Coastal and Marine Tourism Development Plan for the Menai Bay Conservation Area (MBCA), Mnemba Island Marine Conservation Area (MIMCA), and the Pemba Channel Conservation Area (PECCA).

Final Report

Prepared by:

Enviro-Fish Africa (Pty) Ltd

For:

MARINE AND COASTAL ENVIRONMENT MANAGEMENT PROJECT (MACEMP)

July 2012

PREPARED FOR:

Marine and Coastal Environmental Management Project (MACEMP)

Department of Fisheries Development
PO Box 774
Zanzibar
Tanzania
Tel +255 242231051
Fax +255 24 2237285

PREPARED BY:

Enviro-Fish Africa (Pty) Ltd

c/o The Department of Ichthyology and Fisheries Science
Rhodes University
PO Box 94
Grahamstown 6140
Tel: +27 (0)46 603 8786
Fax: +27 (0)46 603 7504
www.ru.ac.za/envirofishafrica

TABLE OF CONTENTS

1 INTRODUCTION

The multiple needs of the tourism industry in Zanzibar in terms of attractions, facilities and services, place a variety of demands on natural resources. In the majority of cases, tourism demands compete directly with other resource users, and in this regard a major area of concern is unregulated marine and coastal-based tourism activities. Taking cognisance of the role that tourism plays in the Zanzibar economy, the Government recognizes that tourism is a sector of major economic importance, and in future, will become increasingly important in light of the decline of Zanzibar's traditional sources of foreign exchange earnings.

The purpose of this plan is to develop a Coastal and Marine Tourism Development Plan (CMTDP) for selected Marine Conservation Areas (MCAs) from the Zanzibar Archipelago, namely the Menai Bay Conservation Area **(**MBCA), Mnemba Island Marine Conservation Area **(**MIMCA), and Pemba Channel Conservation Area **(**PECCA). The MBCA and MIMCA are located on the south-western and eastern coasts of the main island of Unguja respectively, while the PECCA is located on the western side of Pemba Island (Figures 1 to 4). The study will be implemented in order to promote improved management of marine and coastal resources within the framework of a tourism-driven industry, while providing for economic growth, improved institutional arrangements and the alleviation of poverty within local coastal communities.

The multiple needs of the tourism industry in terms of attractions, facilities and activities necessitate a variety of demands on natural resources and basic service provision. In the majority of cases, tourism demands compete directly with other resource users, and in this regard a major area of concern is unregulated marine and coastal-based tourism activities. Taking cognizance of the role that tourism plays in the Zanzibar economy, the Government recognizes that tourism is a sector of major economic importance, and in future, will become increasingly important in the light of the decline of Zanzibar's traditional sources of foreign exchange earnings, such as cloves.

The tourism sectoral objective is to protect and manage the country's tourism assets such that their capacity to sustain development is unimpaired, and Zanzibar's rich cultural and environmental endowments are available for the present and future generations to enjoy and use. Furthermore, there is a need to develop closer co-coordination between all the institutions involved in the tourism sector, and above all monitor and control developmental growth.

According to Zanzibar's General Tourism Policy, the main objective is for the Government of Zanzibar to develop, plan, manage and promote a tourism industry that emphasizes sustainability, quality and diversification, and which is culturally responsible, socially desirable, ecologically friendly, environmentally sustainable and economically viable. The image of Zanzibar abroad will be portrayed as a destination that promises an exclusive holiday destination primarily for historical & cultural attractions and beach holidays. Given the current situation and marketing strategies (of Government,

resort/lodge owners and tourism operators) the concept of a beach holiday must be understood to include marine-based recreational and sporting activities.

1.1 SPECIFIC TOURISM POLICY OBJECTIVES

The Zanzibar Tourism Policy states that the Government of Zanzibar firmly believes that tourism, as a vital socio-economic development factor, can empower the people of Zanzibar to improve their livelihoods. In this regard, the tourism policy objectives that need to be implemented are:

