
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The Eastern-Southern Africa
And Indian Ocean Region

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Implementation of a Regional Fisheries Strategy
For The Eastern-Southern Africa and India Ocean Region

Programme pour la mise en oeuvre d'une stratégie de pêche pour la
region Afrique orientale-australe et Océan indien

Artisanal Fisheries Income
Diversification Study
Eco-Tourism & Recreational Fisheries

SF/2012/17
Simon J Diffey

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Agrotec

June 2012

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PREFACE

Within the context of the sustainability of artisanal fisheries in the ESA-IO region, efforts are being made to understand how traditional fishers can improve economic conditions for themselves and their communities through diversification from traditional fishing activities. This could provide supplemental and/or alternative opportunities for the fishing communities that would remove pressure from over-fished stocks, as well as provide new and exciting opportunities to improve economic returns.

Whilst this context has merit, SmartFish also provides an opportunity to review and understand potential in areas that are less developed and less understood in the region, but offer quite significant potential for investment at a small scale that is suitable to the smaller entrepreneur in the region, and notably for women to be involved.

A regional study has been undertaken by a consultant Simon Diffey, who travelled to four countries in the region to assess opportunities that could be deemed realistic, primarily in terms of economic sustainability, whilst providing a real benefit and practical option for artisanal fishers to become involved with.

SmartFish is interested to identify suitable opportunities for diversification and to provide support to pilot these opportunities in suitable areas to encourage their expansion and integration within the overall strategic regional fisheries development approach that forms the basis of the Programme. This study focused on Tanzania, Zimbabwe, Mauritius (Rodrigues) and Madagascar, but an important criterion for the study was to investigate and highlight those opportunities that could potentially be transferred within the ESA-IO region.

The study output provides a list of specific targeted opportunities that will be reviewed by SmartFish in this context and potential for piloting / communication or other appropriate assistance will be determined.
ABBREVIATIONS AND ACRONYMS

AM  AgniribeMihetsika (fishing community, Agniribe, Ile Sainte Marie, Madagascar)
ASCLME Agulhas and Somalia Current Large Marine Ecosystem
ASD  Association Santé Développement
DfID  Department for International Development (United Kingdom)
DLIST  Distance Learning and Information Sharing Tool
ESA-IO  Eastern and Southern Africa-Indian Ocean
EU  European Union
FAO  Food and Agriculture Organization (of the United Nations)
GEF  Global Environment Facility
IOC  Indian Ocean Commission
IFAD  International Fund for Agricultural Development
IRFS  Implementation of a Regional Fisheries Strategy (Programme)
KITFT  Kariba Invitation Tiger Fish Tournament (Zimbabwe)
Km  Kilometre
MACEMP Marine and Coastal Environmental Management Project (Pemba)
MPA  Marine Protected Area
MPRC  Multi-Purpose Resource Centre (Pemba)
NGO  Non Government Organisation
PECCA  Pemba Channel Conservation Area
RGFC  Rodrigues General Fishing Company
RRA  Rodrigues Regional Assembly
SEMPA  South East Marine Protected Area (Rodrigues)
SPSM  Société de Pêche Sainte Marie (Madagascar)
TIES  The International Ecotourism Society
TOR  Terms of Reference
ULKRS  University (of Zimbabwe) Lake Kariba Research Station
UN  United Nations
VCA  Value Chain Analysis
WSPA  World Society for the Protection of Animals

CURRENCY UNITS

Official EU exchange rates¹ for January 2012:

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<th>Currency</th>
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<th>US$ 1.00 =</th>
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<tr>
<td>Tanzanian Shilling (TZS)</td>
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</tr>
</tbody>
</table>

Note that the Zimbabwe dollar (ZWL) is currently not in use in Zimbabwe and all transactions are conducted in US$.

¹ http://ec.europa.eu/budget/contracts_grants/info_contracts/inforeuro/inforeuro_en.cfm
LAYMAN’S SUMMARY

A study was completed in late 2011-early 2012, targeting Pemba Island, Zanzibar; Lake Kariba, Zimbabwe; Ile Sainte Marie, Madagascar and Rodrigues Island, Mauritius to look at opportunities for reducing fishing effort on inshore fish resources by diversifying the activities of small-scale fishers and fishing communities into recreational fishing and/or eco-tourism related activities. Essentially a project scoping, or design exercise, the study identified a number of opportunities where the SmartFish Programme can support existing or emerging artisanal fisheries diversification initiatives in each of these tourist destinations in the ESA-IO region.
EXECUTIVE SUMMARY

1. The income diversification study focusing on eco-tourism and recreational fisheries was completed between December 2011 and March 2012.
2. The consultant, Mr Simon Diffey, visited four case-study countries in the ESA-IO region during December 2011 and January 2012 - Pemba Island, Zanzibar; Lake Kariba, Zimbabwe; Ile Sainte Marie, Madagascar and Rodrigues Island, Mauritius.
3. The state of the recreational fishery and aquatic related ecotourism industry is highly variable in the countries visited – from emerging in Pemba Island to highly developed (but in recent years under-utilised) on Lake Kariba.
4. Ile Sainte Marie and Rodrigues Island have a generally well developed tourism sector with potential for developing more marine/fisheries related eco-tourism.
5. The study concludes that there is a general lack of readily available data (in-country) on the value of and participation in recreational fisheries and associated aquatic related eco-tourism activities. Economic research on the value of some of these eco-tourism related industries is recommended to help inform the policy decision making process and improve sector governance.
6. Landings in the artisanal sector are generally in decline due to over-fishing with limited control in most countries visited. There is therefore need for fisheries MCS capacity building within the artisanal sector in all of the countries visited. Support for strengthening community based enforcement is recommended.
7. Further research is needed on the use of FADs (and artificial reefs) to potentially move artisanal fishing effort offshore and support recreational fisheries development.
8. Both Pemba Island and Ile Sainte Marie are in need for FADs. Lessons can be learnt from existing FAD operations around Rodrigues Island.
9. There is a need for awareness-raising of environmental issues amongst the fisher communities. This is particularly the case when introducing new technology or techniques to fishing communities.
10. Future project interventions should be sensitive to the involvement of women in fisheries and the cultural norms that can be expected in each country.
11. Sector study research is needed to improve development planning and governance issues. The recent VCA work completed on Rodrigues Island should be repeated in other areas of the region.
12. The study recommends supporting existing eco-tourism related projects or projects already conceived but not yet funded (rather than conceiving new projects).
13. Five project concept notes are recommended for funding:
   - A socio-economic project on Pemba Island (provisional budget €13,259)
   - Two EIAs for aquaculture projects on Lake Kariba (€10,086 and €5,827 respectively)
   - A sport fishery economic research project on Lake Kariba (€6,595)
   - An agro-tourism project on Ile Sainte Marie, which has potential to include marine eco-tourism related activities (€16,210)
14. Outline ToR has been prepared for an economic research consultancy focusing on the whale-watching industry around Ile Sainte Marie (28 person-days of input) and for a fisheries eco-tourism capacity building (business planning) input on Rodrigues Island (22 person-days of input).
15. The proposed economic research on the Lake Kariba sport fishery could be broadened and a VCA for the whole sector prepared. Alternatively the research on the economics of the sport fishery could be combined with the proposed valuation of the whale-watching industry (on Ile Sainte Marie).
16. A detailed alternative livelihoods action plan has been prepared for the SEMPA region on Rodrigues Island. There are some short term priority objectives within this action plan that the SmartFish Programme could support.
17. A one-year alternative livelihoods project proposal has been prepared for the SEMPA region on Rodrigues Island and submitted to GEF for funding (total project costs €43,537 of which the funding requested was €35,521). Funding for this project should be considered if this project has not yet been launched.
18. Linkages to the MCS and governance components of the SmartFish Programme were identified which merit further investigation.
RÉSUMÉ EXÉCUTIF

1. L’étude sur la diversification des revenus, consacrée à l’écotourisme et à la pêche récréative, a été menée entre décembre 2011 et mars 2012.

2. Le consultant, Mr Simon Diffey, a effectué des études de cas dans quatre pays de la région AOA-OI durant les mois de décembre 2011 et janvier 2012 : l’île de Pemba à Zanzibar, le lac Kariba au Zimbabwe, l’île Sainte Marie à Madagascar, et l’île de Rodrigues à Maurice.

3. Le statut de la pêche récréative et de l’industrie écotouristique liée au milieu aquatique est hautement variable dans les pays visités : d’émergentes, comme à l’île de Pemba, à très développées (bien que sous-exploitées ces dernières années) sur le lac Kariba.

4. Les îles Sainte Marie et Rodrigues ont un secteur écotouristique généralement bien développé, avec un potentiel pour développer davantage l’écotourisme lié à la pêche et au milieu marin.

5. L’étude conclut qu’il y a un manque généralisé de données prêtes à l’emploi sur la valeur économique de la pêche récréative et des activités écotouristiques liées au milieu aquatique, ainsi que sur la participation à ces activités. Il est recommandé d’entreprendre des recherches économiques sur la valeur de certaines de ces industries écotouristiques, afin d’informer les processus de prise de décision et d’améliorer la gouvernance du secteur.


7. Davantage de recherches sont nécessaires sur l’utilisation des DCP (et récifs artificiels) afin de déplacer l’effort de pêche artisanale vers le large et de soutenir le développement de la pêche récréative.

8. Les îles de Pemba et Sainte Marie ont toutes deux besoin de DCP. Des leçons peuvent être tirées des opérations sur DCP existant autour de Rodrigues.

9. Une sensibilisation des communautés de pêcheurs au sujet des problèmes environnementaux est nécessaire. Cela est particulièrement nécessaire lorsque sont introduites de nouvelles technologies ou techniques dans les communautés de pêche.

10. Les futures interventions de projets devraient être sensibles à l’implication des femmes dans la pêche et aux normes culturelles pouvant être observées dans chaque pays.

11. Il est nécessaire d’entreprendre des recherches sur le secteur afin d’améliorer la planification de son développement et de traiter des problèmes de gouvernance. La récente étude sur la chaine de valeur entreprise à Rodrigues devrait être réitérée dans d’autres zones de la région.

12. L’étude recommande de soutenir les projets d’écotourisme déjà existants, ou les projets déjà conçus mais en attente de financement (plutôt que de concevoir de nouveaux projets).

13. Cinq de ces projets font l’objet d’une note conceptuelle et sont recommandés pour financement :
   - Un projet socioéconomique sur l’île de Pemba (budget prévisionnel : 13.259 €)
   - Deux EIE pour des projets d’aquaculture sur le lac Kariba (respectivement 10.086 € et 5.827 €)
   - Un projet de recherche économique sur la pêche sportive sur le lac Kariba (6.595 €)
   - Un projet d’agrotourisme sur l’île Sainte Marie, ayant le potentiel d’inclure des activités d’écotourisme marin (16.210 €)

14. Une ébauche de TDR a été préparée pour une consultation/recherche économique consacrée à l’industrie de l’observation des baleines autour de Sainte Marie (input de 28 jours-homme) et pour un renforcement des capacités en matière d’écotourisme lié à la pêche (business planning) à Rodrigues (input de 22 jours-homme).


16. Un plan d’action détaillé sur les moyens d’existence alternatifs a été préparé pour la région de la SEMPA à Rodrigues. Il y a, dans ce plan d’action, des objectifs à court terme prioritaires que le Programme SmartFish pourrait soutenir.

17. Une proposition de projet sur les moyens d’existence alternatifs, d’une durée d’un an, a été préparée pour la région de la SEMPA à Rodrigues, et soumise au GEF aux fins de financement (le projet entier coûte 43.537 €, dont 35.521 € ont fait l’objet de la demande de financement). Il devrait être envisagé de financer ce projet si celui-ci n’a pas encore été lancé.

18. Des liens avec les composantes SCS et gouvernance du Programme SmartFish ont été identifiés et méritent d’être examinés davantage.
INTRODUCTION

This assignment was undertaken as an activity under result area four of the Implementation of a Regional Fisheries Strategy (IRFS) for ESA-IO Programme, launched in February 2011 and hereinafter referred to as the SmartFish Programme. This programme is financed by the European Union (EU) under the 10th European Development Fund and implemented by the Indian Ocean Commission (IOC) in collaboration and association with a number of other regional fisheries management, geo-political and development bodies.

SmartFish has the overall objective of contributing to an increased level of social, economic and environmental development and deeper regional integration in the ESA-IO region through the sustainable exploitation of fisheries resources. Result area four of the programme is involved with issues of regional trade development.

The immediate objective (output) and activities of this assignment (see also Annex 1-Terms of Reference, ToR) were to prepare a diversification study following visits to four countries within the SmartFish Programme to look at opportunities in recreational fishing and/or eco-tourism, as they relate to the artisanal fisheries sector and income diversification. The four countries/locations targeted for the study were:
• Zimbabwe-Lake Kariba
• Madagascar-Île Sainte Marie
• Tanzania-Pemba Island
• Mauritius-Rodrigues

The field work was completed in December 2011 and January 2012 - Annex 2 provides details of the consultant’s itinerary and persons met. This report was completed from home office during February-early March 2012.

ACKNOWLEDGEMENTS

The consultant wishes to acknowledge the significant support provided by Mr Yann Yvergniaux, Fisheries Economist based at the SmartFish Project Management Unit. He provided invaluable assistance in Madagascar and Rodrigues and during the report writing period in translating documentation and liaising with country-based officials.

The time and assistance of all stakeholders is also acknowledged and in particular those involved in preparing project concept notes.

COMMENTS TO THE TERMS OF REFERENCE

The consultant received a briefing by e-mail prior to completion of the first field work on Pemba Island in December 2011. The consultant did not visit the project office or IOC headquarters, Mauritius until after all of the field work was completed.

It was agreed with the coordinator for this assignment (Mr Chris Short) that the focus should be on project scoping – namely identifying projects that relate to income diversification, ideally within an ecotourism/recreational fisheries context.

Given the limited timeframe (two years) within which to implement these projects, the fact that the SmartFish programme is operating across 20 countries and has very limited capacity on the ground in each country, the consultant has been mindful of the need not to ‘re-invent the wheel’ – namely not to try to design completely new projects but to identify where support can be given to existing initiatives already identified by local communities, NGOs or the government.

Furthermore, the consultant was encouraged to identify and recommend possible projects for funding that: (a) had potential for replication elsewhere within the IRFS countries and (b) supported linkages with the other components of the IRFS programme.
INCOME DIVERSIFICATION - ECOTOURISM & RECREATIONAL FISHERIES

This assignment has involved a considerable amount of project identification and scoping across four countries. In order that any of the projects identified have any real chance of being supported by the SmartFish Programme within a realistic timeframe, emphasis has been placed on working up ToR and/or Project Concept Notes (PCN) contained in Annex 4. As a result the main body of the report is limited in content (context, methodology and discussion) as much of the analytical work is contained within the annexes, which are considered the most important output from this assignment. Nevertheless, in order to place this assignment within an appropriate context (regionally), the consultant has provided a rapid overview of the global and regional tourism/ecotourism sector as it relates to his ToR.

THE GLOBAL IMPORTANCE OF RECREATIONAL FISHERIES

The FAO website\(^2\) defines recreational fishing as fishing for reasons other than to satisfy essential nutritional needs and where fishing products are generally not sold or otherwise traded on markets.

Data from the Food and Agriculture Organization (FAO) of the United Nations (UN) website suggests that about 10% of the population in industrialized-nations fish in their spare time and that recreational fishers globally (from these countries only) likely number over 140 million. When including developing countries, where data on the numbers involved is considered highly unreliable, the FAO suggests that some experts have estimated that up to 700 million people worldwide might be engaged in some form of recreational fishing. It is therefore safe to conclude that several million jobs worldwide\(^3\) depend on recreational fisheries with an associated global spending estimated at up to several billion Euros annually (no precise data is given on the FAO website).

The FAO factsheet on Recreational Fisheries\(^4\) states that recreational fisheries\(^5\) exist in developed countries as a pastime and in under-developed countries as a tourist attraction. The factsheet goes on to suggest that in some areas the local economies are far more reliant on the expenditure generated by recreational (sport) fishers because the income and employment generated by recreational fisheries exceeds that from commercial fisheries or aquaculture.

This has clearly necessitated in many localities the careful management of the impact of recreational fisheries (through for example the licensing of anglers and boats, closed seasons and establishment of catch or “bag” limits) so as to ensure that the recreational catch combined with the commercial sector catch does not exceed sustainable limits. Recreational fishing now constitutes the dominant use of wild fish stocks in all freshwaters of industrialized countries as well as for some species in many coastal fisheries. Recreational fishing is also of increasing importance in many economies in transition.

Big-game fishing for pelagic species such as tuna, marlin, swordfish, dorado (dolphin-fish), giant trevally, wahoo and barracuda\(^6\) are an important attraction in all of the four case-study tourist destinations reviewed during this study. Often, but not always these fisheries need to be carefully managed to avoid conflict with the commercial fishing fleet, particularly given the higher revenue that recreational fisheries can bring to local or national economies.

Another recreational activity of importance for aquatic resource planners and policy makers which has a significant economic opportunity cost to the commercial exploitation of fisheries is the sport diving tourism industry, which is globally worth an estimated US$8 billion or €6.2 billion (2007 data at current exchange rates). In addition there are

\(^1\) http://www.fao.org/fishery/nems/39974/en
\(^2\) Primarily in the tourism service sector
\(^4\) And the tiger fish on Lake Kariba, Zimbabwe
more consumer (usually marine) fisheries-related leisure activities such as glass-bottom boat tours, shark feeding, and swimming with dolphins, mini-submarine diving trips and snorkelling trips. All of these activities require that there are pristine reefs to swim/dive on and enough fish for tourists/divers to see. As a direct consequence commercial fishing is often banned in such areas through the establishment of marine parks or Marine Protected Areas (MPAs). These were evident in all three of the marine-related localities visited by the consultant.

Finally, the FAO factsheet on Recreational Fisheries refers to the complex socio-economic issue of the "unlimited" rights of indigenous people to catch fish in their spare time (a custom right often handed down through the generations) which is often inconsistent and even in direct conflict with modern-day fisheries management regimes that are usually enshrined in national legislation. There was clear evidence of the use of such rights in all four case-study countries. In some cases indigenous populations may be allocated quotas even though they have had no history of fishing for these species (although there was no evidence of such a situation in the countries visited).

The following case study (albeit argued from the point of view of conservationists) is considered an interesting example of how a natural resource is valued commercially versus through ecotourism:

**CASE STUDY – NAMIBIAN SEAL HUNT**

A comprehensive study on ‘The economics of seal hunting and seal watching in Namibia’ commissioned by international animal welfare organisations demonstrates that seals are worth far more alive than dead. Comparing the most recent figures available for both industries the report concludes that the annual Namibian seal slaughter poses a major risk to the far more lucrative seal watching tourism industry. The study revealed that in 2008, the Namibian seal hunt generated only £300,000 (€359,000), a poor comparison to seal watching which netted £1.2 million (€1.44 million) in direct tourism expenditure in the same period.

“Each year, up to 85,000 baby seals are killed in Namibia to make just a few dollars from their furs; this report highlights that they would be worth so much more to the Namibian economy alive,” said Claire Bass, World Society for the Protection of Animals (WSPA) international oceans campaign leader. “Eco-tourism is a growing part of Namibia’s identity but tourists will be shocked to find that a seal they photograph one day may be clubbed to death the next morning. There is a clear economic case for the government to protect these animals.”

The report provides a detailed insight into the seal slaughter by examining the monetary benefits attached to each part of the trade. Bull seals account for a large proportion of the profits as their penises are sold in Asian markets for alleged aphrodisiac qualities, for approximately £85 (€101.60) per kilogram. The seal pups are killed for their fur, with each pelt sold for as little as £3.50 (€4.20).

“The Namibian authorities have long defended the seal slaughter on the grounds that it generates money and jobs, but this report shows that it could actually be damaging to the economy”, said Mark Jones, executive director of Humane Society International based in the UK. “The Namibian seal hunt is clearly not sustainable.” said Mark Glover, director of Respect for Animals. “This report points to eco-tourism as a long-term and highly consistent way forward for this beautiful part of the world.”