1. To utilize more effectively the tourism potential to generate more income, human resources, and foreign exchange earnings while protecting the environment, Zanzibar culture and traditions.
2. To diversify the tourist attractions in order to achieve a balanced growth of the tourism industry and maximise benefits, and to strengthen the cultural industries including museums, theatres, cultural and community participation as a means of product diversification that harnesses tourism.
3. To emphasize the best options to develop the current accommodation in Zanzibar, types, styles, and management models.
4. To improve the standard of quality of services and facilities to meet the challenges of long-term tourism development.
5. To enhance the quality of, and accessibility to, the existing tourism infrastructure and to develop this aspect to address the demands of high-class tourism.
6. To formulate and develop marketing and promotion programs that maximize financial revenues, and to enhance economic, social, and cultural ideals and minimize environmental impacts.
7. To encourage domestic tourism and maximize its significance.
8. To address “reducing tourism seasonality” as a serious issue affecting the tourism industry in Zanzibar.
9. To enhance the tourist image of Zanzibar in an original, trustful and attractive manner.
10. To address tourist safety and security issues in a cooperative manner, and as an important part of the government’s larger safety and security concerns.
11. To emphasize public/private partnership in the tourism sector.
12. To contribute to the quality of local livelihoods.
13. To stimulate the participation of local people in the tourism development process.
14. To manage tourism impacts so as to maximize costs and benefits.

It is in the context of these objectives, and taking Zanzibar’s Tourism Master Plan into account, that the following Tourism Development and Carrying Capacity Plan will be developed and implemented.

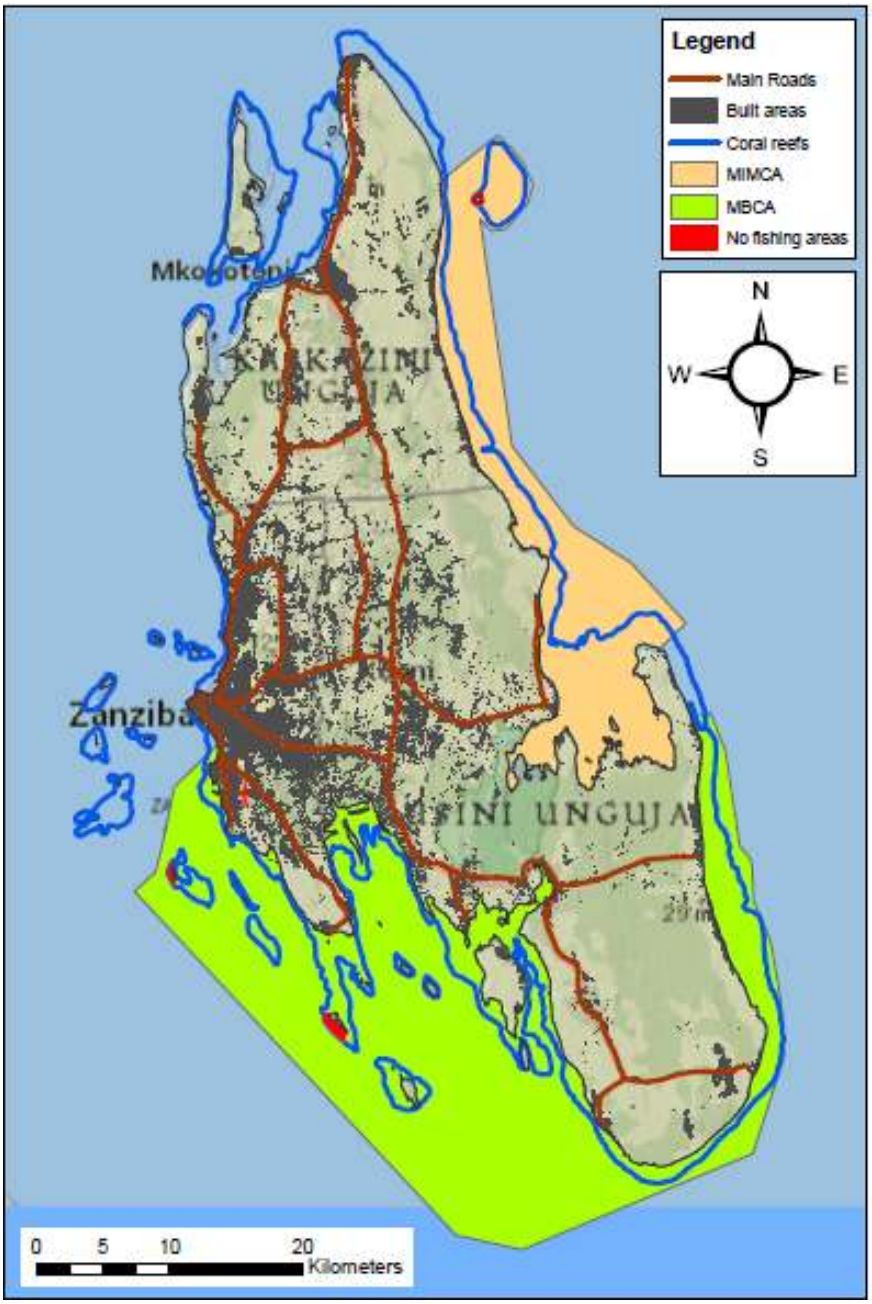

Figure 1 Unguja Island, Zanzibar, showing the location of the MIMCA and MBCA.

Figure 2 Close up view of the MIMCA.

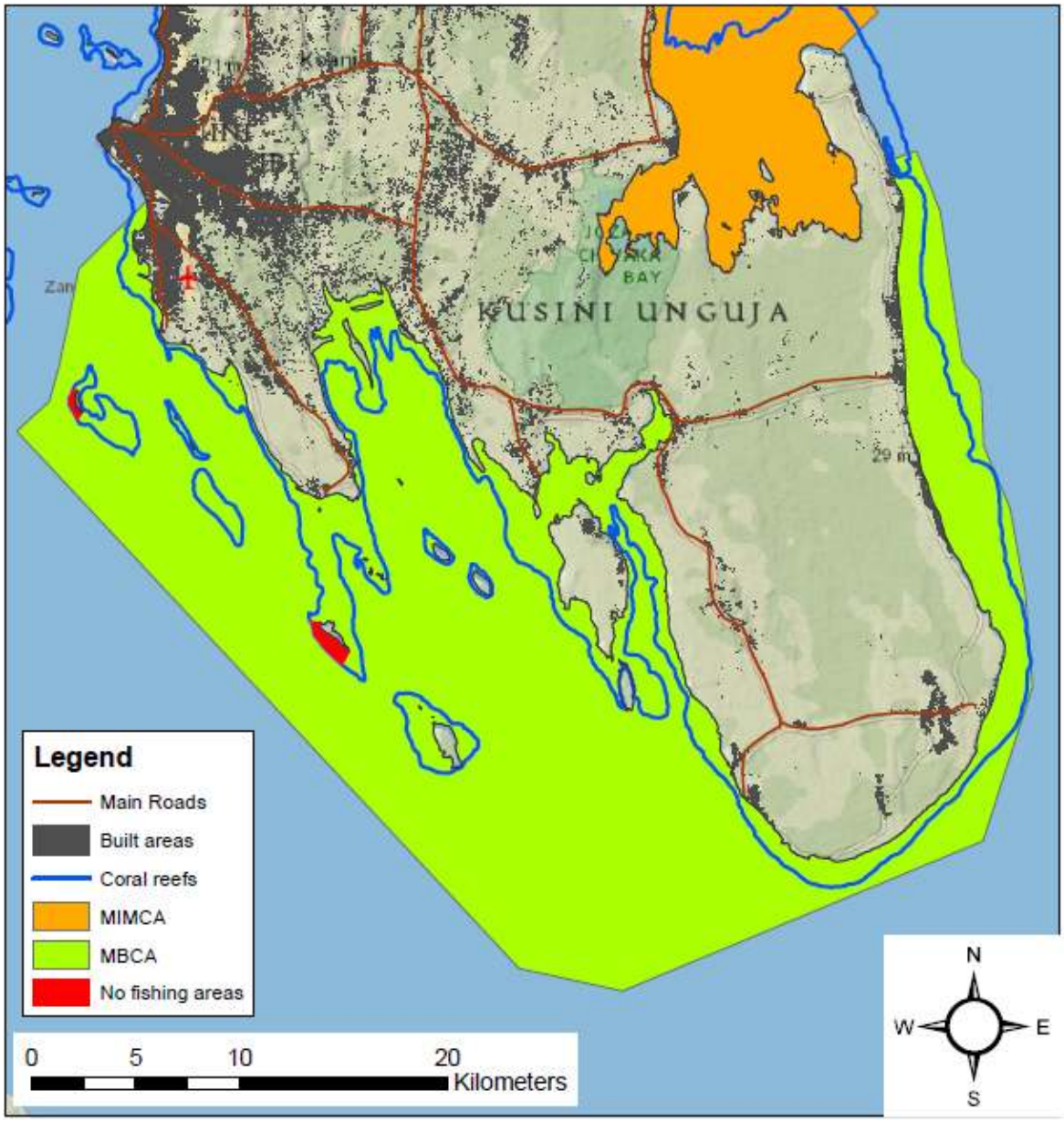

Figure 3 Close up view of the MBCA.