Seal watching is a popular tourism activity undertaken by around 10 percent of tourists to the country; equivalent to just over 100,000 in 2008. Based on current growth trends, the report predicts that by 2016 as many as 175,000

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6 By this the author means activities which do not require specialist adventure or extreme sport training and can be accessible to the whole family.
7 As an illustrative example at just one of several dolphin watching sites on Mauritius, at an average cost of MUR 1,400 per tourist and assuming 10 boats per day, each with three snorkelers on-board, operating five days per week (to allow for bad weather/off-season), this equates to a direct income to the local community of MUR 10.92 million (Euro 285,000). Indirect income added to this includes taxi and car hire, diving equipment purchase, and value-addition for local hotels and the service sector.
9 Campbell, R., Knowles, T., O’Conner, S., 2011. The economics of seal hunting and seal watching in Namibia, a report for Humane Society International, WSPA, BontWaarDieren, Netherlands and Respect for Animals, United Kingdom, prepared by Economist at Large, Melbourne, Australia
tourists will participate in seal watching, generating close to £2 million (€2.39 million) in direct revenues. Seal watching also delivers benefits to a far wider range of Namibian society than seal killing, helping boost tourism support services such as hotels and restaurants.

GUIDELINES ON RESPONSIBLE RECREATIONAL FISHERIES

An international expert consultation convened in August 2011 by the FAO agreed on the first global guidelines on responsible recreational fisheries. The technical guidelines, which will be brought to the attention of the FAO Committee on Fisheries (COFI), support sustainable recreational fisheries by translating the relevant provisions of the FAO Code of Conduct for Responsible Fisheries (CCRF) into specific advice for sustainable recreational fisheries. They are directed at fisheries policy-makers and managers, other decision makers, NGOs, recreational fishers and other stakeholders and were prepared following calls from FAO member states for guidance on recreational fisheries as a rapidly rising form of use of wild fish populations.

The FAO expert consultation report (referenced earlier) states that the guidelines cover all types of recreational fisheries (harvest-oriented angling, catch-and-release fishing). The guidelines also cover all environments (marine, coastal and inland) and are global in scope. They highlight ways towards achieving sustainable fisheries using a range of tools and approaches in managing recreational fisheries. Aquatic stewardship is the overarching concept; other management approaches include the ecosystem and precautionary approaches and adaptive management. The guidelines acknowledge and emphasize the immense benefits of recreational fisheries and their important contribution to maintaining aquatic biodiversity and conserving endangered species and aquatic ecosystems.

The expert consultation report (FAO, 2011) furthermore states that while the interests of recreational fisheries should be considered in all decisions affecting aquatic ecosystems, potential impacts of recreational fisheries on aquatic ecosystems must also be addressed. Because aspects of recreational fisheries differ from commercial fisheries and aquaculture, a range of issues such as the potential for selective overexploitation, species introductions and stocking of water-bodies need to be dealt with differently.

WHAT IS ECO-TOURISM?

Given the consultant’s ToR it is considered appropriate to first clearly define for all readers what we mean by ecotourism, and then put the ‘business’ of ecotourism into a fisheries context.

According to the International Ecotourism Society (TIES), which is assumed to be the leading authority on this subject, ecotourism is defined as “responsible travel to natural areas that conserves the environment and improves the well-being of local people” (TIES, 1990).

TIES states on its website that ecotourism is about uniting conservation, communities, and sustainable travel. This means that those who implement and participate in ecotourism activities should follow the following ecotourism principles (as defined by TIES):

- Minimise impact
- Build environmental and cultural awareness and respect
- Provide positive experiences for both visitors and hosts
- Provide direct financial benefits for conservation
- Provide financial benefits and empowerment for local people
- Raise sensitivity to host countries’ political, environmental, and social climate

The consultant has as far as is practical and possible been mindful of these principles when identifying projects for support by the SmartFish Programme.

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11 As defined on http://www.ecotourism.org/what-is-ecotourism
COUNTRY PROFILES – A RAPID SECTOR OVERVIEW

Data on the tourism sector and details of on-going or planned initiatives that relate to ecotourism and/or recreational fisheries are included in this section, largely presented on the basis of information collected from interviews and site visits during each country mission. A supplementary questionnaire left with each of the country’s fisheries department provides additional relevant data - see Annex 5.

The FAO country profiles provide a useful additional database of information that is not repeated in this report (http://www.fao.org/countryprofiles). However this data is often out-of-date and is not necessarily specific to artisanal or recreational fisheries and is also usually aggregated data for the whole country (so not geographically focused for the locations addressed in this report).

The consultant was unable to obtain official statistics on the number of tourist arrivals for all of the target countries – reference is made to data where this was possible. The most complete data-set is available from the UN World Tourism Organisation Yearbook of Tourism Statistics (2011). This data costs €7.00 per country to access via their ‘tourism fact-book’ at:www.e-unwto.org/home/main.mpx.

PEMBA ISLAND (ZANZIBAR)

HISTORY AND TOURISM

Pemba was first inhabited in the 10th century by Persian merchants and in the 16th century the island was occupied by the Portuguese. In 1698 Omani Arabs replaced the Portuguese. Rival Arab groups, Omani then Mazrui, inhabited the island up until 1890, when it became a British protectorate. Independence as part of union between Tanganyika and Zanzibar was achieved in 1961. As a consequence the island has a long Islamic history (this point is of specific relevance to the potential development of ecotourism as discussed later).

Up until the 1980s foreigners were forbidden to visit Pemba. As a result Pemba is relatively untouched by tourism and options for visitors still remain relatively limited when compared with neighbouring Zanzibar Island. The terrain and white sand beaches however make it the picture of an ‘island paradise’ and thus ripe for ecotourism development if carefully planned. The west, northern and southern coast have sheltered lagoons and good coral gardens (the east coast is more exposed).

As tourism on Pemba Island is in its infancy there are only a few resorts about the island and these are generally all-inclusive and expensive. Low-cost eco-lodges are very limited in number. The island is serviced by ferry from Zanzibar and up to five flights per day from the Tanzanian mainland and/or from neighbouring Zanzibar (cost approx. €70). Limited plans for tourist development are reportedly under way, including the building of 95 miles of feeder roads with support from USAID.

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13 The island has a fertile terrain and has an important clove industry, the marketing of which is controlled by the government. Tanzania (primarily Zanzibar and Pemba) is the 3rd largest producer in the world after Indonesia and Madagascar.
14 Fundu Lagoon in the south and Manta Resort in the north-west tip are the two most well-known
The tourism commission was not able to give any precise details of annual tourist arrivals but confirmed the following:

- Approximately 80% of tourist arrivals are Europeans.
- The major constraint to development of tourism is currently the number of beds/hotels and generally limited public infrastructure (roads etc.).
- The most popular time of the year for tourists is November-January.
- Annual tourist arrivals are estimated at 12,000.
- Most tourists come for diving or snorkelling.

**RECREATIONAL FISHERIES AND MARINE RELATED ACTIVITIES**

There is reportedly only one resort offering big-game sport fishing (charter-boat), which is Fundu Lagoon in the south of the island. The cost for hiring on a full day basis are US$1,750 (€ 1,357) and for a half-day US$1,350 (€ 1,047). The resort also has a smaller boat for game fishing closer inshore and the Manta Resort offers fishing trips on local fishing craft (sailing outrigger canoes) for US$ 50 (€39).

The seas around Pemba are renowned for being some of the world’s finest game fishing grounds and many African records are from the Pemba Channel area. The Pemba Channel is a 50km wide natural corridor between the mainland and Pemba Island. Pemba Island therefore acts as a breakwater for the Pemba channel giving calmer seas for better fishing conditions.

One of the comments raised by both the authorities and a resort owner on Pemba is that much of the sport fishing in the Pemba Channel operates out of Mombasa in Kenya. It is unclear how close to Pemba these sport boats operate but it is highly likely that no economic benefits are accruing from such activities to the Pemba Island economy.

Although the island promotes itself as a diving ‘hotspot’ because of its remoteness and clear waters, there is evidence that overfishing of the lagoons, coral reefs and coastal waters has diminished its value as a diving tourist attraction. The consultant dived two sites on the island and whilst acknowledges the high species diversity and generally good visibility, notes that very limited large marine life was observed. There was also limited soft coral observed and there are few wrecks to dive. The consultant would therefore suggest that for well-travelled divers this destination is not as ‘world-class’ as is suggested in the advertising by the tourism authorities.

The entire west coast of Pemba was declared a marine conservation area in September 2005, referred to as the Pemba Channel Conservation Area (PECCA). More details about this are provided in the relevant section on project scoping.

**LAKE KARIBA (ZIMBABWE)**

**HISTORY AND TOURISM**

Lake Karibais the world’s largest artificial lake, bordering Zambia and Zimbabwe. It was filled between 1958 and 1963 following the completion of the dam at the north-eastern end close to Kariba Town, flooding the Kariba Gorge and Zambezi River. Lake Kariba is over 220km long and up to 40km in width and covers an area of 5,580 square kilometres. The mean depth of the lake is 29 meters and maximum depth is 97 meters. It is the world’s largest human-made reservoir and has both indigenous (from the Zambezi River) and introduced aquatic fauna.

Whilst Zimbabwe has many tourist attractions, Lake Kariba and its surroundings (in particular the Victoria-Falls) is undoubtedly the main attraction. This is helped by the fact that all of portion of the lake that falls within Zimbabwe is

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15 Data on tourist arrivals for July-September for the last four years were however available: 2008 – 2353; 2009 – 3043; 2010 – 3807 and 2011 - 7038

16 A case in point is that reportedly no manta-rays have been seen at the ‘Manta Resort’ for several years as they have all been fished out.

designated as a recreational park, managed by the government. These parks were initially founded simply as a means of using unproductive land and little regard was given to their value in conservation or ecotourism terms. This changed in 1975 with the enactment of a piece of groundbreaking conservation legislation, the Parks and Wildlife Act. This act has since been amended and refined and so has evolved as an important piece of wildlife-protection legislation. As a result the country is recognised as a leader in wildlife management.

Tourism has suffered significantly in recent years – particularly in terms of tourist arrivals from outside the country because of the economic crisis in Zimbabwe. The consultant was informed that of the four main hotels in/around Kariba Town, one has closed down, one sold/leased for government offices, one is under renovation and the fourth continues to function as normal (and was full during the Christmas period). Tourism is generally seasonal around the lake, with demand increasing at weekends and during school holidays (driven primarily by local/regional demand from residents rather than from foreign tourists).

The GacheGache Lodge (www.gachegachelodge.com) is located on the south side of the lake close to the GacheGache fishing community/landing site. This lodge has established its own community-based anti-poaching unit in 2010 after being approached by community members to help control illegal poaching and fishing.

**RECREATIONAL FISHERIES**

The lake has a vibrant aquatic ecology with an important semi-industrial fishery for the sardine-like kapenta (introduced from Lake Tanganyika). FAO data (from their country profile website) suggests that this fishery peaked in the mid-1990s with landings of 26,000mt per year but the fishery has since collapsed to landings of around 10,000mt. Kapenta used to be a cheap source of protein but is now a similar price as beef (US$5-6 per Kg /€3.9-4.7 per Kg).

Located close to Kariba Town, the lake also has what is arguably the most successful aquaculture business in southern Africa – Lake Harvest. This company is currently producing in the region of 750mt of tilapia per month (whole unprocessed weight), 60 percent of which is being exported to Zambia. Lake Harvest is keen to address their social/community obligation by supporting local community aquaculture projects; one of these projects already has external funding (with the technical assistance being provided by Lake Harvest). The preparation of Environmental Impact Assessments (EIAs) is a necessity under national planning laws before these income diversification projects can start. The SmartFish programme has been requested to support the preparation of these EIAs – see Annexes 4.2 and 4.3.

Game-fish tourism is an important activity on the lake, particularly for the Tigerfish (Hydrocynus vitatus). This is an indigenous species of the Zambezi river system which feeds on the kapenta. There is an annual Tigerfish tournament held on the lake (on the Zimbabwean side) in October each year – referred to as the Kariba Invitation Tiger Fish Tournament, KITFT (www.kitft.co.zw). This tournament has been running for 50 years (since 1962) and attracts significant international attention. This year between 250 and 300 teams from across the world have registered their interest and up to 400 boats typically take part in day one of the three-day event. Key statistics from the tournament held in 2011 included:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td><strong>Total number of teams entered</strong></td>
<td>268</td>
</tr>
<tr>
<td><strong>Total mass of fish caught (Kg)</strong></td>
<td>7542.22</td>
</tr>
<tr>
<td><strong>Total number of teams catching</strong></td>
<td>235</td>
</tr>
<tr>
<td><strong>Average mass per fish caught</strong></td>
<td>2.0875</td>
</tr>
<tr>
<td><strong>Total number of fish caught</strong></td>
<td>3613</td>
</tr>
</tbody>
</table>

Source: KITFT website

18 Zimbabwe has a wide variety of game reserves referred to variously as peace parks, national parks, recreational parks, sanctuaries, safari areas, botanical gardens and reserves
19 Data up to 2007 only
20 This is a significant increase as FAO country profile statistics suggest that Lake Harvest’s annual production since 2000 has averaged in the region of 2,500mt (data up to 2007 only).
The number of teams participating in earlier years averaged 120-140 although there was no competition from 2004-2006 (presumably because of the economic crisis). Recent attendance records suggest that this is an increasingly important annual event in the global sport fishing calendar. The KITFT website states that the participation fee in 2012 will be US$300 (£233) per team. If all 300 teams (with perhaps two-three persons per team) participate then a upwards of €0.6 million is likely to be injected into the local and national economy from this tournament alone through the expenditure on entry fees, hotels, transport, boat hire etc. Based on results from the KITFT there is also a catch and release competition targeting Tigerfish in February each year.

The consultant sought whilst in the field to obtain details from the National Parks Management Unit, which is the regulatory authority for licensing fishing on the lake, about income generated from the Tigerfish recreational (sport) fishery. However they declined to provide any information (for protocol reasons as clearance had apparently not been received from the Head of Department in Harare).

There is already a technical committee and protocol regarding the management of shared stocks on the lake and in the Zambezi River, which is facilitated by FAO. However there is no published research on the value of the recreational fishery of the lake to the local and national economy. This is considered a significant gap in the capacity of the authorities to inform policy makers, particularly given that on the Zambian side of the lake there is reportedly widespread use of gill-nets leading to over-fishing. It is strongly recommended that the SmartFish Programme support some economic research of this fishery as an input to both improving sector governance and assessing opportunities for trade diversification and value addition in this important recreational fishery – a PCN has been prepared to support funding of this research – see Annex 4.4.

ILE SAINTE-MARIE (MADAGASCAR)

HISTORY AND TOURISM

Île Sainte-Marie, known more formally as Nosy Borahaor in English as St Mary’s Island, is an island off the north-east coast of Madagascar, 60 km long and less than 10 km wide. The total population of the island is currently being assessed from an on-going national census but is likely to be in the region of 25-30,000. The island was a popular base for pirates in the 17th and 18th centuries as it was close to the sea-routes from the East Indies to Europe, provided good protection from bad weather and was fertile with abundant fruits. The pirates reportedly lived on an island close to the main town, Ambodifotatra, and many of them founded a family line with descendants still living on the island. There are reportedly pirate vessels sunk close to the shore that may be of interest to marine archaeologists.

According to the Regional Director of Tourism the island receives about 10,000 visitors a year and there is apparently less during high season than there used to be, although tourism undoubtedly peaks during the whale-watching season. The island is reportedly more ‘family-friendly’ compared to other resort islands in Madagascar such as Nosy Be in the north-west of the country.

The tourism office suggests that 80-90% of the island’s tourism sector is informal, with small resorts, hotels, bed and breakfast houses etc.; most of these do not register tourist arrivals and pay no taxes. Only around 10 of the 60 hotels on the island operate ‘legally’ (in the formal sector) and of these there is only one major resort (the Hotel Soanambo).

The channel between Sainte-Marie Island and Madagascar – 20-30 nautical miles apart – is an internationally recognised ‘hot spot’ for whale watching. Large groups of humpback whales (Megapteranovaeangliae) make their annual migration from the Antarctic Ocean and spend the southern winter (June-September) in the sheltered waters around the island to feed, breed and calve.

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21 Crudely estimated based on €100 per person per day for three days.
22 The main town of Ambodifotatra had a population recorded at 16,325 in 2001.
LOCAL FISHERIES AND WHALE WATCHING

Whilst many of the hotels on the island provide access to the water (canoes, diving, whale watching etc.) there are only two-three hotels that have tried organising fishing tourism according to the commercial fishing company, SPSM, based on the island. It is unclear why this is so and if there is potential for organised game fishing.

One of the main tourist areas on Sainte-Marie is the Île aux Nattes, a small island with a local population of 2,000 and a large number of (generally basic) small beach resorts/hotels located at the south end of the main island. RECOMAP, the IOC implemented precursor to the SmartFish Programme, supported by a local implementing development association known as ASD, established a fisherfolk association referred to as AgnitibeMihetsika (abbreviated to AM).

This association, one of three on Île aux Nattes, manages a Marine Protected Area (MPA) that is still functioning at the southern tip of the island – see aerial photograph overleaf. Unfortunately the involvement of RECOMAP in the establishment of the MPA ended under difficult circumstances before alternative income generating activities could be developed (and funded) – under such circumstances the MPA may be potentially un-sustainable without further outside support.

A meeting held with community elders and officials from AM confirms that this organisation is not representative of the fishers on Île aux Nattes - with only 20 members it is smaller than the other two associations, each with 30 members. 400+ adult males, many of whom are likely to have traditional access to the island’s marine resources, are also not members of any association. Despite this the MPA is reportedly recognised by everyone on the island, even if AM has no funds and limited resources (with only one small boat and engine) to ensure compliance with local fisheries regulations.

Of concern is that the reef area ‘sandwiched’ between the north of the MPA and the southern tip of Île aux Nattes is apparently devoid of fish; this is likely to result in increased encroachment on the MPA, the fish stock of which is reportedly in good health. There is however no on-going scientific monitoring of the health of the MPA.

The consultant documented a number of project ideas with the community elders and officials from AM – see the relevant section under ‘Project Scoping’.

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23 PROGECO in French
PICTURE 1: ILES AUX NATTES MPA

**FARITRA VOARO**
TSE AZO ANJONONA
ILES AUX NATTES - SAINTE MARIE

Andininy 43 DINA FIFAMPIFEHEZANA
nankatoavin’ny Sampandraharaman’ny Jono
eto amin’ny Faritra Analanjrofo sy ny
Distrika sy ny Kaominina eto Sainte Marie

**RESERVE**
**PÊCHE INTERDITE**

Article 43 du Règlement coutumier
approuvé par la Direction Régionale
de la Pêche et des Ressources halieutiques,
le District et la Commune de Sainte Marie.

Des sanctions sont appliquées à tout
contrevenant.

Avec l’engagement de l’Association
ANGNIRIBE MIHETSIKA
Tanterahina miaraka amin’ny
Fikambananana
ANGNIRIBE MIHETSIKA
A local NGO, CétaMada (www.cetamada.org), originally supported with foreign donor funding but now funded primarily from contributions from some of the larger hotels on the island, is the primary association dealing with marine tourism on the island. It runs whale watching tours and is involved in whale research24 and general marine environmental awareness-raising. They estimate that 1,000–2,000 whales migrate up to the island during the southern winter (the most that have reportedly been seen in a single day is 80).

CétaMada confirms that there are a number of fisheries, marine conservation and ecotourism related issues of concern on the island, including (in no particular order):

1. Pollution of the beach-line, particularly in urban areas, from garbage (plastic bags and bottles) and faeces on the beach. Both of these issues impact visually and directly on the image of the island as a tourist destination. There is a need for continual awareness-raising and the construction of more public and private toilets.
2. Un-regulated artisanal fishery with traditional rights for all islanders to exploit the reefs.25 This also calls for further investigation of traditional use-rights and how they can be used to improve fisheries management (given the limited resources of the Ministry of Fisheries)
3. Conflict during the whale-watching season with industrial trawlers using the same areas, particularly in relation to calving females. There is a detailed Code of Conduct in use by vessels participating in the whale watching business which is now enforceable in law by the Ministry of Environment but no such legislation exists enforceable by the Ministry of Fisheries.
4. There is concern about environmental pollution from a planned nickel mining project, with foreign investment backing, on the main island near Toamasina (Tamatave in French), which is the main port for Madagascar. It is unclear whether any EIA has been undertaken and it was suggested that there needs to be a round table meeting organised between the fishermen and hoteliers – both of whom will be affected by this mining project – to make representation to the government.
5. No research has been done on determining the value of the whale-watching industry to the local (island) economy.
6. Development of an educational diving centre – it is unclear what this would involve as there is already one commercial operator on the island.
7. Establishment of a fish market – SPSM dominate the local market, supplying ice and buying fish, octopus and lobsters from local artisanal fishermen (as well as operating their own commercial trawlers). There are collecting points (landing sites) all over the island but no fish market, which means that many of the larger hotels have to buy direct from SPSM. As a result fish is reportedly more expensive than it should be (by up to three times according to one hotelier).