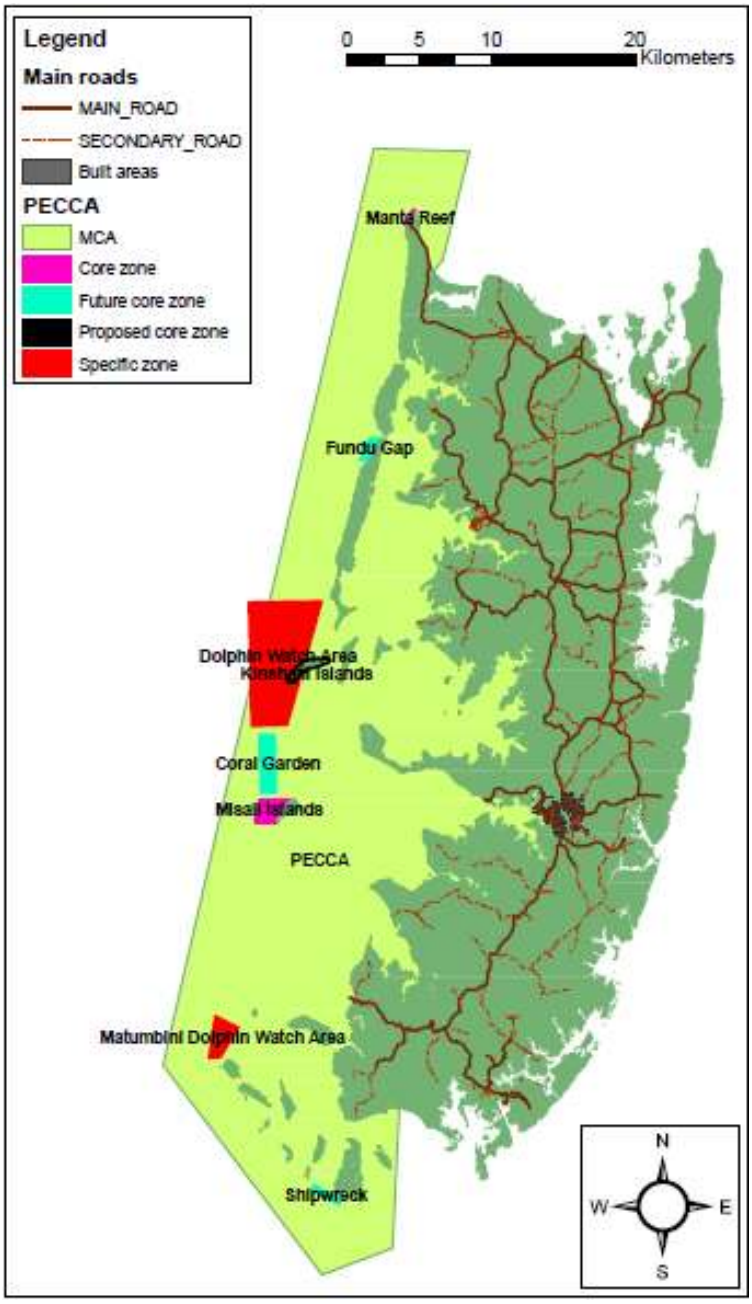

Figure 4 The PECCA located on the west side of Pemba Island, Zanzibar.

2 VISION

The Vision regarding tourism from the Zanzibar Tourism Policy Statement, and one that is wholly applicable to this plan is:

"To become one of the top tourism destinations of the Indian Ocean, offering an up-market, high quality product across the board (by the year 2020)."

2.1 MISSION

The Zanzibar Vision 2002 is a principal document produced by the Government of Zanzibar, and sets out the sustainable development of resources and services until 2020. Its policy for tourism is set out as:

"To develop a tourism industry which is culturally and socially responsible, ecologically friendly, environmentally sustainable and economically viable and to promote Zanzibar as the destination for tourism in terms of historic cultures and beach holidays."