RODRIGUES ISLAND (MAURITIUS)

HISTORY AND TOURISM
Rodrigues is the smallest of the Mascarene Islands located 560km east of Mauritius. It is 104 km² in size and has a peak elevation of 355m. It is a volcanic island with a rocky terrain and is surrounded by a coral reef which extends several miles seawards on the western, southern and south-eastern coasts of the island.26 The surface area of the lagoon is approximately 240 km². The coral reef of Rodrigues is of particular interest as it is self-seeding i.e., it receives no coral zooplankton from elsewhere. This has led to an overall species-poor but highly adapted ecosystem. As a consequence one species of coral, two species of damselfish and many new species of crustaceans are endemic to the islands’ reefs.27

24 Including a tagging programme funded by Total, the French oil company, whale observation work with CIRAD, the French research institute based in la Reunion, and work with international PhD students researching humpback whale songs.
25 The author personally saw children fishing the reef flats at low tide collecting small fish (and presumably some juvenile fish) using simple small seine nets with small mesh size.
26 The northwest reefs are more sheltered from prevailing winds and currents making offshore fishing easier. The south/south-east reefs are exposed and fishers rarely venture outside of the lagoon
It is a dependency but autonomous region of Mauritius. As of 2010 the island’s population was about 38,900. The main industries are tourism, the manufacture of handicrafts, farming and fishing. Tourist arrivals in Rodrigues were 50,437 in 2011 and 46,903 in 2010 – approximately 60% in each year were from Mauritius (data from Tourism Office). Arrivals are seasonal to some extent, peaking during the school holidays with the main season being in December. Although less developed than Mauritius, there is a range of small and resort hotels on the island, the larger resorts providing water-sport related activities (diving, windsurfing, kite surfing etc.). There are also a range of fisheries related tourism activities as documented below.

**ECOTOURISM, COMMERCIAL & RECREATIONAL FISHERIES**

A detailed analysis of the fisheries sector was completed in a recent Value-Chain Analysis (VCA) study prepared for the SmartFish Programme.\(^{28}\) This report states that as at November 2011, the sector employed 1,410 formally registered fishers including 330 fisherwomen who are involved mainly in the octopus fishery (see below). Approximately 2,000 non-registered (informal) full time and subsistence fishers are also estimated to be fishing on a full or part-time basis. This data conflicts with what the consultant was told by the Chief Commissioner, Rodrigues Regional Assembly (RRA), who suggested there were 900 fishers (formal and informal) on the island. The VCA report also states that some 400 registered fishers have over the past five years relinquished their fishing permits against some financial compensation, but suggest that it is most likely that they have gone back to fishing as non-registered fishers; presumably because of a lack of alternative livelihoods.

There are 1,821 registered fishing boats out of which 70% are traditional canoes using oars and sail. Their activities are limited to the lagoon. It is unclear whether most registered fishers own their own fishing boats or not (the VCA report suggests not but the consultant questions this based on his experience of island fisheries where it would be normal for most traditional fishing families to own their own boats). The VCA report states that in 2010 the annual catch on Rodrigues Island was estimated at 1,609mt, of which 1,225mt was from the lagoon fisheries (including 273mt of octopus) and 384mt was landed from the offshore (off-lagoon) fishery. Per capita consumption of fish is reportedly 20kg and these fisheries statistics do not include the portion of daily catch held for household consumption.

There is a long and respected tradition of women fishing for octopus in Rodrigues (they are referred to as “piqueuses d’ourites” in French, or “octopus spikers”). Catches have however declined significant in the past 10+ years due primarily to un-regulated over-fishing and to a lesser extent degradation of the marine environment. In an effort to diversify incomes for these fish-women, the RRA worked with a local NGO, SHOALS, in the north-east of the island (at Rivière Banane) and with a GEF/UNDP funded project SEMPA (South-East Marine Protected Area) in Port SudEst in the south of the island, to help establish a glass-bottom boat marine ecotourism business at each site. The idea is that the women, who know the reef areas from their octopus fishing activities, work collectively (there are 15 members in each location) to operate the boat taking out tourists for day-trips on the reef.

The key problem that has subsequently been identified is that these women are fishers and have little experience of either working collectively or managing a service-orientated business catering to tourists.\(^{29}\) The support from the NGO/project has possibly also not been business orientated enough (a criticism voiced by the local tourism office). There is therefore a need to organise and develop the capacity of these women to promote this alternative livelihood ecotourism – a potential intervention for the SmartFish programme discussed in the next section.

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\(^{28}\) Value Chain Analysis of Fisheries Sector of Rodrigues prepared by Dr Soobaschand Sweenarain (2011, draft)

\(^{29}\) As an illustration of this the consultant was staying at a hotel a couple of miles from the glass-bottom boat business based at Port sudEst, which markets itself under the name “Anemone”. Whilst the business has its own promotional flyer (see overleaf) there was no evidence of these at the hotel and the hotel tourist office was not aware of this service.
There are also other fishing related ecotourism activities promoted on Rodrigues, as is illustrated in the flyer overleaf – despite requests made through the SEMPA project office the consultant was unable to meet with any of the fishers participating in these activities. Further scoping is recommended to see if there are other small-scale fisher groups that also need business development capacity building.

Other marine ecotourism related activities on the island include a small sand-spit island (1.5km long and 250m wide) on the western reef, Ile aux Cocos, which is a protected nature reserve. Fishing is prohibited around this island. Several hundred tourists visit each month according to data from Discovery Rodrigues, the company that manages the island and issues access permits. There are 15 boatmen registered to provide transport to the island. This eco-tourist attraction appears to ‘work’ with minimal intervention by the fisheries department, presumably because the main focus for tourists is the experience of simply visiting the island (and it is far enough away from the main-island to not have polluted beaches).

PICTURE 2: MARINE ECOTOURISM FLYERS
There are 15 FADs located to the north of Rodrigues Island. The furthest is located nine nautical miles offshore in over 1000m of water and three are located inside the lagoon at a depth of 60m. Traditional fishing boats are not able to operate beyond the reef-line so the offshore FADs are used exclusively by several sport-fishing boats based in Rodrigues \(^{30}\) (although it remains unclear from information received whether they are legally licensed to fish around the FADs). These boats can catch upwards of 300kg in two hours working around the FADs and then this fish is often sold on the local market in direct completion with local fish catches.

There are eight fishing cooperatives on the island, five of which are registered to operate outside the reef. Each of these five cooperatives was provided with a new 10m offshore boat part funded\(^ {31}\) through the IFAD Rural Diversification Programme (which also funded the installation of the FADs several years earlier). These boats have a crew of eight and are equipped to work up to 80-90 nautical miles offshore for up to three-day fishing trips.\(^ {32}\)

The fishing cooperatives members interviewed by the consultant stated that their offshore fishing license does not permit them to fish the FADs – no specific reason was given by the cooperatives (and the consultant was unable to follow-up on this issue with the fisheries department) but this does appear at odds with the government’s clear policy to move fishing effort away from the lagoon. This is particularly given that the boats and FADs were provided by IFAD under the same project assistance package. In addition to these cooperative vessels there is also a government parastatal fishing company, Rodrigues General Fishing Company (RGFC), which was also provided with six 7-8m inshore boats\(^ {33}\) funded through IFAD. RGFC has a processing facility, cold-store, chill-room and blast freezer and a 1.0mt/day ice maker – the only industrial supply of ice on the island. This limited ice supply is a major constraint to the development of the offshore fishery in Rodrigues as a mechanism for moving effort away from the lagoon and reef fisheries.

\(^{30}\) There are estimated to be eight boats involved in the sport fishery on the island.

\(^{31}\) 75% funded by IFAD and 25% funded by the cooperatives.

\(^{32}\) The major constraint at present is the limited ice supply on the island so the vessels are usually unable to take enough ice to stay at sea for longer than three days.

\(^{33}\) With range up to 40 nautical miles offshore.
PROJECT SCOPING

The consultant was advised that projects of any size (financially) could be considered but that typically the maximum amount would be in the region of €10-15,000. It was also confirmed that projects can be comprised of (a combination of) small works, equipment supply and/or technical assistance (training and capacity building). As previously mentioned in the comments to the ToR, the consultant was encouraged to identify projects for funding that: (a) had potential for replication elsewhere within the IRFS countries and (b) supported linkages with the other components of the IRFS programme. The following project ideas are presented in no particular order of importance. Project Concept Notes (PCN) have been included in Annex 4 for those projects considered feasible for funding.

PEMBA - RAS MKUMBUU BASELINE STUDY FOR DLIST-ASCLME PROPOSAL

The following is partially extracted from the executive summary of the development planning and multi-purpose resource centre proposal for Wesha and Ndagoni communities, Ras Mkumbuu (prepared by EcoAfrica, 2011).

The peninsula of Ras Mkumbuu is located in the centre of the west coast of Pemba, in the Chake Chake Bay. The run-off from land makes water in the bay murky and the high sediment load makes this area less suitable for coral growth. It is nevertheless a region with very rich marine resources. Misali Island just in front of the bay (which has been a protected conservation area since 1993) also supports a large group of artisanal fishers in the area. This peninsula lies within the PECCA marine conservation area referred to earlier. Mangroves follow the coastline and some local mangrove planting initiatives have been quite successful.

Ras Mkumbuus is a narrow peninsula with some subsistence farming of cassava, mangoes and other basic food items. The main source of protein is in the form of fish and molluscs collected in the intertidal area at low tide. On Ras Mkumbuu there are many small villages, and the peninsula is divided into two Shehias (districts) – Wesha and Ndagoni. Ndagoni is more isolated than Wesha due to limited accessibility on the poorly maintained dirt road. Other points of interest on Ras Mkumbuu are the historical sites (ancient ruins that are believed to be one of the first mosques in Pemba) at the very tip of the peninsula, the “sunken” road running from the north east of the tip of the peninsula, just by the old ruins. The villagers talk about a sunken city that disappeared into the sea when an earthquake occurred a long time ago, but no evidence has so far been found to prove this legend. This makes the area interesting also from a heritage perspective and possibilities for diversifying into community based cultural tourism.

The two neighbouring Shehias of Wesha and Ndagoni were selected as community planning demonstration sites under a regional DLIST initiative (www.dlist-asclme.org). This is supported by the UNDP/GEF Agulhas and Somali Current Large Marine Ecosystem Project (ASCLME, www.asclme.org). The aim is that local stakeholders, the main resource users, will be involved in making a plan to achieve more sustainable use of the marine and coastal resources in the region.

34 In which case these projects may be much larger in size
36 The territorial area of this island is protected under the Misali Forest Order and the marine area is now protected under PECCA. Anecdotal evidence suggests that although this island is patrolled by rangers, the island is not as well managed as it used to be.
37 DLIST is a tried and tested community empowerment and outreach tool – the Distance Learning and Information Sharing Tool. DLIST focuses on communication and stakeholder involvement and works with the communities on the ground to create a plan for how they can reach a better future and more sustainable resource use.
38 All the countries along the East African coast (South Africa, Mozambique, Tanzania, and Kenya) and the Indian Ocean Island states (Comoros, Seychelles, Madagascar and Mauritius) are part of the project. Each country has one demonstration site except Tanzania where there is one on the mainland (Kilwa) and one in Zanzibar (Ras Mkumbuu in Pemba).
The objective of the development proposal prepared by EcoAfricas is to provide support to the communities according to the weaknesses and opportunities identified in the DLIST planning process. Multi-Purpose Resource Centres (MPRC) are proposed – one for each village – that aim to improve the lives of thousands of people in these remote and marginalised communities, by addressing many of the issues and alternative livelihoods options identified by the communities. The proposed MPRC will address food security issues and give people a better chance to adapt to the environmental changes caused by climate change.

Donor funding has yet to be formally identified for the MPRC – with a project costs estimated at US$700,000 (€540,000) – although some interest has reportedly been shown by the Danish overseas development agency DANIDA. Prior to the funding and implementation of this project there is a need to undertake a base-line study of these two communities. This was identified as a priority in the EcoAfricas proposal. A PCN prepared with researchers from the University of Dar-es-Salaam justifying support for this study is included as Annex 4.1.

**PEMBA - OTHER PROJECT INITIATIVES**

A number of potential project interventions have been identified by the consultant that requires varying degrees of additional scoping input. These include:

**Strengthening of PECCA - development of local MCS capacity**

There is a management plan for PECCA (prepared by the UNDP MACEMP in 2010) but this plan is still in draft form and has not been implemented. There are 34 villages within the PECCA which are represented through 29 fisheries committees. There is one representative on the PECCA management board from each fisheries committee.39

The island is divided into two regions (north and south) and four districts. One proposal made to the consultant was the need to improve MCS within the artisanal fishery – thereby supporting the development of resource co-management through the provision of two small boats (5m skiff plus OBM) per district (eight in total) for use to patrol and enforce the PECCA fisheries regulations. These boats could be manned by fisheries committee members. On-going funding of this operation could come from the income that PECCA derives from payments by tourists (currently levied at a rate of US$5 (€3.88) per diver per day paid to the resorts). The communities and resorts reportedly see no evidence of use of this income and it remains unclear exactly what PECCA is doing with the income it receives, which the consultant estimates may be in excess of US$30,000 (€23,275) per annum.40 The consultant concludes that the management of PECCA is in need of some capacity building support to ensure the transparent and efficient use of the tourism levy.

**Fish Aggregating Devices (FADs) - regional technical workshop**

One or more FADs were placed in the Pemba/Zanzibar Channel a few years ago but disappeared because it was reportedly incorrectly located (or equally likely run over by a large cargo vessel). Currently there are no FADs operational around Pemba Island. There is some interest to re-introduce these devices as a way of supporting the movement of fishing effort away from the reef (particularly as the sailing fishing vessels operate several miles offshore already).

There is potential to introduce FADs around Ile Sainte Marie, although it is questionable whether the artisanal craft there have the capacity to fish outside the reef and the commercial–semi-industrial–company, SPSM is seeking to have FADs located 5–20 nautical miles offshore which would not benefit the artisanal(traditional) fishery. The use of FADs is already well established in Rodrigues and there may be other countries in the region (within the SmartFish Programme) interested in developing or expanding their use. Some work on the use of FADs was also supported by the earlier IOC fisheries project (RECOMAP).41

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39 The urban villages are combined in terms of representation on the fisheries committees

40 Crudely estimated based on 50% of the annual tourist arrivals (12,000) diving at least once

41 Some useful work on FAD deployment was also done in Tanzania with support from the UK government DfID – see http://www.researchintouae.com/hrk/RILinfos/outputs/RB331_Rep1.pdf
Organising a regional workshop to share experiences, including also exploring the potential for developing artificial reefs to move fishing effort away from over-fished lagoon/reef fisheries, is considered an appropriate intervention for support by the SmartFish Programme.

**Seaweed farming - regional farmer’s workshop**

Six companies control the buying and export of seaweed on Pemba Island, which is grown in the sheltered bays on the east coast of the island. The species grown is Eucheumaspinosum as E.cottonii is prone to disease. Exports are primarily to the USA and Philippines. It is unclear what the level of production is and the current buying price (Ts500/kg dry weight) is low when compared to the income from harvesting cloves (current market price Ts18000/kg dry weight).

Given that the SmartFish Programme is already considering to support seaweed farming initiatives elsewhere in the region (notably Madagascar), and there is also some field trials being undertaken in Rodrigues Island, there may be merit in organising and supporting a regional seaweed farming workshop to share experiences. Promoting this industry could directly contribute to the income diversification interest of the SmartFish programme.

**Development of archaeological sites on RasMkumbuu**

There is potential to develop the archaeological site at Ufingani Village on RasMkumbuu into an eco-tourism attraction. A detailed scoping exercise will need to be undertaken to develop and cost a proposal (which is considered beyond the scope of this consultancy), but the essential development priorities identified by the community are considered to be:

1. A small rest house to accommodate visitors (and employing women from the village);
2. A garden to grow fruits and vegetables for the rest house (and employing youth as labourers);
3. A small boat (for transferring visitors to/from the site as the road from the main town is in bad condition); and,
4. English language training.

In addition the community will undoubtedly need some capacity building in micro-enterprise business planning (preparation of a simple business plan).

**LAKE KARIBA – TILAPIA AQUACULTURE EIA**

The success of the Lake Harvest tilapia farming business has prompted donors, local NGOs and local communities to consider opportunities for small-scale aquaculture projects as a way of diversifying income away from traditional capture-fisheries. Two such projects have been identified by the consultant.

**World Vision PRP fisheries programme**

The World Vision (WV) Protracted Relief Programme (PRP) Phase II programme has received significant funding from the UK government to implement project activities. However no funding has reportedly been allocated to undertake an Environmental Impact Assessment of these activities to be carried out on the lake.

The PRP is an integrated programme that involves the participation of 100 small scale fishers. The focus is on the development of a small scale fish cage farm in the Sanyati Basin of Lake Kariba. Key project activities include input provision to 100 farmers, training of farmers in tilapia fish production, environmental management and market linkages. WV and SNV, the Dutch (Netherlands) Development Organisation, will broker a partnership between five fish producer groups and Lake Harvest for tilapia outgrowing production. They will also facilitate negotiation of expectations between Lake Harvest and fish producer groups around quality production, technical training, delivery, and pricing. WV will support initial production inputs of boats, fish cages, scales, refrigeration solutions and handling materials applying a cost-recovery scheme. Lake Harvest will provide fingerlings and technical support to the producers. Annex 4.2 provides a PCN for an EIA of the WV PRP Phase II programme on fisheries to be implemented on the lake.

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42 The programme runs for four years but funding from DFID for the fisheries component is for one production cycle only (12 months)
43 This omission is surprising and should be clarified the DFID office in Harare
Deep-waters Fish Growers Ltd
This project involves 12 stakeholders – 10 women and two men. Eight of the women are widows with children. The company is seeking to diversify away from the Kapenta fishery to develop a small commercially sustainable tilapia farm close to the Kariba dam. They have no funding for the project at present (estimated to cost US$100,000 or €77,600) but are seeking preliminary support to prepare an EIA – see Annex 4.3. The company is also seeking technical assistance from Lake Harvest to train the women in small-scale fish farming practices.

LAKE KARIBA – VALUING THE SPORT FISHERY

Sport fishing, particularly for the Tigerfish is big business on the lake and potentially competes with the other fisheries related activities – specifically the industrial fishery for the freshwater sardine, Kapenta (Limnothrissamiodon), artisanal gillnet fishery (which targets a variety of species that occupy the shallow areas of the lake) and commercial aquaculture of the exotic bream, Tilapia (Oreochromis niloticus) which is farmed in cages.

Whilst some research has reportedly been undertaken on the value of these other fisheries related activities, very little is known about the economics of the sport fishery. Support from the SmartFish Programme is highly recommended to assess what contribution this recreational fishery makes to the local and national economy and compare this with the value of the other fisheries related economic activities on the lake. The results of this research could then be used to influence policy and governance issues at future meetings of the technical committee that deals with the trans-boundary fisheries management issues on the lake and Zambezi River shared between Zimbabwe and Zambia. A PCN prepared in consultation with the University of Zimbabwe Lake Kariba Research Station (ULKRS) is provided in Annex 4.4.

One option possibly worth considering is to broaden the scope of this project proposal to include a market value-chain analysis which would also include comparative economic research on the aquaculture, industrial and artisanal fisheries, plus incorporate a market survey on the emerging freshwater crayfish fishery (which may also have potential for development as an aquaculture activity). Linkages with other similar economic research (related specifically to the whale-watching industry in Ile Sainte Marie as discussed later) might also be worth considering ensuring an economy of scale in project activities/research funding.

LAKE KARIBA – OTHER PROJECT INITIATIVES

Other potential project interventions that have been identified by the consultant that requires varying degrees of additional scoping input include:

Micro-enterprise training and development
Both aquaculture ventures which are seeking funding support for the completion of EIAs will also require business skills training. This could be implemented as part of a wider (national or regional) business planning workshop where different businesses within the sector are coached in preparing business plans. These businesses will also require training in fish farming techniques and possibly value-added processing – this could possibly be provided by Lake Harvest staff with funding from the SmartFish programme?