While the implementation of this policy will not only help to achieve the Vision, it will go a long way to realizing the Mission Statement for tourism development from the Zanzibar Tourism Policy. This Mission Statement is:

"To be the most exotic, diverse island destination in the Indian Ocean Region."

Exotic as defined as being wrapped in a mysterious Arab/African ambience and flavoured with palm fringed, tropical beaches; Diverse in terms of products, activities and attractions, and thereby combining various types of tourism.

Tourists need to be attracted by more than just beaches, diving, fishing and dhow cruises, and the indigenous aspects of Zanzibar are key to achieving this. In terms of marine-based activities and beach holidays, Zanzibar offers nothing different to other Indian island destinations such as Mauritius, the Seychelles and Reunion, and even up-market resorts in Madagascar. In order to achieve the Vision and realize the Mission, tourism needs to place more emphasis in marketing those aspects that are unique to Zanzibar, primarily its history, culture, architecture, village life, arts & crafts, and spice products i.e. the "Exotic" component of the Mission.

3 CARRYING CAPACITY

Developing an analysis of the tourism carrying capacity within the three MCAs is largely a function of understanding the various quantitative and qualitative factors. Only when these are understood in unison will a true sense of sustainability begin to be realised. In addition, a number of indirect factors or indicators of carrying capacity will be outside of the typical hospitality data, for example, the increasing migrant labour coming in to the islands looking for work in the tourism sector.

The sustainability philosophy presented in this plan is informed by Carrying Capacity and Limits of Acceptable Change frameworks. The core assumption of the Carrying Capacity framework is that a fixed number of people can be supported by the resource limitations of a closed ecosystem (e.g. a small island). This limit can be pushed outward through technology choices. The core assumption of the Limits of Acceptable Change framework is that any development risks some degree of negative impact on the natural and social systems. The tolerable limits of change are a matter of deliberate decision-making, with the implicit recognition of risks and trade-offs. Risk and change are inevitable.

The varying definitions of carrying capacity in recreation and tourism generally contain the concept of: "limits of use to which an area can be exposed to before there is a significant and appreciable decline in both the quality of the resource and the quality of the experience for the user". Early attempts in the field of tourism planning at identifying the carrying capacity of a destination were preoccupied with trying to quantitatively determine the number of tourists that could be accommodated in an area. This approach is now understood to provide a limited understanding of how many hotel developments can occupy a certain space. Carrying capacity is a far more complex phenomenon that is influenced and impacted on by a myriad of different socio-economic and environmental factors. These include:

- The growth rate of the industry.
- The availability of coastal land suitable for resort development.
- The proximity of coastal villages and the socio-cultural impacts on the indigenous communities.
- Service provision (water, electricity, waste disposal, and sewerage treatment).
- Transport infrastructure.
- Impacts on consumptive resources (e.g. seafood).
- Impacts on non-consumptive resources (e.g. forests, heritage sites, marine mammals and turtles).

It is almost impossible to arrive at a figure or number of what might be deemed an acceptable number of tourist arrivals or how many hotel developments could be carried within a certain environmental or socio-economic context. This notion is heavily influenced by various systemic factors such as different types of users/visitors, causing different types of impacts and having different preferences and expectations. This can equally be said for the type of hotel developer who comes with varying ethical considerations for the environment and the communities they find themselves developing within.

Tourism normally represents a form of free enterprise, of capitalism and competition, and where the resources and infrastructure are in private hands, the acceptance by investors of government intervention and regulation is typically, but not always, unpopular. This ultimately means that hotel developments in a developing world context are able to influence their environment in ways that possibly those in more industrialised contexts cannot. The result is that in the former, case rules are more easily 'worked around', and this alone has significant implications for sustainability.

3.1 EXPONENTIAL GROWTH

According to the Tourism Master Plan of 2003, there were 173 hotels/guest houses offering a total of 3 089 rooms in Zanzibar in 2002; of these only 14 resorts/guest houses with 110 rooms were on Pemba. A 2010 Commission for Tourism survey shows 343 hotels/guest houses with 7 014 rooms in Zanzibar, 19 of which (212 rooms) are on Pemba. The area between Kendwa and Dongwe (inside or close to the MIMCA) alone has 111 resorts/guest houses with 3 874 rooms. The number of resorts/guest houses has essentially doubled in only 8 years, and given the available resources (space, services and consumables), continued growth at this rate will not be sustainable.

More in-depth research and data analysis would assist all relevant decision-makers working in the tourism sector to better understand the visitor typology of the MCAs. This information would in turn contribute to a better understanding of the nature of the impacts of the different types of tourists, and how the hospitality sector could better accommodate more responsible and ethical types of tourists that have less negative impacts at the social and environmental level, and result in increased benefits at an economic level. Tourism marketing initiatives are increasingly moving to attract the responsible travel sector. Websites such as "Responsible Travel" have created such portals for the very purpose of attracting the 'right' type of tourists to certain destinations – those that can adequately provide for guests who demand a more ethical holiday in an eco-conscious environment. However, it must be noted that such tourists know exactly what they are looking for, are prepared to pay for it, and expect the appropriate deliverables. They are amongst the most knowledgeable of tourists and subsequently should only be sought if they can be sufficiently provided for.

3.2 LAND USE

The Unguja and Pemba Islands are small with finite amounts of land that can be used for environmentally sustainable and responsible coastal development. Until recently, most tourist developments have had little regard for the environment, with most being built right on or beyond the high water mark, destroying wetlands and cutting away vegetation. While this may be acceptable (safety excluded) in high-density urban areas such as Nungwi, for the most part, the pursuit of providing "idyllic" get-aways for tourists has destroyed what was once a pristine coastline. Some of the more recent resorts have been more circumspect, and it is hoped that all future developments, guided by a stringent EIA process, will be more suitable. Apart from avoiding developments in sensitive coastal habitats, the practice of relocating coastal villages to make way for tourist resorts should be regarded as an affront to these communities' rights and cultural heritage.

The Tourism Zoning Plan that was introduced as part of the larger Zanzibar Integrated Lands and Environment Project, established by the Zanzibar National Land Use Plan (NLUP), is a crucial tool in assisting with the appropriate zonation of hotel developments. The nature or intention of the zoning plan and its objectives is a crucial component of effectively managing carrying capacities. The plan alludes to creating a balanced and phased development strategy that includes accommodation types and

planned bed capacities. Importantly, infrastructure constraints and requirements for each tourism area are identified. The second stage of the Zoning Plan was to implement detailed planning schemes by identifying sites for development and undertaking the necessary participatory consultations with the local population. Unfortunately, the zoning plan programme seems to have been abandoned due to the withdrawal of FINNIDA, and as a result, there is reduced planning control.

3.3 INDIGENOUS LIVELIHOODS

Coastal tourist developments (including Island developments) have impacted significantly on local inhabitants and their livelihoods. There are many examples of the beneficial impacts of tourism, such as job creation, the supply of fish products, arts & crafts and village tours. However, the increase in the number of developments means that coastal communities are being deprived of land, moved from existing homes, and in some cases being denied access to historical fishing areas through "privately owned" resort properties. The livelihoods of coastal communities are part of Zanzibarian history, and their rights to land and access to the coastal zone should be given priority over all else.

3.4 SERVICE PROVISION

Under the lease agreements with investors, the Government of Zanzibar is obliged to provide the necessary essential services such as serviced roads, electricity, water, waste collection/disposal and telecommunications to the development. While the main arterial road system, at least on Unguja, is in an excellent condition, the secondary road system that links to the coast, and therefore the tourist destinations, is very poor. In many cases the roads are unusable after prolonged periods of rain and only 4x4 vehicles can safely use others. In addition, there is no full coverage of potable water supply, and though electricity coverage is good, the supply can be sporadic and unreliable. A major problem is that the collection and treatment of solid waste is sporadic (e.g. Nungwi and Matemwe) and often waste is dealt with by disposing in illegal landfill sites/dumps and local incineration. This has a number of knock-on effects, namely it detracts from the image of the island; it is a health hazard encouraging rats and feral dogs; it creates water pollution in ground water supplies; it causes beach and lagoon pollution, and it poses a significant fire hazard.

Sewerage treatment is the other major factor that will determine carrying capacity. The capacity to cope with ever-increasing sewerage loads will be limited by space (for septic tanks or soak-aways) in the rural areas, by the ability of the soils to cope with the levels of saturation, and by increased levels of contamination where sewerage is pumped out to sea. Overloaded systems and excess sewerage will ultimately pose a health risk via direct contact and through contaminated sea and ground water.