Other value-addition ideas that could be explored through preliminary feasibility studies include freshwater crayfish farming and the value-added processing of waste material from Lake Harvest (for example a fish-skin tanning business). Both of these could be undertaken with inputs from the ULKRS and Lake Harvest.

GacheGache Lodge + MCS capacity building
Given the decline in catches and planned for increased aquaculture production on the lake, there is a need for awareness-raising amongst local fishing communities to improve management of the lake’s resources and to address potential conflict between artisanal fisheries and fish farming activities.

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44 As the consultant was informed that there may be an option to secure funding from the EU implemented ACP Fish II Programme to undertake a market study but this would need to be justified on a scale much larger than the PCN included with this report.
One resort that could be supported through the SmartFish programme is the GacheGache Lodge located on the south side of the lake, close to the GacheGachelanding site. This lodge has its own community based anti-poaching unit which the consultant suspects would benefit from new equipment and training (the consultant was not made aware of this unit until after the field work so is not able to provide an assessment of their needs or their legal status to control the fishery and arrest poachers). If there is any regional initiative under the MCS component of the SmartFish Programme then this unit should be considered for inclusion.

ILE SAINTE MARIE – RESEARCH ON THE ECONOMIC VALUE OF WHALE WATCHING (DRAFT TOR)

Because humpbacks are often easily approachable, curious, easily identifiable as individuals, and display varying behaviour, they have become the mainstay of whale-watching tourist industry in many locations around the world. For example in Hawaii, USA, local tour operators actively promote the concept of eco-tourism and as a result the whale watching business reportedly attracts one million visitors a year and contributes US$131 million (£101.6 million) to the local economy (2008 data). A 2009 study estimated that 13 million people went whale watching globally in 2008, generated US$2.1 billion (£1.63 billion) per annum in tourism revenue worldwide and employed around 13,000 workers.45

Given the importance of whale watching on Sainte Marie, and the complete lack of any data on the value of the tourism industry on the island, the consultant suggests that it is worth seeking a quantifiable answer to the question ‘what is a whale worth’ to the local economy? The consultant recommends that a consultancy assignment be funded by the SmartFish Programme with the following draft ToR:

- Define a methodology to value whale watching tourism
- Profile and quantify the whale watching tourism sector on Sainte Marie Island
- Assess and quantify the upstream and downstream benefits of whale watching
- Draw comparison (through literature review) with other similar locations (nationally, regionally and internationally) to assess if the maximum economic benefit is being derived on the island
- Advise on options to increase value addition from whale watching within the local economy
- Advise on international whale watching minimum standards that ‘best-fit’ compliance by local tour operators
- Review the interaction between the whale-watching industry and other local productive sectors

The assignment would require one mission of four weeks input (28 days) by a marine resources/ecotourism economist, involving 14 days field work, 2-3 days international/regional travel and the remainder based at the project office in Mauritius (or at home office). Seasonal tourism data would need to be collated and extrapolated for the whole whale-watching season (or local enumerators engaged to collect such data). The budget for this consultancy work would be approximately €5,000 (travel and per diems) plus consultancy fees.

The outputs from this research should be used to enable eco-tourism operators and local decision makers to assess the value of whale-watching to the island’s economy and take informed decisions as to the regulation of the activity and the fair repartition of its benefits. The research should also provide advice on policy changes and improved governance of the fisheries sector, particularly in relation to the interaction between whale-watching, environmental management, the artisanal and industrial fishing activities.

ILE SAINTE MARIE – AGROTOURISM DEMONSTRATION CENTRE

The consultant was shown a two hectare site on the east coast of the island which is the proposed site for an agro-tourism demonstration centre project, with bungalows (chalets), restaurant, agri-business (fruit farming) and livestock farm. The detailed project proposal was prepared by a local NGO, Mamizo, based in St Joseph’s village close to the main town of Ambodifotatra. This proposal won a national competition in 2010 but has yet to receive funding to be implemented.

45 O’Connor, S., Campbell, R., Cortez, H., & Knowles, T., 2009, Whale Watching Worldwide: tourism numbers, expenditures and expanding economic benefits, a special report from the International Fund for Animal Welfare, Yarmouth MA, USA, prepared by Economists at Large
The land for the proposed project, which has a lagoon front and is estimated to be worth €50,000 has been made available for the project by the President of the Mamizo association. This offer should be confirmed in writing at the earliest opportunity. Whilst the project is not exclusively fisheries related, 90 percent of the members of the St Joseph’s community are from fisher families and 45 percent are women. There is therefore potential for this project to include activities related to marine ecotourism and, importantly given the land-grabbing currently experienced on the island by commercial hoteliers, to help protect an area of coast-line that has mangrove forests.

The consultant recommends that the project is considered worth supporting as there is clearly significant potential at this site to develop an integrated approach to community based eco-tourism which also has potential for replication elsewhere in the IOC region. According to Mamizo, a ‘marine component’ has been drafted, but was not available for reading during the mission. Upon his return, the consultant requested further details from this NGO on the potential for including marine environmental/fisheries related activities in their proposal but no such information has to date been forth-coming; this issue requires further investigation before funding approval. The Ministry of Tourism would reportedly oversee the project and be involved in awareness raising/training and the SmartFish Programme could also support these related capacity building activities at a local and regional level.

Annex 4.5 provides a summary PCN describing the agro-tourism project and the full project proposal is attached as a separate appendix (Appendix 1) to this report.

ILE SAINTE MARIE – SUPPORT TO ILE AUX NATTES FISHING COMMUNITY

The following income diversification and development ideas were discussed and requested by the local community group (AM):

1. Procurement of a number of boats (7m long with 25hp engine) to support MCS activities and fishing away from the reef area (as an alternative income generating strategy that should have been supported by the previous project). Approximate cost per boat and engine = €8000
2. Training in boat and engine maintenance
3. Promoting diving tourism in the MPA area – this would require engaging with local dive operators (there is at least one on the island). Implementation of a ‘diving tourism tax’ as is done in Pemba Island (PECCA) could be considered
4. Sea cucumber ranching and seaweed farming (the latter has been tried with little success in the past)
5. Installing a FAD outside the reef to move fishing effort offshore (this should not conflict with the whale watching business and should be located aimed at use by the artisanal fishery of the Île aux Nattesand not SPSM vessels)

RODRIGUES – BUSINESS PLANNING SUPPORT (DRAFT TOR)

There are at least two marine eco-tourism related businesses operating on the island, and potentially several more, all of whom are would benefit from some business development capacity building – addressing the tourism market needs, how to organise their business, operational issues and simple financial planning. The following draft ToR is proposed for a consultancy input to support such an initiative:

1. Rapidly assess the training needs of the target beneficiaries (Training Needs Assessment, TNA). This would include field visits to the representative fishing communities in order to understand prevailing conditions with regard to small-business management issues. Consultative meetings should be held with stakeholders and local hoteliers;
2. Develop a training module on small-businesses management;

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46 This is effectively an in-kind contribution which will need confirming in writing (as it is an important project assumption)
47 The consultant was asked what the community (and AM in particular) could do to facilitate support by the SmartFish Programme – the advice given was to extend the membership of this association and/or establish some kind of representative apex association of federation that represents as many of the fishers on Île aux Nattes as possible
48 Both of which benefited from funding by the GEF small grant programme
3. Prepare teaching tools for women’s groups and other eco-tourism operators (small businesses management handbook).
4. Provide a 4-day business management training course to women’s groups and other key stakeholders.
5. At end of the workshop assess the effectiveness of the training course and advise on a mentoring programme that may be required to support these businesses.

The assignment would require one mission of 22 days input by a fisheries/business consultant. The mission would require 16 days field work, two-three days for international/regional travel and the remainder based at the project office in Mauritius (or at home office) for report writing. A local business consultant may be required to assist with mentoring of the business planning process post workshop. Assistance may also be required with translation services. The budget for this consultancy work would be approximately €4,500 (travel and per diems) plus the cost of hiring a training venue and local/international consultancy fees.

RODRIGUES – SEMPA ALTERNATIVE LIVELIHOODS PROJECT

The consultant was provided with a detailed alternative livelihoods action plan for the SEMPA. This plan details short, medium and long term programmes with a number of priority objectives and activities to achieve these objectives. Included in the short term programme (Priority Objective 1, Activity 2) the need for business management training referred to above). There may be some other short term priority objectives that the SmartFish Programme could also support – for example the development of business associations/co-operatives (Priority Objective 1, Activity 1).

In addition the consultant received a copy of a project proposal entitled: Supporting alternative livelihoods for the Fisher Communities in the South East Marine Protected Area through Ecotourism Development. This is a one-year demonstration project application that has already been submitted to the GEF for funding. The outcome of this application is unknown and needs follow-up. The total cost of the project is stated as MUR 1,667,455 (€43,537) of which the funding requested was MUR 1,360,455 (€35,521). As this project proposal is about diversification of the artisanal fishery, its timeframe is within that of the SmartFish Programme, and it could serve as a model for replication elsewhere in the region, the consultant recommends that if funding has not been allocated by GEF then the SmartFish Programme should consider funding it in its entirety.

The action plan and project proposal are attached separately as Appendix 2 and the executive summary from the proposal (equivalent to a PCN) included as Annex 4.6.

RODRIGUES – SECTOR PLANNING

As reported in the Value Chain Analysis (VCA) of Fisheries Sector of Rodrigues (2011, draft) referenced earlier, the fisheries sector is a major source of export earnings and in spite of efforts by the RRA, the development of off-lagoon and FAD fisheries has not achieved expected results. Conclusion from this report and brief field-work observations of the consultant strongly suggest that there is a need for some follow-up technical assistance from the VCA work to improve governance of and planning within the sector, addressing:

- The current prohibition on the use of the FADs by commercial fishing boats, whilst at the same time recreational fishing boats are permitted to sell their catch in direct competition with landings by the artisanal and offshore fleet
- The development needs of RGFC to support the IFAD funded fleet
- The future of RGFC as a government parastatal fishing operation (and the need for business planning as it is highly likely that it is a loss-making entity)
- The future funding and management of SEMPA (as a statutory body), which is of some concern given the end of UNDP/GEF funding in December 2011
- The development of mariculture activities (seaweed farming etc.) on the island
• Development needs of the fishing cooperatives, particularly related to their fleet of new offshore vessels and the need for the improved supply of inputs (ice and fishing gear in particular)

There is an apparent political will on the part of RRA to prepare a rational management and development plan for the fisheries sector (VCA of Fisheries Sector Report, 2011). The consultant would strongly endorse this initiative. Whilst it is considered beyond the scope of this consultancy to prepare detailed ToR for a governance (sector planning) intervention by the SmartFish Programme, the following structure for a strategic sector plan is proposed:49

Background (2-3 pages)
• Importance of the sector (contribution to the economy, employment etc.)
• Need for a strategy and relationship with national planning objectives
• Current fisheries policy and plans (and objectives/priorities of the RRA)
• Funding arrangements (as appropriate)

General description of the sector(5-10 pages)
• The marine fishery and state of the fleet
• Aquaculture/mariculture
• Processing/marketing and product supply chains
• Inland fisheries (if relevant)
• Fishing areas and competitiveness50
• Social and environmental issues
• MCS51 and data requirements

SWOT analysis of the sector and its development(2 pages)
• External analysis: description of opportunities and threats outside the sector
• Internal analysis: description of strengths and weaknesses within the sector

The strategy (10+ pages)
• Definitions, timescale and indicators
• Timing and sequencing of the strategy
• Vision, policy goals, objectives and activities
• Financial resources
• Implementation and monitoring of the plan

Various tables and annexes to the strategic plan will also be required. These include details on the characteristics of the national fleet, employment data and number of businesses by sub-sectors (sea fishing, aquaculture, processing and marketing) and where they are located on the island. Production data by volume and value should be collected and a classification made by area according to their level of dependency on the fisheries sector.

49 Such a report should be no longer than around 35 pages given the limited diversity of the fisheries sector on Rodrigues, be self-explanatory and concise.
50 Addressing issues such as the institutional structure of the sector, professional capacity of the sector, state of the ports and landing sites, modernisation plans, research and development and profitability.
51 Monitoring, control and surveillance.
CONCLUSIONS AND RECOMMENDATIONS

GENERAL CONCLUSIONS AND RECOMMENDATIONS

1. The state of the recreational fishery and aquatic related ecotourism industry is highly variable in the countries visited – from emerging in Pemba Island to highly developed (but in recent years under-utilised) in Lake Kariba. Ile Sainte Marie and Rodrigues Island both have well developed tourism industries, although many accommodation services on Ile Sainte Marie remain informal (especially on the Île aux Nattes). Both islands have potential for developing more marine/fisheries related ecotourism.

2. The consultant concludes that although the use of FADs is often problematic in countries that experience monsoonal weather, further research is needed to investigate the use of FADs (and artificial reefs) to potentially move artisanal fishing effort offshore and support recreational fisheries development. Both Pemba Island and Ile Sainte Marie are in need for FADs. Lessons can be learnt from existing FAD operations around Rodrigues Island, where this technology is well developed.

3. There is a general lack of readily available data (in-country) on the value of and participation in recreational fisheries and associated aquatic related eco-tourism activities. This is surprising in some countries given the value and importance of this industry e.g. the whale watching in Ile Sainte Marine (Madagascar) and Tiger fish sport fishery on Lake Kariba (Zimbabwe). The consultant recommends that further economic research on the value of these eco-tourism related industries is needed to help inform the policy decision making process and improve sector governance.

4. Comprehensive fisheries and environmental legislation rarely translates into effective management of the aquatic resources. Landings in the artisanal sector are generally in decline due to over-fishing with limited control in most countries visited. There is therefore need for fisheries MCS capacity building within the artisanal sector in all of the countries visited. Recommendations have been made in the report to support community based enforcement.

5. A common need within existing or planned ecotourism related activities/projects is the need for awareness-raising of environmental issues amongst the fisher communities. This is particularly the case when introducing new technology or techniques to fishing communities, such as the development of aquaculture (in the case of Lake Kariba) or introduction of FADs (Pemba and Ile Sainte Marie).

6. Women are reasonably well represented in the fisheries sector in Madagascar and Rodrigues but less well represented in Pemba and Lake Kariba (for cultural reasons). Future project interventions should be sensitive to this issue and the cultural norms that can be expected in each country.

7. There is limited readily available accurate data in each of the countries visited on the artisanal fisheries sector and sport fishery – more sector study type research is needed to improve development planning and governance issues. The recent VCA work completed on Rodrigues should be repeated elsewhere in the region.

8. There is limited capacity with the timeframe of the SmartFish Programme to initiate new projects in any of the case-study countries – emphasis is therefore on supporting existing projects or projects already conceived but not yet funded.

RECOMMENDATIONS – PROJECT SCOPING

9. Five project concept notes have been prepared (see Annex 4) and are recommended for funding:
   • A socio-economic project on Pemba Island (provisional budget €13,259)
   • Two EIAs for aquaculture projects on Lake Kariba (€10,086 and €5,827 respectively)
   • A sport fishery economic research project on Lake Kariba (€6,595)
   • An agro-tourism project on Ile Sainte Marie, which has potential to include marine eco-tourism related activities (€16,210)

10. Outline ToR have been prepared for an economic research consultancy focusing on the whale-watching industry around Ile Sainte Marie (28 person-days of input) and for a fisheries eco-tourism capacity building (business planning) input on Rodrigues Island (22 person-days of input).
11. The project concept for economic research on the Lake Kariba sport fishery could be broadened (subject to funding availability) and a VCA prepared incorporating the capture fisheries, sport and aquaculture sub-sectors. Alternatively, if external (international) assistance is advised to support the research on the economics of the sport fishery on Lake Kariba, this could be combined with the proposed valuation of the whale-watching industry (on Ile Sainte Marie) into one eco-tourism economics assignment focusing on two case-study countries.

12. A detailed alternative livelihoods action plan has been prepared for the SEMPA region on Rodrigues Island, together with a one-year alternative livelihoods project proposal submitted to GEF for funding (total project costs €43,537 of which the funding requested was €35,521). There are some short term priority objectives within this action plan that the SmartFish Programme could support.

13. As the proposed project focuses on diversification within the artisanal fishery, has a one-year timeframe and could act as a model for interventions elsewhere in the region, it is recommended that if this project has not yet been launched the SmartFish programme should consider funding it in its entirety.

14. There are several project concepts identified during this assignment with linkages to the MCS and governance components of the SmartFish Programme which the consultant recommends merit further investigation – in particular in relation to supporting research into the use of FADs (Pemba and Ile Sainte Marie), sector planning (Rodrigues) and community based MCS (Pemba).
### Background to assignment

The IRFS programme (SmartFish) was launched in February 2011 with the aim of contributing to an increased level of social, economic and environmental development and deeper regional integration in the ESA-IO region through the sustainable exploitation of fisheries resources. There are 19 beneficiary countries in the Programme which is financed by the EU under the 10th EDF within a total financial contribution of Euro 21 million. The programme is implemented by the Indian Ocean Commission (IOC) in collaboration with the Common Market for East and Southern Africa (COMESA), the East Africa Community (EAC) and the Inter-Governmental Authority on Development (IGAD). Other regional institutions are also involved including SADC, IOTC, SWIOFC, LVFO, and LTA. The first phase of the Programme will be implemented over a period of 31 months (End February 2011 - September 2013). The overall objective of the programme is to contribute to an increased level of social, economic and environmental development and deeper regional integration in the ESA-IO region through the sustainable exploitation of fisheries resources. The expected results and outcome of the programme falls into the following five categories: fisheries governance; fisheries management; monitoring, control and surveillance; regional fish trade and food security.

**This assignment**: under Result 4 (regional fish trade component) of the project.

The traditional focus on large international trading blocs has reduced efforts from developing a regional trade approach. Regional trade holds great potential for development and will be examined within this programme and integrated with strategic marketing plans at the regional and national level. Many national and regionally driven and oriented activities will develop objective requirements for achieving this goal.

A specific area of interest for the programme is to understand opportunities for **DIVERSIFICATION**, with a specific focus on the artisanal sector in the region. To this end an assessment is required to identify appropriate diversification opportunities for **focused areas** of four selected beneficiary countries and outline practical and sustainable areas where the SmartFish programme could support their implementation. Diversification (of an industry/ sector) is a strategic term that refers to new possibilities to expand options beyond existing capabilities and resources. It speaks to developing new markets (new customers) and new products (innovation). Market diversification at the regional and/or international level is of interest for this study from the perspective of individual countries as a focus but with regional relevance in terms of demonstrating and promoting practical opportunities throughout the region. The specific focus is for opportunities that link the artisanal sector with the tourism sector in regard to developing “eco-tourism” and/or “recreational fisheries”. The ultimate objective of the study is to provide detailed recommendations for opportunities that can be practically pursued at the artisanal level and where the SmartFish programme can then assist in piloting, training, promoting and enhancing these opportunities in selected areas.

### Issues to be addressed

The specific task is to: Prepare a Diversification Study in Zimbabwe (Kariba), Madagascar (Ile Sainte Marie), Tanzania, (Pemba Island); and Mauritius (Rodrigues) to look closely at opportunities in Recreational Fishing and/or Eco-Tourism, as they relate to the artisanal fisheries sector and diversification.

Expertise required in: Recreational fisheries & Eco-tourism / Artisanal Fisheries
<table>
<thead>
<tr>
<th>Activities of the Consultant</th>
<th>The expert shall perform the following tasks:</th>
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<tbody>
<tr>
<td></td>
<td>Background preparation to gather data to support the assignment;</td>
</tr>
<tr>
<td></td>
<td>Travel to Mauritius to discuss project with PMU and connect with project assistant for the project prior to field mission.</td>
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<tr>
<td></td>
<td>Visit the 4 locations and in each;</td>
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<td></td>
<td>Investigate and identify existing and potential operations (eco-tourism/ recreational fisheries) that demonstrate successful, sustainable potential for diversification opportunity that can link to artisanal fishing communities.</td>
</tr>
<tr>
<td></td>
<td>Identify and describe operating structures and “business model” that is appropriate for their on-going success /development.</td>
</tr>
<tr>
<td></td>
<td>Identify existing, established organizations, NGOs, or other suitable structures that could be contracted to support the operations with SmartFish small grant funding.</td>
</tr>
<tr>
<td></td>
<td>Define requirements for such contracts and develop terms of reference (ToR) and budget for such interventions.</td>
</tr>
<tr>
<td></td>
<td>Assess interest and commitment of such organizations to follow through with contracts to develop such opportunities.</td>
</tr>
<tr>
<td></td>
<td>Prepare a draft report from the mission that will provide the basis for SmartFish to immediately confirm the opportunity and prepare a contract for implementation of the contracts/projects if such opportunities exist. It is understood that appropriate opportunities may not exist in all of the four countries.</td>
</tr>
</tbody>
</table>

**Final Reporting**

Prepare a final report that develops the draft report into a final document following comments from stakeholders.