3.5 CONSUMPTIVE RESOURCES

The pressure on consumptive marine resources is already extremely high, with fishing being by far the most dominant (and important) life sustaining activity for coastal

communities. Apart from providing food for fishermen and their families, there is a demand from the tourist industry to supply fresh seafood on a daily basis. Fishmongers select the best product from the various selling points and sell to the resorts nearby. The main resources comprise the larger fish such as snapper, rock cod, trevally, kingfish, octopus, squid and to a lesser extent some shellfish. These resources are finite, and at the present levels and efficacy of exploitation, one cannot consider the fishery to be sustainable in the long-term. If the number of tourists increases, there will be a greater demand for the prime resources, which will force fishermen to catch more in order to meet the increased demand while also providing for their own needs. As a result, the resource would be decimated and the primary source of food for coastal communities would cease to be viable.

3.6 NON-CONSUMPTIVE RESOURCES

The industry also has a major impact on non-consumptive resources, with tours that include forests (terrestrial and mangrove) and heritage sites. Too much foot-traffic in these areas can prove to be overwhelming, and cause levels of degradation that make rehabilitation practically impossible. The same applies to the vast number of divers that frequent the coastal reef areas; too many can cause behavioural changes in reef dwelling animals while also increasing the risk of physical damage to corals (breakage and secondary infections). Of primary concern with regards to marine resources are the dolphins and turtles. Human interaction has not been well controlled at all, despite some attempts in the past. Turtle numbers have reduced as a result of the loss of suitable nesting sites to tourist developments and damaged nests; however illegal catches and trade by local fishermen continue to account for much of the decline. Dolphin populations are already at risk due to constant harassment that will cause behavioural changes that ultimately affect breeding and recruitment success. Dolphins will move away from the areas when the situation becomes untenable (particularly Menai Bay) and that aspect of the tourist industry will inevitably collapse. If the current situation is allowed to prevail and greater numbers of tourists are added to the picture, the consequences will likely be disastrous for all parties concerned.

The issue of carrying capacity is therefore not a question of how much land is available for building more resorts to service more tourists. It is a question of preserving sensitive coastal environments, the need to preserve the rights, dignity and livelihoods (present and historical) of local coastal inhabitants, the capacity to provide basic needs and services, the sustainable use of consumptive marine resources, and the adverse effects on non-consumptive resources such as heritage sites, forests, marine mammals and turtles.

3.7 STRATEGIES

3.7.1 Land use and zonation

- Only land currently zoned for tourism development in the Land Use Plan should be considered for future developments.

- Land currently zoned for future tourism developments should be considered for rezoning as open space or no-go areas if it is within 300 m of coastal villages; if it is within 300 m of known turtle nesting sites; if it contains sites or items of cultural significance; or if it contains sensitive habitats such as indigenous forests (including mangroves), primary dunes or wetlands.
- Zoning should exclude all land within 30 m of the high water mark (HWM). Alternatively, there must be a condition that no permanent structures be erected within 30 m of the HWM.
- So as to prevent coastal erosion, no vegetation is to be cleared within 30m of the HWM.
- Erosion at existing tourist developments should be rehabilitated using infill, vegetation and hard structures at the expense of the leaseholders.
- All new applications for developments (not just those with >100 beds) must undergo an EIA (EIA Regulations of 2006; National Environmental Action Plan, 1994; and National Environmental Management Act No 19 of 1983). All EIAs should include (as a minimum) assessments of sensitive habitats, cultural resources, socio-economic impacts on local communities, the availability of water, increases in road traffic on the already poor access roads, sewerage treatment and solid waste disposal. This would significantly contribute to carrying capacity by ensuring that more of the 'right' guests are attracted and are able to be accommodated. Carrying capacity is not about fewer hotels with fewer guests, but rather about more ecologically sound developments attracting ecologically conscious guests.
- Reinstitute the planning schemes detailed in the Tourism Zoning Plan that are aimed at identifying sites for development and undertaking the necessary participatory consultations with local people. This would in turn contribute to the 'right type' of investors and hotel developments as per the wider tourism strategy that talks to high income and low impact tourism, while also minimizing low quality developments and the ignoring of planning guidelines in new developments.