**Expected outputs**

The Expert shall produce a report demonstrating the work done, namely:

- **Final Report**
  
  The report to be produced using MS Word (and other MS Office software if necessary) and be available in hard copy and electronic form, both in Word (and other MS Office)

**Format of each report**

VARIOUS REPORT FORMATS TO BE AGREE WITH SUPERVISOR IN ADVANCE

Final Report to include:

- MS Word Styles for IRFS Programme Reports and Technical Papers
- Structure
- Title pages in model format as per other Programme Reports – to be supplied
- Table of contents, to three levels, formal format – to be agreed
- List of annexes if appropriate
- Tables of tables, figures and pictures all formal format
- Abbreviations and acronyms
- Layman’s summary (one paragraph encapsulating key elements that can be used in magazine/web i.e. not over technical)
- Executive Summary (1 to 2 pages), in English, and French
- Introduction
- Main body of report divided into different sections as appropriate, normally Context,

Conclusions and recommendations (each recommendation must be preceded by a conclusion, that refers to a discussion in the main body of the report)

- Annex 1 Terms of reference (if appropriate)
- Annex 2 Schedule and people met (with contacts)
- Annex 3 Aide Memoire (max. one page on execution of mission, findings, conclusions, and recommendations in bullet points)
- Any other annex(es) as appropriate
- Format as per PMU indications.

**Report to be reviewed by**

Chris Short, Key Expert for Trade Result
## Duration

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i)</td>
<td>Pre-trip preparation, research from home base</td>
<td>2</td>
</tr>
<tr>
<td>(ii)</td>
<td>Travel to Mauritius for pre-mission briefing with PMU</td>
<td>2</td>
</tr>
<tr>
<td>(iii)</td>
<td>Travel to 4 regional country and data collection /stakeholder meetings</td>
<td>26</td>
</tr>
<tr>
<td>(iv)</td>
<td>Return to Mauritius to discuss finding</td>
<td>2</td>
</tr>
<tr>
<td>(v)</td>
<td>Return to home base for preparation and submission of draft report</td>
<td>8</td>
</tr>
<tr>
<td>(vi)</td>
<td>Final report preparation after comments from PMU/Stakeholders</td>
<td>2</td>
</tr>
</tbody>
</table>

**Total 42**

Total input days: 42 working days (divided between 2 experts)

## Start date

<table>
<thead>
<tr>
<th>Start date</th>
<th>Approx:</th>
<th>Start ASAP</th>
</tr>
</thead>
</table>

## Completion dates for Reports and fee payment schedule

<table>
<thead>
<tr>
<th>Report Type</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Draft report</td>
<td>Whilst on Mission</td>
</tr>
<tr>
<td>Comments from PCM</td>
<td>Within 2 weeks after receipt of draft report</td>
</tr>
<tr>
<td>Final report</td>
<td>Within 1 week receipt of comments</td>
</tr>
</tbody>
</table>

## Experience and qualification

**Senior Experts**

Qualifications and skills:
- fluency in one of French or English and working knowledge of other
- Small scale fisheries /diversification specialist - Demonstrated experience with small-scale fisheries and business development / diversification within the sub-sector
- Eco-tourism / Recreational Fisheries – Demonstrated experience with eco-tourism and or Recreational Fisheries development
- Experience working with EU projects an advantage
- Ability to travel and work in ACP countries

## Locations and travel

Mauritius base + travel in region as required:

Travel from: (Home base) to Mauritius > 4 Regional countries > to (Home base)
# Annex 2: Schedule and People Met (With Contacts)

## 2011

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Location</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuesday 13 Dec</td>
<td>pm</td>
<td>Depart UK</td>
<td>International travel</td>
</tr>
<tr>
<td>Wednesday 14 Dec</td>
<td>am/pm</td>
<td>Arrive Zanzibar (via Nairobi &amp; Kilimanjaro)</td>
<td>Meet MCU coordinator</td>
</tr>
<tr>
<td></td>
<td>pm</td>
<td>Zanzibar</td>
<td>Background research and logistics (planned meetings with Dept. of Fisheries &amp; Marine Resources cancelled)</td>
</tr>
<tr>
<td>Thursday 15 Dec</td>
<td>am/pm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friday 16 Dec</td>
<td>am</td>
<td>Zanzibar to Pemba</td>
<td>Local travel (by plane)</td>
</tr>
<tr>
<td></td>
<td>am/pm</td>
<td>Pemba Island</td>
<td>Meet CFO, Pemba</td>
</tr>
<tr>
<td></td>
<td>pm</td>
<td></td>
<td>Meeting at Tourism Commission</td>
</tr>
<tr>
<td>Saturday 17 Dec</td>
<td>am/pm</td>
<td></td>
<td>Visit RasMkumbuu peninsula, Islamic cultural site and meet members of fishing community</td>
</tr>
<tr>
<td></td>
<td>pm</td>
<td></td>
<td>Tour of island</td>
</tr>
<tr>
<td>Sunday 18 Dec</td>
<td>am/pm</td>
<td></td>
<td>Dive at Manta Resort and meetings with manager to discuss ecotourism issues</td>
</tr>
<tr>
<td>Monday 19 Dec</td>
<td>am</td>
<td>Pemba to Zanzibar</td>
<td>Local travel (by plane)</td>
</tr>
<tr>
<td></td>
<td>am/pm</td>
<td></td>
<td>Meet EcoAfrica Environmental Consultants local representative</td>
</tr>
<tr>
<td></td>
<td>pm</td>
<td></td>
<td>Meet two staff members, Institute of Marine Science, University of Dar-es-Salaam</td>
</tr>
<tr>
<td>Tuesday 20 Dec</td>
<td>am</td>
<td></td>
<td>Meet MCU coordinator</td>
</tr>
<tr>
<td></td>
<td>am</td>
<td></td>
<td>Visit MACEMP office and meet two project staff</td>
</tr>
<tr>
<td></td>
<td>pm</td>
<td></td>
<td>Visit UN office – meet UNDP and FAO sub-office representatives</td>
</tr>
<tr>
<td></td>
<td>pm</td>
<td></td>
<td>Visit Tourism Commission</td>
</tr>
<tr>
<td>Wednesday 21 Dec</td>
<td>am</td>
<td>Depart Zanzibar</td>
<td>International travel</td>
</tr>
<tr>
<td></td>
<td>pm</td>
<td>Arrive UK (via Nairobi)</td>
<td></td>
</tr>
</tbody>
</table>

## 2012

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Location</th>
<th>Activities</th>
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</thead>
<tbody>
<tr>
<td>Monday 9 Jan</td>
<td>pm</td>
<td>Depart UK</td>
<td>International travel</td>
</tr>
<tr>
<td></td>
<td>am/pm</td>
<td>Arrive Harare (via Johannesburg)</td>
<td></td>
</tr>
<tr>
<td>Wednesday 11 Jan</td>
<td>pm</td>
<td>Harare</td>
<td>Meet counterpart (from fisheries unit) - organise logistics for mission</td>
</tr>
<tr>
<td></td>
<td>am</td>
<td>Harare</td>
<td>Meet Director, Division of Livestock &amp; Veterinary Services, Ministry of Agriculture and other members of SmartFish Programme local advisory panel (from MoA and University of Zimbabwe)</td>
</tr>
<tr>
<td></td>
<td>am/pm</td>
<td>Harare to Kariba</td>
<td>Local travel (by car)</td>
</tr>
<tr>
<td></td>
<td>pm</td>
<td>Chinhoyi</td>
<td>Provisional Head, Division of Livestock and Veterinary Services</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Karoi</td>
<td>Assistant District Livestock Specialist</td>
</tr>
<tr>
<td>Date</td>
<td>Time</td>
<td>Location</td>
<td>Activity</td>
</tr>
<tr>
<td>------------</td>
<td>-------</td>
<td>---------------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Thursday 12 Jan</td>
<td>am</td>
<td>Kariba Town</td>
<td>Senior Ecologist, Lake Kariba Fisheries Research Institute, Zimbabwe Parks and Wildlife Management Authority Meet two representatives from World Vision Director, University of Zimbabwe Lake Kariba Research Station</td>
</tr>
<tr>
<td></td>
<td>pm</td>
<td></td>
<td>Meet three officials from Lake Harvest. Tour of fishfarm hatchery</td>
</tr>
<tr>
<td>Friday 13 Jan</td>
<td>am</td>
<td>Lake Kariba</td>
<td>Organise logistics to undertake boat trip to other side of the lake (Gachegache fishing camp) Meet Chairman of Gachegache Fisheries Association</td>
</tr>
<tr>
<td></td>
<td>pm</td>
<td></td>
<td>Visit Lake Harvest fish cages (on the lake)</td>
</tr>
<tr>
<td>Saturday 14 Jan</td>
<td>am/pm</td>
<td>Kariba Town</td>
<td>Informal meeting with manager of Cutty Sark Hotel – discuss local ecotourism issues Meet managers of Kariba Information Centre, tour centre and visit local school</td>
</tr>
<tr>
<td></td>
<td>pm</td>
<td>Kariba to Harare</td>
<td>Local travel (by car)</td>
</tr>
<tr>
<td></td>
<td>pm</td>
<td>Harare</td>
<td>Meet World Vision Business Dev. Manager</td>
</tr>
<tr>
<td>Sunday 15 Jan</td>
<td>am</td>
<td>Depart Harare</td>
<td>International travel</td>
</tr>
<tr>
<td></td>
<td>pm</td>
<td></td>
<td>Arrive Mauritius (via Johannesburg)</td>
</tr>
<tr>
<td>Monday 16 Jan</td>
<td>am</td>
<td>Mauritius</td>
<td>Report writing</td>
</tr>
<tr>
<td></td>
<td>pm</td>
<td></td>
<td>Report writing and meet project team</td>
</tr>
<tr>
<td>Tuesday 17 Jan</td>
<td>am/pm</td>
<td></td>
<td>Report writing and prepare for Madagascar fieldwork</td>
</tr>
<tr>
<td>Wednesday 18 Jan</td>
<td>am</td>
<td>Depart Mauritius</td>
<td>International travel</td>
</tr>
<tr>
<td></td>
<td>pm</td>
<td></td>
<td>Arrive Île Sainte-Marie (Nosy Bohara), Madagascar (via La Reunion Island and Toamasina) International and local travel (by plane)</td>
</tr>
<tr>
<td>Thursday 19 Jan</td>
<td>am</td>
<td>Île Sainte-Marie</td>
<td>Meet CFO</td>
</tr>
<tr>
<td></td>
<td>am</td>
<td></td>
<td>Visit Tourism Office</td>
</tr>
<tr>
<td></td>
<td>am</td>
<td></td>
<td>Visit CétaMada (local whale watching and marine conservation NGO)</td>
</tr>
<tr>
<td></td>
<td>pm</td>
<td></td>
<td>Meet owner – Hotel Libertalia (and Treasurer, CétaMada)</td>
</tr>
<tr>
<td>Friday 20 Jan</td>
<td>am</td>
<td>Île aux Nattes, Île Sainte-Marie</td>
<td>Meeting with CFO, President of “AM” association + 15 members of “AM” association/Village elders</td>
</tr>
<tr>
<td></td>
<td>pm</td>
<td>Île Sainte-Marie</td>
<td>Meet President, CétaMada</td>
</tr>
<tr>
<td>Saturday 21 Jan</td>
<td>am</td>
<td>Île Sainte-Marie</td>
<td>Visit SPSM (meeting cancelled)</td>
</tr>
<tr>
<td></td>
<td>pm</td>
<td></td>
<td>Meet Regional Director of Tourism</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Meet Chairman, SPSM</td>
</tr>
<tr>
<td>Sunday 22 Jan</td>
<td>am</td>
<td></td>
<td>Visit to St Joseph’s village association (VOI) ecotourism project site with Director of Tourism. Meet three VOI committee members</td>
</tr>
<tr>
<td></td>
<td>pm</td>
<td></td>
<td>Report writing</td>
</tr>
</tbody>
</table>
### Annex 2: Schedule And People Met (With Contacts)

#### Monday 23 Jan
- **am**: Depart Île Sainte-Marie
- **pm**: Arrive Mauritius (via Antananarivo)
- **pm**: Mauritius
  - International travel

#### Tuesday 24 Jan
- **am**: Depart Mauritius
  - Depart Mauritius
  - Arrive Rodrigues
- **pm**: Port Mathurin
  - Local travel (by plane) and organise local logistics (plus car hire)
  - Meet Discovery Rodrigues and organise meetings

#### Wednesday 25 Jan
- **am**: Port Mathurin
  - Meet RRA Chief Commissioner and Officer in Charge, Economic Planning & Management Unit
  - Meet Chief, Tourism Office
  - Meet Officer-in-Charge, FRTU
  - Meet General Manager, RGFC
- **pm**: Port Sud-Est
  - Meet Project Manager, SEMPA
  - Meet Commission of Cooperatives and six fishers from three fishing cooperatives
  - Report writing

#### Thursday 26 Jan
- **am**: Port Sud-Est
  - Meet Project Manager, SEMPA
- **pm**: Port Mathurin
  - Meet Commission of Cooperatives and six fishers from three fishing cooperatives
  - Report writing

#### Friday 27 Jan
- **am/pm**: Port Sud-Est
  - Report writing (meeting with local ecotourism group cancelled)

#### Saturday 28 Jan
- **am**: Port Sud-Est
  - Report writing (visit to seaweed farming site cancelled)
- **pm**: Depart Rodrigues
  - Arrive Mauritius
  - Local travel (by plane)

#### Sunday 29 Jan
- **am**: Mauritius
  - Dive at Black River Bay
- **pm**: Report writing

#### Monday 30 Jan
- **am**: Report writing/ecotourism trip
- **pm**: Visit project office

#### Tuesday 31 Jan
- **am**: Report writing
- **pm**: Depart Mauritius
  - International travel

#### Wednesday 1 Feb
- **am**: Arrive UK (via Johannesburg)

### CONTACTS BY E-MAIL

<table>
<thead>
<tr>
<th>NAME</th>
<th>POSITION</th>
<th>E-MAIL ADDRESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr Francois Odendal</td>
<td>Director, EcoAfrica Environmental Consultants (based in Cape Town, South Africa)</td>
<td><a href="mailto:Francois@ecoafrica.co.za">Francois@ecoafrica.co.za</a></td>
</tr>
<tr>
<td>Mr Richard Ndou</td>
<td>Food Security and Livelihoods Manager, World Vision Zimbabwe (based in Bulawayo)</td>
<td><a href="mailto:Richard_ndou@wvi.org">Richard_ndou@wvi.org</a></td>
</tr>
<tr>
<td>Mr Isaac Chingohozo</td>
<td>Management Consultant – Environmental Assessment</td>
<td><a href="mailto:isaacchi@enilaw.co.zw">isaacchi@enilaw.co.zw</a></td>
</tr>
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### ZANZIBAR/PEMBA

<table>
<thead>
<tr>
<th>NAME</th>
<th>POSITION</th>
<th>E-MAIL ADDRESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr Omar Hakim Foun</td>
<td>Marine Conservation Unit (MCU) Coordinator, Department of Fisheries &amp; Marine Resources</td>
<td><a href="mailto:omar.hf@mcu.go.tz">omar.hf@mcu.go.tz</a></td>
</tr>
<tr>
<td>Ms Frida Lanshammar</td>
<td>EcoAfrica Environmental Consultants – former local representative (no longer employed by EcoAfrica)</td>
<td><a href="mailto:frida_lanshammar@hotmail.com">frida_lanshammar@hotmail.com</a></td>
</tr>
<tr>
<td>Name</td>
<td>Position</td>
<td>Email</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>Mr Mwita Mangora</td>
<td>Lecturers, Institute of Marine Sciences, University of Dar-es-Salaam</td>
<td><a href="mailto:mangora@ims.udsm.ac.tz">mangora@ims.udsm.ac.tz</a> or <a href="mailto:mman-gora@yahoo.com">mman-gora@yahoo.com</a></td>
</tr>
<tr>
<td>Ms Mwanahija Shali</td>
<td></td>
<td><a href="mailto:shall@ims.udsm.ac.tz">shall@ims.udsm.ac.tz</a> or <a href="mailto:shalli70@yahoo.co.uk">shalli70@yahoo.co.uk</a></td>
</tr>
<tr>
<td>Mr Sharif Mohamed</td>
<td>Chief Fisheries Officer, Pemba Island (and PECCA Manager)</td>
<td><a href="mailto:msharif2ma@yahoo.com">msharif2ma@yahoo.com</a></td>
</tr>
<tr>
<td>Mr Suleiman A Suleiman</td>
<td>Officer in Charge, Commission for Tourism, Pemba Island</td>
<td></td>
</tr>
<tr>
<td>Mr Ismal S Salein</td>
<td>Tourism Officer, Commission for Tourism, Pemba Island</td>
<td></td>
</tr>
<tr>
<td>Juma/Sandy</td>
<td>General Manager/Assistant Manager, The Manta Resort, Pemba Island</td>
<td><a href="mailto:gm@themantaresort.com">gm@themantaresort.com</a></td>
</tr>
<tr>
<td>Mr Ali Hassan Kombo</td>
<td>Administrative Assistant, MACEMP, Zanzibar</td>
<td></td>
</tr>
<tr>
<td>Mr Mohamed Mtmaika</td>
<td>Accountant, MACEMP, Zanzibar</td>
<td></td>
</tr>
<tr>
<td>Ms Njeri Kamau</td>
<td>Governance &amp; Human Rights Analyst, UNDP Sub-Office, Zanzibar</td>
<td><a href="mailto:Njeri.kamau@undp.org">Njeri.kamau@undp.org</a></td>
</tr>
<tr>
<td>Mr Ali Haji Ramadhan</td>
<td>National Coordinator, FAO of the UN Sub-Office, Zanzibar</td>
<td><a href="mailto:AliHaji.Ramadhan@fao.org">AliHaji.Ramadhan@fao.org</a></td>
</tr>
<tr>
<td>Mr Bothwell Makodza</td>
<td>Director, Department of Livestock Production &amp; Development, Harare</td>
<td><a href="mailto:bmakodza@rocketmail.com">bmakodza@rocketmail.com</a></td>
</tr>
<tr>
<td>Mr Misheck Ngoshi</td>
<td>Principal Fisheries and Aquaculture Extension Specialist, Harare</td>
<td><a href="mailto:Misheck.ngoshi@yahoo.com">Misheck.ngoshi@yahoo.com</a></td>
</tr>
<tr>
<td>Dr Maxwell Barson &amp; Dr Tamuka Nhiwatiwa</td>
<td>University of Zimbabwe, Harare</td>
<td></td>
</tr>
<tr>
<td>Mr Admire Mbundure, Ms Rutendo Nyahoda, Mr Gahadzikwa Passmore and Mr Clinton Kapembeza</td>
<td>Department of Livestock Production &amp; Development, Harare</td>
<td></td>
</tr>
<tr>
<td>Ms Nobuhle Ndhlovu</td>
<td>Senior Ecologist, Lake Kariba Fisheries Research Institute, Zimbabwe Parks and Wildlife Management Authority</td>
<td><a href="mailto:nobuhle07@yahoo.com">nobuhle07@yahoo.com</a></td>
</tr>
<tr>
<td>Mr Terrence Tigere</td>
<td>Business development Manager, World Vision, Harare</td>
<td><a href="mailto:Terrence_tigere@wvi.org">Terrence_tigere@wvi.org</a></td>
</tr>
<tr>
<td>Mr Watson Pasipamire</td>
<td>Lake Harvest Operation Manager, Kariba</td>
<td><a href="mailto:Watson@lakeharvest.com">Watson@lakeharvest.com</a></td>
</tr>
<tr>
<td>Kennedy and Lincton</td>
<td>National Park Rangers, Lake Kariba</td>
<td></td>
</tr>
<tr>
<td>Dr Morris Mtsambiwa</td>
<td>Scientific Director, University Lake Kariba Research Station</td>
<td><a href="mailto:mzmtsambiwa@gmail.com">mzmtsambiwa@gmail.com</a></td>
</tr>
<tr>
<td>Ms Carol Bird</td>
<td>Manageress, Cutty Sark Hotel, Kariba</td>
<td><a href="mailto:manager@cuttysarkhotel.com">manager@cuttysarkhotel.com</a></td>
</tr>
</tbody>
</table>

**ZIMBABWE**

**MADAGASCAR**

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr Delphin Tsimania</td>
<td>Chief Fisheries Officer, District of Sainte-Marie, Ministry of Fisheries &amp; Marine Resources</td>
<td><a href="mailto:tsimadelphin@yahoo.fr">tsimadelphin@yahoo.fr</a></td>
</tr>
<tr>
<td>Mr Imboule Julot</td>
<td>Coordinator, CétaMada</td>
<td><a href="mailto:Julot@cetamada.com">Julot@cetamada.com</a></td>
</tr>
<tr>
<td>Mr Didier Cabocel</td>
<td>Owner, Hotel Libertalia (and Treasurer, CétaMada)</td>
<td><a href="mailto:reservation@ielibertalia.com">reservation@ielibertalia.com</a></td>
</tr>
<tr>
<td>Mr Christian Dadare</td>
<td>President, Agnitibe Mihitsika association, Île aux Nattes</td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>Position/Contact Details</td>
<td></td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-----------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Mr Maurice Timelle</td>
<td>Village Chief, Île aux Nattes (plus 13 local fishers/village elders)</td>
<td></td>
</tr>
<tr>
<td>Mr Henry Bellon</td>
<td>President, CétaMada</td>
<td></td>
</tr>
<tr>
<td>Madame Ony</td>
<td>Regional Director of Tourism</td>
<td></td>
</tr>
<tr>
<td>Mr Jean Marc Berquer</td>
<td>Chairman, SPSM (SocietePeche Sainte-Marie)</td>
<td></td>
</tr>
<tr>
<td>RODRIGUES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mr Gaetan Jabeemissar</td>
<td>Chief Commissioner, RRA, Port Mauthuin (PM)</td>
<td></td>
</tr>
<tr>
<td>Mr Moustaphe Jeetoo</td>
<td>Officer-in-Charge, Economic Planning &amp; Management Unit, RRA, PM</td>
<td></td>
</tr>
<tr>
<td>Mr Jimmy Didier Mercure</td>
<td>Chief, Rodrigues Tourism Office, PM</td>
<td></td>
</tr>
<tr>
<td>Ms Ingrid Hung</td>
<td>Manager, Discovery Rodrigues Co Ltd, PM</td>
<td></td>
</tr>
<tr>
<td>Mr Sylvio Perrine</td>
<td>Officer-in-Charge, Fisheries Research and Training Unit, PM</td>
<td></td>
</tr>
<tr>
<td>Mr Edward Darkensen</td>
<td>General Manager, Rodrigues General Fishing Company, PM</td>
<td></td>
</tr>
<tr>
<td>Mr Jean Rex Pierre Louis</td>
<td>Project Manager, SEMPA</td>
<td></td>
</tr>
<tr>
<td>Ms Marie Menrier</td>
<td>Senior Cooperatives Officer, Commission of Cooperatives, PM</td>
<td></td>
</tr>
<tr>
<td>Mr Joseph Laval &amp; Mrs Marie Emilien</td>
<td>Angel Fishing Cooperative, PM</td>
<td></td>
</tr>
<tr>
<td>Mr Jean Volbert</td>
<td>Flying Fish Cooperative, PM</td>
<td></td>
</tr>
<tr>
<td>Mr Paul Emilien, Mr Jean Emilien &amp; Ms Felicite Stephenson</td>
<td>Fregate Fishing Cooperative, PM</td>
<td></td>
</tr>
</tbody>
</table>
# ANNEX 3: AIDE MEMOIRE

## Implementation of a Regional Fisheries Strategy – ESA-IO

### Aide Memoire

### Diversification Study

(eco-tourism/recreational fisheries)

| Simon Diffey, Income Diversification, Eco-tourism & Recreational Fisheries Specialist |
| Chris Short, Trade Coordinator |

### Introduction

This Aide Memoire summarises the results from a four country programme of field work completed in December 2011 (Pemba Island, Zanzibar) and January 2012 (Lake Kariba, Zimbabwe, Ile Sainte Marie, Madagascar and Rodrigues Island, Mauritius). The consultant made two brief visits to Mauritius in January 2012 either side of case-study country visits.

The purpose of this mission was to prepare a diversification study for the four case-study countries to look closely at opportunities in recreational fishing and/or eco-tourism, as they relate to the artisanal fisheries sector and diversification; essentially a project scoping exercise. The consultant was encouraged to identify and recommend possible projects for funding that: (a) had potential for replication elsewhere within the IRFS countries and (b) supported linkages with the other components of the IRFS programme.

### Itinerary and persons met

The visit to Pemba Island/Zanzibar took place between the 14th and 21st December 2011. The consultant met with the Marine Conservation Unit (MCU) Coordinator who facilitated meetings (at the end of the mission) on Zanzibar with the local UN office and a GEF funded fisheries project office. The consultant spent four days on Pemba Island and was supported by the Chief Fisheries Officer. He visited the Tourism Commission, an island resort and RasMkumbuu, a peninsula with several disadvantaged fishing communities (and where there are important Islamic archaeological sites). The consultant also met with the authors of a (as yet unfunded) development project proposal for these communities on Pemba.

The visit to Lake Kariba, Zimbabwe took place between the 10th and 15th January 2012. The consultant was accompanied throughout his mission by a Fisheries Extension Officer. In Harare the consultant met with the Director, Division of Livestock and Veterinary Services (fisheries is a unit within this department) plus several other interested officials from the MoA and University of Zimbabwe. Meetings were held in Karibawith various ‘National Parks’ officers, Lake Harvest (tilapia aquaculture business), representatives from an NGO soon to be involved in supporting alternative fisheries livelihoods, the chairman of a fishing community and the managers of the Kariba Information Centre.

The visit to Ile Sainte Marie, Madagascar took place between the 19th and 23rd January 2012. The consultant was accompanied by a Fisheries Economist from SmartFish. Meetings were held with the Chief Fisheries Officer, Director of Tourism, the local commercial fishing company, several local tourism operators and officials from a local whale-watching/marine conservation NGO(CetaMada). Site visits were made to an existing MPA and proposed location for a ecotourism project and discussions held with various fisher representatives/village elders.

The visit to Rodrigues Island took place between 24th and 28th January 2012. The consultant was accompanied by a Fisheries Economist from SmartFish. Meetings were held with the RRA Commissioner, the fisheries training/research centre, government fishing company, three fishermen’s cooperatives local marine conservation tourism company and a UNDP/GEF marine conservation project (SEMPA). The consultant had hoped to meet with local eco-tourism operators but this was not possible.
General findings and recommendations

15. The state of the recreational fishery and aquatic related ecotourism industry is highly variable in the countries visited – from emerging in Pemba Island to highly developed in Kariba and Ile Sainte Marie

16. In two of the three countries visited with marine fisheries there is a need for FADs to move fishing effort offshore. Lessons can be learnt from existing FADC operations around Rodrigues Island

17. There is a general lack of readily available data (in-country) on the value of and participation in recreational fisheries and associated aquatic related eco-tourism activities. This is surprising in some countries given the value and importance of this industry e.g. the whale watching in Ile Sainte Marie (Madagascar) and Tiger fish sport fishery on Lake Kariba (Zimbabwe)

18. Comprehensive fisheries and environmental legislation rarely translates into effective management of the aquatic resources. Landings in the artisanal sector are generally in decline due to over-fishing with limited control in most countries visited. There is therefore need for fisheries MCS capacity building within the artisanal sector in all of the countries visited

19. A common need within existing or planned ecotourism related activities/projects is the need for awareness raising of environmental issues amongst the fisher communities

20. Women are reasonably well represented in the fisheries sector in Madagascar and Rodrigues but less well represented in Pemba and Lake Kariba (for cultural reasons)

21. There is limited readily available data in country on both the artisanal fisheries sector and sport fishery – more sector study type research is needed to improve development planning and governance issues

22. There is almost no capacity with the timeframe of the SmartFish Programme to initiate new projects in any of the case-study countries – emphasis is on supporting existing projects or projects already conceived but not yet funded

Project identification (conclusions)

• Three project concept notes are under preparation – one for an income diversification related project in Zimbabwe and two fisheries research related projects (one on Lake Kariba and one on Pemba)
• One potential eco-tourism related project has been identified for funding in Madagascar (Ile Sainte Marie) and is awaiting translation of documentation and further details
• There are some existing (on-going) recreational fisheries/eco-tourism related activities on Rodrigues Island in need of capacity-building support – a project concept note will be prepared to address this need
• There are several project concepts with linkages to the MCS and governance components of SmartFish which will presented in the draft report but which may require further scoping
• The consultant aims to present the draft report by the end of February, subject to receipt of further data from some of the countries
ANNEX 4: PROJECT CONCEPT NOTES

ANNEX 4.1: SOCIO-ECONOMIC BASELINE SURVEY FOR WESHA AND NDAGONI COMMUNITIES, RAS MKUMBUU, PEMBA

Prepared with support from Mwita M. Mangora and Mwanahija S. Shali
Institute of Marine Sciences, University of Dar es Salaam
PO Box 668, Mizingani Rd., Zanzibar, Tanzania

Aim
The aim of the project is to gather, analyse and document socio-economic baseline information on livelihoods, environment, education, health and sanitation of two communities in Ras Mkumbuu, Pemba in Tanzania.

Background and key issues to be addressed
Natural resources provide services on which all human activity depends. For coastal rural communities, this includes not only fisheries, but also agriculture and forestry. These natural resource amenities and goods represent important and familiar components of rural economy. Despite the close inter-linkages between resource conservation and poverty reduction, there is however still a considerable polarization between conservation and development particularly where communities largely depend on the natural capital for their welfare. Unfortunately, what has been less appreciated until recently is the fact that natural ecosystems perform fundamental life-support services without which human civilizations would cease to thrive.

It is from this recognition that the Agulhas and Somali Current Large Marine Ecosystem Project (ASCLME, www.asclme.org), through its regional DLIST ASCLME Project (www.dlist-asclme.org) under the EcoAfrica Consulting firm had attempted to propose the construction of a Multi-Purpose Resource Centre (MPRC) for the two neighbouring communities of Wesha and Ndagoni in Ras Mkumbuu on the island of Pemba, in Tanzania. With reference to the DLIST ASCLME project, these two communities were together identified to form one of the two project’s demonstration sites for Tanzania in an effort to extend technical support for development and implementation of local economic development plans. With that development, a need for conducting a comprehensive socio-economic, environmental and health baseline survey had been identified as a crucial step to solicit key livelihoods, environmental and developmental indicators in line with the Millennium Development Goals (MDGs).

These would include poverty and livelihood occupations, education, health, water and sanitation, and a variant of environmental and natural resource use and management for both land and sea based issues. The wholesome of the survey will be to establish the welfare profiles of the two communities of Wesha and Ndagoni which will serve as indicative reference for the subsequent monitoring and impact assessment in the future upon realization of the MPRC project and related socio-economic adjustments.

Project rationale
The need for establishing community socio-economic profiles towards development interventions needs no overemphasis. It is a prerequisite for an effective monitoring and evaluation (M&E) of change and therefore the proposed survey will serve that purpose for Wesha and Ndagoni communities in the wake of realizing an operational MPRC. Advantageously, data from this survey will benefit any other development interventions as they may be revealed over time from both the government and other non-governmental practitioners.

Project goal
To conduct the socio-economic baseline survey for the purpose of effective M&E of the proposed intervention (MPRC) aimed at boosting local community economy while conserving their natural resources.
Project objective
To conduct a socio-economic baseline survey for Wesha and Ndagoni communities in preparation for development of the Multi-Purpose Resource Centre (MPRC).

Project outputs
- An analytical report documenting socio-economic profiles of Wesha and Ndagoni communities.
- An indicative socio-economic M&E plan depicting key drivers of change and indicators of assessment for future rapid appraisals and adaptive management for a wider perspective of developmental project interventions from various practitioners.

Project activities
A triangulation approach will be used to carry out the survey that will gauge information to produce the identified described above. Specific activities will include:

- Administration of household questionnaires to at least 30 representative households (randomly selected) from each of the two communities of Wesha and Ndagoni.
- Conduct key informant interviews with respective Shehas, two influential elders from each community, responsible district officers and operating NGOs/programmes for fisheries and other natural resources management, agriculture, education, health and sanitation.
- Analysis and interpretation of gathered data and report writing.

Project inputs
- Two experts - 26 days each
- One local assistant for community familiarization in Pemba – 12 days
- One research assistant for data entry – 10 days

Key indicators of achievement
- An analytical activity report produced and shared with the two communities and other relevant local authorities
- An indicative M&E plan produced

Assumptions
- Funds for MPRC construction for RasMkumbuu communities will be solicited, secured and construction effected.
- Other socio-economic development partners will emerge to support the communities.
- Field conditions will allow to carry out the survey

Timetable
A total of 36 workdays (62 man-days) will be required to accomplish the survey and related reporting as outlined below upon approval of this proposal, contract formalization and availability of funds:

<table>
<thead>
<tr>
<th>Day</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1-8</td>
<td>Household questionnaire interviews</td>
</tr>
<tr>
<td>Day 9-10</td>
<td>Key informant interview with 2 community elders for each community</td>
</tr>
<tr>
<td>Day 11</td>
<td>Key informant interview with 3 selected District Officers</td>
</tr>
<tr>
<td>Day 12</td>
<td>Key informant interview with 3 selected NGOs/Programme Officers</td>
</tr>
<tr>
<td>Day 13-22</td>
<td>Household questionnaire and key informant interview data entry</td>
</tr>
<tr>
<td>Day 23-26</td>
<td>Data analysis</td>
</tr>
</tbody>
</table>
### SmartFish Programme Report SF/2012/17

<table>
<thead>
<tr>
<th>Budget item description</th>
<th>Amount (US$)</th>
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</thead>
<tbody>
<tr>
<td>Expert fees (2 experts @ 26 man-days at US$250/2 per man-day)</td>
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<tr>
<td>Field costs</td>
<td></td>
</tr>
<tr>
<td>Return air fare (2 experts from Unguja to Pemba)</td>
<td>250</td>
</tr>
<tr>
<td>Per diem (2 experts @ 12 days x US$80 per day)</td>
<td>1920</td>
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<tr>
<td>Field transport for 12 field days @ US$80 per day</td>
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</tr>
<tr>
<td>Local field assistant (1 x 12 field days @ US$30 per day)</td>
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</tr>
<tr>
<td>Assistant for data entry (1 x 10 days @ US$30 per day)</td>
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</tr>
<tr>
<td>Stationery and secretarial services</td>
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<tr>
<td>Communication</td>
<td>100</td>
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<td><strong>TOTAL (€)</strong></td>
<td><strong>13,259</strong></td>
</tr>
</tbody>
</table>

**Annex 4.2: Environmental Impact Assessment for World Vision Project**

Prepared with support from Mr. Richard Ndou, Food Security and Livelihoods Manager, World Vision, Bulawayo, Zimbabwe

**Project Purpose**

To undertake an environmental impact assessment (EIA) of the World Vision fisheries programme to be implemented in Lake Kariba, Sanyati Basin. The key objectives of the EIA are to:

- Document the ecological and socioeconomic baseline conditions of the study area and the affected communities;
- Inform and obtain input from stakeholders, (e.g., governmental authorities, the public, and indigenous communities) and capture their relevant issues and concerns;
- Assess in detail the environmental, social, and health impacts that would result from the Project;
- Identify environmental and social mitigation measures to address the impacts identified;
- Meet the requirements or recommendations of the applicable national and regional regulations and standards;

**Background and Key Issues to be Addressed**

The aim of the World Vision Protracted Relief Programme (PRP) Phase II (Year 4) is to improve household food security, dietary diversity, income levels and access to clean safe water, sanitation and hygiene for labour-endowed households (HHs) in Kariba, Insiza, and Matobo rural districts through high-value agricultural production, efficient and effective establishment of market linkages, and provision of social transfers. This will help achieve the goal of protecting and promoting the livelihoods of the poor and vulnerable through targeting key HHs within communities with sufficient labour to engage in production at the quantity, quality and consistency required by private sector buyers. This will generate a communal multiplier effect resulting in positive externalities for vulnerable HHs through rejuvenation of local markets. Specifically looking at the small scale fishers in Kariba, which is the focus of this proposal, WV will act as a catalyst to bridge the gap between smallholder fishers and high potential markets, providing households with essential inputs on a cost recovery basis. Key risks will be mitigated through detailed preparation, rigorous monitoring and close collaboration with local authorities and beneficiaries.

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52 These are the rates proposed by the identified consultants to undertake this work and do not reflect any assessment by the author of this report of local market rates.

53 The same argument applies to the stated per diem rates; this may not be consistent with IOC rates.

54 Due to be completed in September 2012 but additional funding is being sought.
The greater percentage of the funding has been received from the UK government DFID. However, funding is being sourced through this proposal to undertake an Environmental Impact Assessment for the activities that will be carried out in Lake Kariba Sanyati Basin.

It has been noted that small-scale fisheries are an important source of nutrition, employment and income for many of the rural poor in the country. They play an important role in terms of food security and poverty alleviation (Millennium Development Goal, MDG 1). However, there have been noted effects that small scale fishing activities may have on the environment in the short term period and also long term. The end product of the assessment is an in depth report that will highlight and inform World Vision and all other relevant stakeholders of the potential impact that the project will have on the environment.

Through the delivery of technical assistance and the provision of inputs it is anticipated that the production capacity of 100 targeted small scale fishers will be greatly improved. The possibilities to export freshwater fish from Lake Kariba exist if proper marketing structure and infrastructure development are put in place with the assistance and linkages with the private sector especially for small scale fishers. The organisation of the fishers into groups through the project will provide a platform for collective fishing and joint marketing of fish to the local market and eventually to the regional markets. It is also envisaged that with an improved production level, the targeted small scale fishers will be able to generate enough income to sustain their livelihoods and improve their food security.

Project rationale
The Environmental Impact Assessment will be prepared in accordance with the requirements prescribed under the Government of Zimbabwe EIA policy and any other environmental legislation which may apply to the Project. The EIA report will form part of the required documentation for approval by the Environmental Management Agency of Zimbabwe before actual implementation of fisheries project activities in Lake Kariba.

The EIA report will assist World Vision, the project beneficiaries, public and government in understanding the environmental and socioeconomic consequences of the project’s development and operation. The EIA will address:

- Project impact, including cumulative effects and present predictions in terms of direction, magnitude, frequency, duration, seasonal timing, reversibility, geographic extent and uncertainty;
- Mitigation options;
- Residual or other effects relevant to the assessment of the project

The EIA will discuss possible measures, including established measures and possible improvements based on research and development to:

- Prevent or mitigate impacts;
- Assist in the monitoring of environmental protection measures;
- Identify environmental impacts and their significance including cumulative and regional development considerations; and
- Include tables that cross-reference the report (subsections) to the EIA ToR

Project objective
The objective of the EIA is to document the ecological, environmental and socioeconomic baseline conditions of the study area and the affected communities in order to support implementation of the project activities.

Project outputs
1. Initial scoping/description of the project impact completed
2. Environmental impact assessment field work, consultation and report completed
Project activities
Standard environmental impact assessment techniques will be used including site reconnaissance, literature review, desk research, field work, data analysis and interviews with appropriate personnel, in order to satisfy the Terms of Reference.
The following tasks need to be performed:

1.1 Description of the Proposed Project
This will involve a full description of the project and its existing setting, using maps as appropriate. This is to include general layout, size, location, physical characteristics, biological environment and socio-cultural setting.

1.2 Description of the Environment.
Assemble, evaluate and present data on relevant characteristics of the study area.

1.3 Legislative and Regulatory Considerations.
A description should be given of the pertinent regulations, standards and regulatory bodies governing environmental quality, health and safety, protection of endangered species, parks and protected areas, siting and land use control.

2.1 Determination of Potential Impacts of the proposed project.
Impacts will be determined as significant positive or negative, direct or indirect, short-term or long-term, unavoidable or irreversible. The proposed development will also be highlighted. Special emphasis will be placed on: ecological effects of tilapia farming in Lake Kariba through the project and water management

2.2 Mitigation and Management of Negative Impacts.
Recommendations will be made for feasible and cost-effective measures to prevent or reduce significant negative impacts to acceptable levels.

2.3 Recommendations for the development of a monitoring and mitigation plan.
Recommendations will be made for the development of a plan to ensure implementation of the mitigation measures and long-term minimization of negative environmental impacts.

Project inputs
It is proposed that a four-person team comprising of a lead consultant and three research assistants be contracted for the purposes of undertaking the Environmental Impact Assessment.

Key indicators of achievement
• Checking in of field personnel on project site
• Minutes of meetings with stakeholders
• Draft EIA report
• Final EIA report

Assumptions
• Weather conditions remain favourable for field-work
• Consultants are able to collect and interpret data collected

Timetable

<table>
<thead>
<tr>
<th>Activity</th>
<th>Month 1</th>
<th>Month 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Week</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>1. EIA identification of consultant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. EIA drafting of prospectus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Interviews &amp; public consultations</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The timeline plan below is a tentative overview of the activities that will be undertaken for the environmental impact assessment for the fisheries component of the Protracted Relief Program (PRP) for which funds are being sourced for.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Input (person days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Meet with representatives of the client to obtain additional information and for de-briefing on the EIA report</td>
<td>1 day</td>
</tr>
<tr>
<td>2. Preparation of prospectus</td>
<td>2 days</td>
</tr>
<tr>
<td>3. Review relevant background information - existing information, documents, relevant national legislature, published papers, etc.</td>
<td>5 days</td>
</tr>
<tr>
<td>4. Public involvement/consultations (discussions with key stakeholders – government departments and local community members)</td>
<td>8 days</td>
</tr>
<tr>
<td>5. Site visit to project site to collect data and do some ground truthing/Sanyati basin surroundings</td>
<td>2 days</td>
</tr>
<tr>
<td>6. Preparation of draft report &amp; presentation</td>
<td>9 days</td>
</tr>
<tr>
<td>7. Presentation of draft EIA</td>
<td>1 day</td>
</tr>
<tr>
<td>8. Preparation of final report</td>
<td>2 days</td>
</tr>
<tr>
<td><strong>TOTAL NUMBER OF MAN DAYS</strong></td>
<td><strong>30 person days</strong></td>
</tr>
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</table>

Provisional budget

<table>
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<td>Consultancy fees for 30 person-days @ US$350/ day</td>
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<tr>
<td>Accommodation for 4 persons for 5 days @ US$100/day</td>
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<tr>
<td>Transport costs (lump-sum)</td>
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</tr>
<tr>
<td><strong>TOTAL (€)</strong></td>
<td><strong>10,086.00</strong></td>
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</tbody>
</table>

ANNEX 4.3: ENVIRONMENTAL IMPACT ASSESSMENT FOR DEEP-WATERS PROJECT

Prepared with support from ENILAW (Private) Limited, 4th Floor Temple Bar House, 39 Nelson Mandela Avenue, P O. Box CY992, Causeway, Harare, Zimbabwe

Aim

Deep-waters Fish Growers Private Limited is proposing to implement an aquaculture project in Sanyati Basin, Lake Kariba. An Environmental Impact Assessment (EIA) is required in line with the requirements of the Environmental Management Act (Chapter 20:27) and Statutory Instrument 7 of 2007, Environmental Management (EIA and Ecosystems Protection) Regulations and the requirements of the International Finance Corporation (IFC), which has been approached to fund this project.

Background and key issues to be addressed

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55 This is the budget prepared by World Vision which may need standardising in line with IOC per diem rates
An Environmental Impact Assessment for any new development of this nature is a statutory requirement and should only be done by consultants registered with the Environmental Management Agency (EMA).

Section 8 (4) of Statutory Instrument 7 of 2007, Environmental Management (EIA and Ecosystems Protection) Regulations makes it a requirement for the developer to engage registered consultants for conducting the EIA study. EIA reports done by consultants who are not registered with EMA will not be considered. ENILAW is not only registered with EMA but also has the requisite technical expertise and experience in handling legislative requirements of this nature since most of its staff have worked for the Environmental Management Agency under which the EIA policy is administered. The EIA required by the proponent would also need to satisfy the International Finance Corporation (IFC) minimum requirements as stated in the Equator Principles (EP). The Equator Principles are a benchmark for the financial industry to manage social and environmental issues in project financing.

The EIA study will predict (using a number of tools such as EIA Navigator, professional judgement and inference to similar projects) the likely environmental impacts of the project from the construction through to the decommissioning phases of the project. The predicted impacts will be analysed in terms of the probability of occurrence, significance and spatial scale. An Environmental Monitoring and Management Plan will then be drafted basing on the analysis.

The EIA report will also include sections on legal framework for the project, public and stakeholder consultations, environmental baseline surveys and project alternative analysis.

**Project rationale**

In Zimbabwe the carrying out of an Environmental Impact Assessment for any new development of this nature is a statutory requirement. Section 8 (4) of Statutory Instrument 7 of 2007, Environmental Management (EIA and Ecosystems Protection) Regulations makes it a requirement for the developer to engage registered consultants for conducting the EIA study. EIA reports done by consultants who are not registered with EMA will not be considered. ENILAW is registered is not only registered with EMA but also has the expertise and experience in handling legislative requirements of this nature.

**Project goal**

The project goal is to contribute to the successful planning approval, potential funding and implementation of the tilapia aquaculture project by Deep-waters Fish Growers Private Limited.

**Project objective**

The project objective is to complete an Environmental Impact Assessment on time and within budget that will meet the requirements of the Environmental Management Act (CAP 20:27) as well as the Equator Principles.

**Project outputs**

1) Initial scoping of the project impact completed
2) Environmental impact assessment field work, consultation and report completed

**Project activities**

1.1 Scoping

This is a preliminary evaluation of the potential impacts of the project. The evaluation is primarily based on the details of project (fishery) activities and attributes, studies on available secondary data as well as project location characteristics. The scoping report will include sections on project description, legal framework, likely environmental impacts as well as Terms of Reference for conducting the detailed EIA report.

2.1 Conducting an environmental baseline study

The baseline study will cover the biophysical (including hydrological), archaeological and socio-economic and cultural environments. The study will give special consideration to ecologically sensitive ecosystems.

2.2 Assessment of legislative and regulatory framework
Identify all legislation relevant to the construction, operation and decommissioning of the project which needs to be complied with

2.3 Prediction and analysis of potential environmental impacts
The study will determine potential impacts from an assessment of the proposed activities on the existing environment. These will then be analysed to determine severity and significance so as to aid in coming up with an environmental management plan. The principal tools to be used here are EIA Navigator Ver 1.1, World Bank EIA Guidelines, Ministry of Mines, Environment and Tourism EIA Guidelines (1997)

2.4 Assessment of possible alternatives
This is an analysis of possible alternatives to the project with the aim of coming up with a cost benefit analysis and therefore the most sustainable project option.

2.5 Propose an environmental management and monitoring plan
The Management plan will detail the mitigation and management methods for the identified impacts. The monitoring plan will identify key institutions involved in monitoring the implementation of mitigation measures and provide a framework for doing so.

Project inputs
ENILAW will use a multidisciplinary approach to ensure that the study is informative and comprehensive. The consultant will collect both qualitative and quantitative data in the carrying out of this study and appropriate data collection tools will be designed and used. Proposed data collection tools include:

1. Secondary sources such as maps, climatic data, publications and previous study reports as well as the project developmental plan.
2. Participatory community based approaches (focused group discussions, key informant interviews and administering a questionnaire) for consultations with the community within the project area.
3. Stratified Random Sampling of the surrounding community to be consulted.
4. Biophysical Assessments
5. Samples of relevant environmental attributes will be taken and sent to the laboratory for analysis. The results and other collected data will be analyzed using appropriate methods and EIA software. Reference will also be made to known projects where relevant. The EIA report will then be submitted to EMA for review.

<table>
<thead>
<tr>
<th>Qualification/Expertise</th>
<th>Role and responsibilities</th>
<th>Days in field</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bio-geographer &amp; expert in EIAs (Team Leader)</td>
<td>Responsible for the overall coordination of activities and final project report</td>
<td>5</td>
</tr>
<tr>
<td>Environmental Scientist &amp; expert in ecological assessments</td>
<td>Ecological assessments, occupational health and safety</td>
<td>5</td>
</tr>
<tr>
<td>Social Scientist</td>
<td>Social Impact Assessments and stakeholder consultations</td>
<td>5</td>
</tr>
<tr>
<td>Fisheries ecologist</td>
<td>Project specific technical analysis</td>
<td>5</td>
</tr>
</tbody>
</table>

Key indicators of achievement
- Submission of prospectus report to client
- Checking in of field personnel on project site
- Minutes of meetings with stakeholders
- Laboratory results of samples taken
- Draft EIA report
- Final EIA report

56 In the original submission the details of specific consultants were included in the PCN – these have been removed here for reasons of transparency
Assumptions
Information provided to consultant in terms of project (fisheries) background and implementation plan is accurate and will not be altered during project implementation.

Timetable

<table>
<thead>
<tr>
<th>ITEM</th>
<th>ACTIVITY</th>
<th>TIMELINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>EIA familiarisation workshop</td>
<td>Workshop designed to make the client familiar with EIA process and its benefits.</td>
<td>1st day</td>
</tr>
<tr>
<td>Scoping</td>
<td>Desktop studies of maps and relevant literature</td>
<td>1-2 Days</td>
</tr>
<tr>
<td>Field Assessment</td>
<td>Ecological assessment and inventory</td>
<td>5 Days</td>
</tr>
<tr>
<td></td>
<td>Topographical Assessment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hydrological Assessment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Air Quality Assessments</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Water Quality Assessments</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Archaeological Assessments</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Assessment of alternative sites</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environmental Risk Assessment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Social Assessments</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stakeholder Consultations</td>
<td></td>
</tr>
<tr>
<td>Documentation</td>
<td>Stakeholder meetings</td>
<td>2 days</td>
</tr>
<tr>
<td></td>
<td>Synthesis of field data into EIA Report</td>
<td>10 days</td>
</tr>
<tr>
<td></td>
<td>Draft Report</td>
<td>Within 14 days</td>
</tr>
<tr>
<td></td>
<td>Final EIA Report</td>
<td>3 days after draft feedback</td>
</tr>
<tr>
<td>EIA report presentation</td>
<td>Workshop designed to present the EIA report Findings and recommendations to the client</td>
<td>1 day</td>
</tr>
<tr>
<td>EIA approval by EMA</td>
<td></td>
<td>60 days</td>
</tr>
</tbody>
</table>

Provisional budget\(^{57}\)

<table>
<thead>
<tr>
<th>ITEM</th>
<th>ACTIVITY</th>
<th>Units</th>
<th>Unit Cost US$</th>
<th>Total Cost US$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional fees(^{58})</td>
<td>Field Assessments</td>
<td>5 days / consultant</td>
<td>200/day/consultant</td>
<td>4,000.00</td>
</tr>
<tr>
<td></td>
<td>Synthesis of field and secondary data into EIA report</td>
<td>5 days</td>
<td>250/day</td>
<td>1,250.00</td>
</tr>
<tr>
<td>Food</td>
<td>Field Assessments</td>
<td>5 days</td>
<td>10/consultant/day</td>
<td>200.00</td>
</tr>
<tr>
<td></td>
<td>Breakfast</td>
<td>5 days</td>
<td>10/consultant/day</td>
<td>200.00</td>
</tr>
<tr>
<td></td>
<td>Lunch</td>
<td>5 days</td>
<td>10/consultant/day</td>
<td>160.00</td>
</tr>
<tr>
<td></td>
<td>Dinner</td>
<td>4 nights</td>
<td>10/consultant/day</td>
<td></td>
</tr>
<tr>
<td>Accommodation</td>
<td>Field assessments</td>
<td>4 nights</td>
<td>50/night/consultant (50<em>4</em>4)</td>
<td>800.00</td>
</tr>
</tbody>
</table>

\(^{57}\) This is the budget prepared by ENILAW which may need standardising in line with IOC per diem rates
\(^{58}\) Professional fees encompass all technical field work related costs such as laboratory tests.
ANNEX 4.4: ASSESSMENT OF THE ECONOMIC IMPACT AND CONTRIBUTION OF SPORT FISHING ON LAKE KARIBA AND THE ZAMBEZI RIVER BELOW THE DAM WALL

Prepared with support from Dr Morris Mtsambiwa
Scientific Director, University Lake Kariba Research Station, University of Zimbabwe

Aim
The purpose of the project is to assess the economic impact and contribution of sport fishing to tourism promotion and development in the Kariba Tourism zone and prepare a sport fishing management plan zone.

Background and key issues to be addressed
Sport fishing is the fourth component of the Lake Kariba Fisheries which includes (i) the industrial fishery based on the freshwater sardine Limnothrissamiodon, locally known as kapenta which was introduced in late 1960s from Lake Tanganyika (ii) artisanal gillnet fishery based on species of riverine origin that occupy the shallow areas of the lake and (iii) aquaculture based on the exotic bream Oreochromisniloticus being farmed in cages on the lake.

Sport fishing is also one of the recreational activities on Lake Kariba and the Zambezi River below the dam wall all the way to Kanyemba where the Zambezi River leaves Zimbabwe and Zambia into Mozambique. This is particularly true on the Zimbabwean side where the Lake Kariba Recreational Park is adjacent to the Parks and Wildlife Estate which includes Hurungwe Safari Area, Mana Pools National Park and Sapi and Chewore Safari Areas. These areas are part of the Mana Pools World Heritage Site and the Middle Zambezi Biosphere Reserve. On the Zambian side that entire stretch from the dam wall to Kanyemba is mostly habited and gillnetting on the river is taking place.

While the economic importance of the capture fisheries and aquaculture on Lake Kariba have been assessed and being monitored through annual returns, the economic assessment of sport fishing has largely not been done. Management approaches between Zambia and Zimbabwe on Zambezi River below the dam wall are also different and need to be harmonized to avoid overfishing. Overfishing will negatively impact on the development of low volume-high value tourism which is being promoted in that area.

Project rationale
Unlike the other components of the Lake Kariba fisheries which rely on the weight of fish harvested to establish the economic value, sport fishing has recreation as its main objective. The economic importance of sport fishing therefore depends on the consumer’s desire and willingness to pay for this recreation among other things. These factors are critical for tourism development which is one of the fastest growing industries with greater potential. Sport fishing has a better return on investment potential and promotes conservation compared to the other capture fisheries. Information gathered from this study will also be critical for the harmonization of management approaches on the river.

Project goal
Improved governance and management of the Lake Kariba aquatic resources contributing to sustainable development in the Kariba Tourism zone

Project objective
To evaluate the economic impact and contribution of sport fishing in Lake Kariba and the Zambezi River below the dam wall
Project outputs
1. Review the performance of sport fishing in the last ten years.
2. Recommend relative values of sport fishing as compared with those of commercial capture fishery and other water uses and
3. Evaluate sport fishing contribution to the national tourism economy.

Project activities

Output 1
a) Undertake sport fishing literature review
b) Review status of sport fishing in Lake Kariba to establish gear used and target species.
c) Set up a data base of sport fishing in Lake Kariba and the Zambezi River below the dam wall.
d) Review of catch statistics from known tournaments, Parks and Wildlife Management Authority permits and returns.
e) Prepare report outlining trends in sport fishing.

Output 2
a) Review and compare the economic impacts of capture fisheries and sport fishing on Lake Kariba fisheries.
b) Carry out awareness campaign among the stakeholders
c) Prepare report comparing economic impacts of capture fisheries and sport fishing on Lake Kariba.

Output 3
a) Review recreational activities on Lake Kariba with respect to tourism development.
b) Prepare report evaluating sport fishing contribution to the national tourism economy.
c) Prepare sport fishing management plan.

Project inputs
The study will be undertaken by a team of researchers at The University of Zimbabwe Lake Kariba Research Station (ULKRS) and the Lake Kariba Fisheries Research Institute (LKFRI) which regulates the fisheries of Lake Kariba. The team will consist of the following:

Dr M.Z. Mtsambiwa, a fisheries biologist and Director at ULKRS will be the principal investigator. He will work on the project for one week every month for the entire 12 months and responsible for producing review and progress reports, the sport fishing management plan and publications.

Dr. C. Phiri, a Research Fellow at ULKRS will assist DrMtsambiwa in preparing review and progress reports, production of the management plan and publications. He will spend at three days every month on those activities.

Mr. I.H. Tendaupenyu (Officer in Charge at LKFRI) and Ms.NobuhleNdhlovu, both aquatic ecologists pursuing PhD degrees, will analyze the catch statics data and set up the sport fishery data base over a period of nine months.

For economic analysis the research team will also consult the School of Social Studies at the University of Zimbabwe.

The project will require the following resources:

• Fuel for travelling from Kariba Town for lake wide surveys and the river.
• Field equipment for camping during surveys.
• Field allowances for staff and boat hire for lake wide surveys
• Computers and software and stationary.

The two stations will provide salaries for staff and vehicles for travelling during the entire study.
Key indicators of achievement

- Report on the status of sport fishing on Lake Kariba to include type (e.g., rod and line, spear fishing, target species, membership).
- Data base of sport fishing on Lake Kariba and the Zambezi River below the dam wall set up.
- Management Plan for Sport fishing on Lake Kariba and the Zambezi River below the dam wall.

Assumptions

This study will be undertaken on the assumption that the Government of Zimbabwe will utilize the report and subsequent sport fishing management plan to promote tourism. The report will also be accepted as justification for harmonizing management approaches on the river between Zambia and Zimbabwe. A protocol to facilitate this process was signed in 2000 under the Zambia/Zimbabwe Joint Fisheries Project.

Timetable

The project duration will be 12 months commencing in June 2012 to coincide with the commencement of the major sport fishing season.

Provisional budget (US$)

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field work equipment</td>
<td>1,000.00</td>
</tr>
<tr>
<td>Fuel (for field work)</td>
<td>2,000.00</td>
</tr>
<tr>
<td>Staff training and stationary</td>
<td>500.00</td>
</tr>
<tr>
<td>Field allowances for staff</td>
<td>4,000.00</td>
</tr>
<tr>
<td>Computer and software</td>
<td>1,000.00</td>
</tr>
<tr>
<td><strong>Total (US$)</strong></td>
<td><strong>8,500.00</strong></td>
</tr>
</tbody>
</table>

Total (€) 6,595.00

ANNEX 4.5: IMPLEMENTATION OF AN AGROTOURISM DEMONSTRATION SITE ON SAINTE MARIE ISLAND

Summary prepared with support from Mr Yann Yvergniaux, Fisheries Economist, SmartFish Programme
PCN extracted from a proposal prepared by the NGO Mamizo, April 2010

Aim

The aim of the project is to start the tourism-oriented exploitation of a 2 hectares plot of land in the municipality of Saint Joseph, Sainte Marie Island, Madagascar, in the framework of a community-based ecotourism approach.

Background and key issues to be addressed

Sainte Marie Island is a touristic destination located in the North-East of Madagascar. The island is 60 km long and 5 km wide on average. Separated from the mainland by a 40 km wide channel, Sainte Marie is surrounded by a fringing reef which provides the island with a huge lagoon – mainly on the East coast. This lagoon is a major asset, both for fishing and tourism activities.

However, i) the benefits of tourism activities are not equitably distributed among the population and ii) the local food production (fisheries and agriculture) is not sufficient/adequate to supply the local market, hotels and restaurants on the island.

Project rationale

Given that the current food production is not self-sufficient and given the importance of tourism, it is necessary to promote new production systems in order to meet the demand of the local market and the tourism sector.
Project goal
The overarching goal of the project is to raise the living standards of the local population by developing the local touristic potential, with the involvement of the local food producers and their community.

Project objective
Mobilize the local community around an agro-tourism demonstration site and train Saint Joseph (municipality on the East coast of the island) folks in order to maximize the local ecotourism potential of the area.

Project outputs
- Develop local tourism sector & boost local economy
- Enhance quality of local food production & increase cultivated areas
- Involve community in the sustainable management of natural – land and marine – resources

Project activities
- Build agro-tourism compound and information/training center
- Start new fruit trees plantations, bee-keeping and ranching activities
- Train and inform the community on new food production techniques/systems
- Promote the agro-touristic approach across the island through information center

Project inputs
A comprehensive input list is included in the full proposal.

Key indicators of achievement
- 75% of the community is involved
- Living standards of the community increased by 70%
- 80% of the most vulnerable portion of the community get social benefits (employment)
- Conservation level of natural resources increased by 70%

Assumptions
No assumptions are stated in the full proposal - attached separately as Appendix 1.

Timetable
May 2010 to October 2010 (6 months) to construct and implement the demonstration site

Provisional budget
A comprehensive budget is included in the full proposal – attached separately as Appendix 1.

The total cost is stated in this proposal as Madagascar Ariary (MGA) 36,100,086, equivalent to €16,210. This excludes any fisheries related inputs as these are not included in the proposal as prepared in 2010.

ANNEX 4.6: SEMPA ALTERNATIVE LIVELIHOODS PROJECT ON RODRIGUES ISLAND

Extracted from project proposal submitted to GEF, dated June 2011

GEF/SGP PROPOSAL COVER SHEET

Country: Rodrigues, Mauritius Project No.: (to be assigned by GEF-SGP)

Submission Date: June 2011
Project Title: **Supporting alternative livelihoods for the Fisher Communities in the South East Marine Protected Area through Ecotourism Development**

**APPLICANT**

Name of Organization: Coopératived’écotourisme de SEMPA  
Mailing Address: c/o South East Marine Protected Area  
Street Address: Port Sud-Est, Rodrigues  
Telephone:  
Fax:  
E-mail: brendaespiegle@yahoo.com  
Principal Officer:  
Project Coordinator: Ms. Philomene ANDRE

**PROJECT**

GEF-SGP Focal Area  
(check one category)

- [x] Biodiversity  
- [ ] Climate change  
- [ ] International Waters  
- [ ] Land Degradation  
- [ ] POPs

GEF-SGP Operational Programme (1-15) .........................................................

GEF-SGP Activity Category  
(Check one category)

- [x] Demonstration Project  
- [ ] Capacity Building Project  
- [ ] Applied Research & Policy Analysis  
- [ ] Information, Networking & Policy Dialogue

Proposed Starting Date: September 2011

Proposed Project Duration: 1 year

**FINANCES**

Total GEF-SGP Request: MUR 1,360,455  
Total Project Costs: MUR 1,667,455
NARRATIVE PROJECT PROPOSAL

1. Executive Summary

The 90 km fringing reef surrounding the island of Rodrigues encloses a lagoon of over 240 km². An estimated 40% of the lagoon coral and associated ecosystem is severely impacted by destructive fishing practices, siltation from upstream erosion, and pollution from agricultural and sewage run off. Many communities in Rodrigues are dependent on the lagoon, with some 2000 registered fishers attempting to glean a living from the lagoon.

More than 900 fishers are estimated to be working in the southern region of the island, where a Marine Protected Area (MPA) has been designated to protect and conserve marine resources, under the project ‘Partnerships for Marine Protected Areas in Mauritius and Rodrigues’ supported by UNDP, the Global Environment Facility, the Government of Mauritius and the Rodrigues Regional Assembly. The project will promote the sustainable management of the lagoon limiting to a certain extend the exploitation of its natural resources, depriving the communities of free-fishing in the lagoon to reduce the impacts on marine biodiversity and to allow the recovering of the fish stocks and degraded habitats.

That is why there is a growing concern to develop alternative livelihoods to support the communities affected by the creation of this South-East Marine Protected Area (SEMPA) and to give them the opportunity to provide for their family.

According to the Draft Final SIDPR, June 2009, the Chief Commissioner of the RRA firmly believes that the tourism industry is expected to be the ‘principal engine of growth’ over the next five years and will also remain one of the most important pillars of the economy for many years (RRA Programme 2006/2011). Rodrigues counts with about 60,000 visitors per year and the trend is going to grow to reach 150,000 visitors within a decade. So, the tourists are going to arrive in Rodrigues and they will all need a lot of services: accommodation, food, activities and craft products.

Tourism industry will be a real economic opportunity for the communities of SEMPA and some have already understood it. And as we are talking about a Marine Protected Area, there is only one kind of tourism possible to be developed in the SEMPA area: ecotourism. It has been defined by TIES – The International Ecotourism Society – as “Responsible travel to natural areas that conserves the environment and improves the well-being of local people.” (TIES, 1990). Ecotourism is about uniting conservation, communities, and sustainable travel. This means that those who implement and participate in ecotourism activities should follow the following ecotourism principles:

- Minimize impact.
- Build environmental and cultural awareness and respect.
- Provide positive experiences for both visitors and hosts.
- Provide direct financial benefits for conservation.
- Provide financial benefits and empowerment for local people.
- Raise sensitivity to host countries’ political, environmental, and social climate.

Therefore, this project of ecotourism development aims at providing an alternative source of income for the fisher communities of the southern region. This will prevent the need to go out fishing inside the lagoon and therefore reduce the impacts on marine biodiversity.

Its promotion will increase the number of visitors in the region of SEMPA and thus, will provide economic benefits for the local communities, with many direct and indirect employments. At the end of the project, direct employments will be provided for at least 30 members of the community, while more than 100 more members of the communities will take advantage of indirect employments, focusing on the most vulnerable people.

It will also serve as a demonstrative project for the island and even in Mauritius, where tourism growth has had very negative impacts on the environment. This project will demonstrate financial benefits and empowerment for the local communities.
communities, meanwhile preserving the marine biodiversity. It will finally aims at raising awareness on the need to protect Rodrigues marine environment thanks to campaign awareness, so promoting marine conservation and fishery sustainability.

The project is the result of a Community Livelihood Assessment undertaken by UNDP/GEF under the project ‘Partnership for Marine Protected Areas in Mauritius and Rodrigues’ in order to better understand women and men socio-economic pressures, economic dependency on the lagoon fishery, skills, livelihoods assets, aspirations, vulnerabilities, incentives and disincentives to comply with the SEMPA regulation and external influences that can affect the community. It gave the opportunity to identify the alternative livelihoods the communities would like to undertake and ecotourism was one of the alternative sources of income identified by the majority of the communities consulted.

It will be undertaken by ‘Coopérative’écotourisme de SEMPA’, a new cooperative formed as a result of the work done by the National Livelihood Coordinator, to teach the fisher communities how to work together and to run a business.

This project is complementary with the first ecotourism activity developed in SEMPA by ‘Association des Pêcheurs de Port Sud-Est’ and financed by GEF: the Glass-bottom boat; and with other alternative livelihood projects identified in the Action Plan, and developed by the International Livelihood Expert at the short, medium and long-term. It will be one of the first alternative livelihood initiatives to be implemented at the short-term for the fisher communities, part of the initiative for the sustainable management of the area.

The proposal will include the providing of appropriate equipment and trainings to develop micro-ecotourism projects in SEMPA: traditional boat trips in the Southern islands, canoe excursions in the lagoon, marine and terrestrial guiding tours. The traditional boat trips are already offered in some coastal communities but not for tourist groups and in an illegal way as none of the sailing boat owners are registered, trained or licensed to operate. It is about to train them, to regularize the situation and to provide them with a larger traditional boat with the safety equipment. The canoe activity will be a new one but will bring an additional-value for the SEMPA operators as it does not exist anywhere else in the island. Appropriate canoes will be provided to operate in the lagoon as the conditions could be rough. The marine guiding tours will require the appropriate equipment for snorkeling and a marine training guide course for the future operators identified. The terrestrial guiding tours will first need to identify the thematic trails through the region and to train the terrestrial eco-guides.

Local providers will be used for the trainings: Shoals Rodrigues for the Marine Tourism Guide Training Course, Mauritius Wildlife Foundation for the Terrestrial Tourism Guide Course, as much as the services of Rod’Aventure, Discovery Rodrigues or Mr. Aurele Andre.

Once the ecotourism activities will be working, education sessions will be provided to members of the local communities in SEMPA (adults, primary schools, etc.) as well as communities outside SEMPA to emphasize the importance of Marine Protected Areas for marine conservation and fishery sustainability and the new for ecotourism.

The total project cost has been calculated at MUR 1,667,455.
### ANNEX 5: COUNTRY QUESTIONNAIRE DATABASE

<table>
<thead>
<tr>
<th>LAKE KARIBA, ZIMBABWE</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Estimated annual sustainable yield of coastal/lake resources</td>
<td>35000t</td>
</tr>
<tr>
<td>2. Are these resources considered under/over exploited or at MSY</td>
<td>Under</td>
</tr>
<tr>
<td>3. Conservation measures being undertaken to assist in preventing over exploitation (artisanal sector only)</td>
<td>Limited fishing permits, ant-poaching policing by parks</td>
</tr>
<tr>
<td>• Seasonal closures of fishing areas</td>
<td>Not applicable</td>
</tr>
<tr>
<td>• Limits of coastal and offshore areas for relevant fishing vessels</td>
<td>No fishing in designated breeding areas</td>
</tr>
<tr>
<td>• Surveillance</td>
<td>Limited capacity</td>
</tr>
<tr>
<td>• Restrictions on size of fishing vessels harvesting particular species</td>
<td>Determined by specialist and appear on the fishing permit. Restricted fishing grounds for particular species</td>
</tr>
<tr>
<td>• Fishing gear regulations and net mesh sizes</td>
<td>Species and sizes limited by gillnet mesh sizes, minimum size being 3.5 inch mesh</td>
</tr>
<tr>
<td>4. Total estimated annual catch harvested by the artisanal fishers</td>
<td>22,000mt</td>
</tr>
<tr>
<td>5. Catch composition (artisanal sector only)</td>
<td>Species: No data Catch/Year: No data</td>
</tr>
<tr>
<td>• Year of data: Not given</td>
<td>Species: No data Catch/Year: No data</td>
</tr>
<tr>
<td>6. Estimated number and type of artisanal fishing boats</td>
<td></td>
</tr>
<tr>
<td>• Canoes (no engine)</td>
<td>90</td>
</tr>
<tr>
<td>• Canoes (with engine)</td>
<td>10</td>
</tr>
<tr>
<td>• GRP skiff</td>
<td>No data</td>
</tr>
<tr>
<td>7. Types of fishing gear predominantly used</td>
<td>Gill-nets</td>
</tr>
<tr>
<td>8. Estimated number of artisanal fishers in the coastal fishery</td>
<td>Five fishing basins, 35 fishing camps &amp; about 700 fisher-folk</td>
</tr>
<tr>
<td>9. Number of fish landing sites</td>
<td>35</td>
</tr>
<tr>
<td>10. Number of recreational fishing boats (big-game boats)</td>
<td>No data</td>
</tr>
<tr>
<td>11. Number of FADs and location</td>
<td>No data</td>
</tr>
<tr>
<td>12. Estimated catch from recreational/sport fishery</td>
<td>No data</td>
</tr>
<tr>
<td>13. License fees paid by the recreational fishery</td>
<td>No data</td>
</tr>
<tr>
<td>14. Estimated annual revenue from the recreational fishery</td>
<td>No data</td>
</tr>
<tr>
<td><strong>ILE SAINTE MARIE, MADAGASCAR</strong></td>
<td></td>
</tr>
<tr>
<td>---------------------------------</td>
<td>---</td>
</tr>
<tr>
<td>1. Estimated annual sustainable yield of coastal/lake resources</td>
<td>Unknown</td>
</tr>
<tr>
<td>2. Are these resources considered under/over exploited or at MSY</td>
<td>Under exploited</td>
</tr>
<tr>
<td>3. Conservation measures being undertaken to assist in preventing over exploitation (artisanal sector only)</td>
<td>No information given</td>
</tr>
<tr>
<td>• Seasonal closures of fishing areas</td>
<td>None</td>
</tr>
<tr>
<td>• Limits of coastal and offshore areas for relevant fishing vessels</td>
<td>None</td>
</tr>
<tr>
<td>• Surveillance</td>
<td>Control of licenses and unloading of fish at SPSM</td>
</tr>
<tr>
<td>• Restrictions on size of fishing vessels harvesting particular species</td>
<td>None</td>
</tr>
<tr>
<td>• Fishing gear regulations and net mesh sizes</td>
<td>Use of fishing lines only?</td>
</tr>
<tr>
<td>4. Total estimated annual catch harvested by the artisanal fishers</td>
<td>20,000Kg?</td>
</tr>
</tbody>
</table>
| 5. Catch composition (artisanal sector only) | Species: No data  
Catch/Year: No data |
| • Year of data: Not given | Species: No data  
Catch/Year: No data |
<p>| 6. Estimated number and type of artisanal fishing boats |  |
| • Canoes (no engine) | 0 (this figure is incorrect) |
| • Canoes (with engine) | 2 |
| • GRP skiff | 6 |
| 7. Types of fishing gear predominantly used | Trawl line (trolling?) and line fishing |
| 8. Estimated number of artisanal fishers in the coastal fishery | 16 |
| 9. Number of fish landing sites | 1 (SPSM) |
| 10. Number of recreational fishing boats (big-game boats) | 3 |
| 11. Number of FADs and location | No FADs |
| 12. Estimated catch from recreational/sport fishery | Not declared |
| 13. License fees paid by the recreational fishery | Unknown |
| 14. Estimated annual revenue from the recreational fishery | Unknown |</p>
<table>
<thead>
<tr>
<th>RODRIGUES ISLAND, MAURITIUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Estimated annual sustainable yield of coastal/lake resources</td>
</tr>
<tr>
<td>2. Resource considered over exploited</td>
</tr>
<tr>
<td>3. Conservation measures being undertaken to assist in preventing over exploitation (artisanal sector only)</td>
</tr>
<tr>
<td>• Seasonal closures of fishing areas</td>
</tr>
<tr>
<td>• Limits of coastal and offshore areas for relevant fishing vessels</td>
</tr>
<tr>
<td>• Surveillance</td>
</tr>
<tr>
<td>• Restrictions on size of fishing vessels harvesting particular species</td>
</tr>
<tr>
<td>• Fishing gear regulations and net mesh sizes:</td>
</tr>
<tr>
<td>4. Total estimated annual catch harvested by the artisanal fishers</td>
</tr>
<tr>
<td>5. Catch composition (artisanal sector only)</td>
</tr>
<tr>
<td>• Year of data: See attached data 1994-2010 (table overleaf)</td>
</tr>
<tr>
<td>6. Estimated number and type of artisanal fishing boats</td>
</tr>
<tr>
<td>• Canoes (no engine)</td>
</tr>
<tr>
<td>• Canoes (with engine)</td>
</tr>
<tr>
<td>• GRP skiff</td>
</tr>
<tr>
<td>7. Types of fishing gear predominantly used</td>
</tr>
<tr>
<td>8. Estimated number of artisanal fishers in the coastal fishery</td>
</tr>
<tr>
<td>9. Number of fish landing sites</td>
</tr>
<tr>
<td>10. Number of recreational fishing boats (big-game boats)</td>
</tr>
<tr>
<td>11. Number of FADs and location</td>
</tr>
<tr>
<td>12. Estimated catch from recreational/sport fishery</td>
</tr>
<tr>
<td>13. License fees paid by the recreational fishery</td>
</tr>
<tr>
<td>14. Estimated annual revenue from the recreational fishery</td>
</tr>
</tbody>
</table>
### Annual catches by fishing ground, Rodrigues Island

<table>
<thead>
<tr>
<th>Year</th>
<th>Fish</th>
<th>Octopus</th>
<th>Off Lagoon</th>
<th>Total</th>
</tr>
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<tbody>
<tr>
<td>1994</td>
<td>731.0</td>
<td>774.5</td>
<td>-</td>
<td>1505.5</td>
</tr>
<tr>
<td>1995</td>
<td>684.9</td>
<td>723.2</td>
<td>-</td>
<td>1408.1</td>
</tr>
<tr>
<td>1996</td>
<td>881.9</td>
<td>677.4</td>
<td>-</td>
<td>1559.3</td>
</tr>
<tr>
<td>1997</td>
<td>875.7</td>
<td>707.6</td>
<td>-</td>
<td>1583.8</td>
</tr>
<tr>
<td>1998</td>
<td>1010.5</td>
<td>560.3</td>
<td>186</td>
<td>1756.8</td>
</tr>
<tr>
<td>1999</td>
<td>1239.5</td>
<td>476</td>
<td>293.2</td>
<td>2008.7</td>
</tr>
<tr>
<td>2000</td>
<td>1232.3</td>
<td>475.2</td>
<td>309.4</td>
<td>2016.9</td>
</tr>
<tr>
<td>2001</td>
<td>1120.7</td>
<td>328.7</td>
<td>487.7</td>
<td>1937.1</td>
</tr>
<tr>
<td>2002</td>
<td>840.7</td>
<td>382.8</td>
<td>180.5</td>
<td>1404.0</td>
</tr>
<tr>
<td>2003</td>
<td>953.9</td>
<td>580.2</td>
<td>142.4</td>
<td>1676.5</td>
</tr>
<tr>
<td>2004</td>
<td>836.3</td>
<td>323.8</td>
<td>44.2</td>
<td>1204.3</td>
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<tr>
<td>2005</td>
<td>563.6</td>
<td>285.0</td>
<td>191.3</td>
<td>1039.9</td>
</tr>
<tr>
<td>2006</td>
<td>640.7</td>
<td>266.1</td>
<td>160.3</td>
<td>1067.4</td>
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<tr>
<td>2007</td>
<td>886.1</td>
<td>254.1</td>
<td>383.7</td>
<td>1523.9</td>
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<tr>
<td>2008</td>
<td>1078.1</td>
<td>281.3</td>
<td>398.2</td>
<td>1757.6</td>
</tr>
<tr>
<td>2009</td>
<td>951.1</td>
<td>278.4</td>
<td>384.2</td>
<td>1608.7</td>
</tr>
<tr>
<td>2010</td>
<td>923.6</td>
<td>268.7</td>
<td>362.6</td>
<td>1554.9</td>
</tr>
<tr>
<td>No.</td>
<td>Description</td>
<td>Reference</td>
<td>Pages</td>
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<td>6.</td>
<td>Trade Assessment Study. REPORT/RAPPORT: SF/2012/06. March/Mars 2012.</td>
<td>SmartFish Programme. Indian Ocean Commission</td>
<td>120</td>
<td></td>
</tr>
</tbody>
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La bonne gouvernance et de la gestion des pêches et de l’aquaculture permettent d’améliorer la contribution du secteur à la sécurité alimentaire, au développement social, à la croissance économique et au commerce régional; ceci en assurant par ailleurs une protection renforcée des ressources halieutiques et de leurs écosystèmes.

La Commission de l’Océan Indien (COI) ainsi que la COMESA (Common Market for Eastern and Southern Africa), l’EAC (East African Community) et l’IGAD (Inter-Governmental Authority on Development) ont développé des stratégies à cette fin et se sont engagés à promouvoir la pêche et l’aquaculture responsable.

SmartFish supporte la mise en œuvre de ces stratégies régionales en mettant l’accent sur le renforcement des capacités et des interventions connexes visant à :

- mettre en place des mécanismes pour la gestion et le développement durable des pêches ;
- développer un cadre de gouvernance des pêches au niveau régional ;
- renforcer le suivi-contrôle-surveillance pour les pêcheries partagées ;
- développer des stratégies et supporter des initiatives propres à accroître le commerce régional du poisson ;
- contribuer à la sécurité alimentaire en particulier par la réduction des pertes après captures et la diversification de la production.

SmartFish est financé par l’Union Européenne dans le cadre du 10ème Fond Européen de Développement.

SmartFish est mis en œuvre par la COI en partenariat avec la COMESA, l’EAC et l’IGAD et en collaboration avec la SADC. Une collaboration étroite a également été développée avec les organisations régionales de pêche de la région. L’assistance technique est fournie par la FAO et le consortium Agrotec SpA.

By improving the governance and management of our fisheries and aquaculture development, we can also improve food security, social benefits, regional trade and increase economic growth, while also ensuring that we protect our fisheries resources and their ecosystems.

The Indian Ocean Commission (IOC), the Common Market for Eastern and Southern Africa (COMESA), the East African Community (EAC) and the Inter-Governmental Authority on Development (IGAD) have developed strategies to that effect and committed to regional approaches to the promotion of responsible fisheries and aquaculture.

SmartFish is supporting the implementation of these regional fisheries strategies, through capacity building and related interventions aimed specifically at:

- implementing sustainable regional fisheries management and development;
- initiating a governance framework for sustainable regional fisheries;
- developing effective monitoring, control and surveillance for transboundary fisheries resources;
- developing regional trade strategies and implementing regional trade initiatives;
- contributing to food security through the reduction of post harvest losses and diversification.

SmartFish is financed by the European Union under the 10th European Development Fund.

SmartFish is implemented by the IOC in partnership with the COMESA, EAC, and IGAD and in collaboration with SADC. An effective collaboration with all relevant regional fisheries organisations has also been established. Technical support is provided by Food and Agriculture Organization (FAO) and the Agrotec SpA consortium.

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Tél: (+230) 402 6100  Fax: (+230) 465 7933