3.7.2 Water, sewerage and service provision

- An audit of available water resources needs to be conducted to determine firstly whether there is sufficient for existing developments, and secondly how much is available in reserve for future developments.
- All future developments are to harvest rainwater that can be used for drinking water, toilets, kitchen activities and general washing/cleaning. One rain tank should be installed per dwelling, and at least two for the main lodge.
- Existing developments are to phase in, over a two-year period, rainwater harvesting as above. Soil permeability and ground water studies must be carried out to determine the positioning of septic tanks and soak-aways. This will prevent contamination of water sources (freshwater and marine); as a minimum, no sewerage facilities are to be located within 30 m of any water source.
- Self-contained sewerage treatment plants (bio-treatment facilities) must be considered for all new developments, with treated waste-water being used for maintenance activities such as gardens, car washing etc.; this can be phased in for existing developments where the risk of contamination exists.

- Conduct an audit of existing solid waste disposal sites and their capacity to deal with both current loads and projected loads. Additional sites must be proclaimed to cope with the inevitable increase in waste in the future.
- No burning of any waste must be allowed at resorts/guest houses, and only controlled burning is to be allowed at disposal sites.
- The secondary road network that provides access to coastal resorts, guest houses and villages must be upgraded or at least regularly maintained. This will become increasingly necessary as the number of tourists and therefore road traffic increases.

3.7.3 Consumptive resources

- The capacity for compliance monitoring with regards to the fisheries regulations needs to be increased, and some semblance of control over levels of exploitation needs to be exercised. The fast growing cephalopod species (octopus and squid) and some pelagic fish species (kingfish, tuna and trevally) are resources better suited to high levels of exploitation, but most reef fish species, crustaceans and shellfish are not. Resorts/guest houses should be restricted to buying only those suitable resources mentioned above from local fishermen or fishmongers.
- If tourist numbers and fishing pressure both increase, each MCA will be required to consider additional closed areas as a management tool for initially conserving resources and then enhancing them. While rotational closed areas generally don't work for fish species, they can potentially benefit faster growing invertebrate species (such as octopus) and these should be given serious consideration.

3.7.4 Non-consumptive resources

- Self-regulation of the hotel sector with respect to ecologically greener energy and waste alternatives should be further encouraged. However regulations at the build and design phase should be regulated and monitored by the Commission for Tourism in cooperation with the Zanzibar Investment Promotion Agency (ZIPA).
- The capacity for cultural sites to handle increased tourist activity needs to be determined and restrictions put in place that will help prevent deterioration.
- Codes of conduct for diving, dolphin/whale watching and turtle tours need to be legislated (i.e. not just recommendations). The MCU can exercise powers under Section 4 of the MCU Regulations 2012 and legislate and enforce the codes of conduct proposed in Appendices 1 to 3.
- The current situation, specifically with dolphin watching is untenable and must be addressed. Existing activities already pose a threat to the dolphins themselves and therefore ultimately to the tourism industry as well. Any increase in tourist numbers taking part in this activity will not be sustainable unless the industry is regulated.
- Historical attempts to regulate the dolphin watching industry have not been successful. However, in future, specific legislation together with political will should ensure success. The political will aspect must include funding for trained guides and additional compliance monitors that accompany each vessel engaged in the activity. The MCU and Commission for Tourism need to motivate for funding from

Government - this could be achieved by convincing them that dolphin watching is one of Zanzibar's most precious tourist assets.
- Key to the sustainability of dolphin watching is determining appropriate areas for viewing. Funding must be sourced (again this requires political will) to conduct studies aimed at declaring no-go areas (e.g. nursery and feeding areas) and to implement a long-term monitoring programme to ensure the protection of the dolphins and viability of the industry.

3.7.5 Status quo

- Until such time as the carrying capacity can be determined in the context of the strategies detailed in Sections 3.7.1 to 3.7.4, it may be necessary to place all additional developments on hold. If Zanzibar, its people and its resources do not have the capacity to cope with an increase in tourism numbers, the short-term gains will be high, but the long-term prognosis will be disastrous.
- All future developments in the industry must only take place once the long-term viability of the activities have been proven beyond a doubt.
- If there is no scope for expansion due to finite resources and capacity, then the existing industry needs to upgrade in all its aspects. By providing a better product with good and reliable services and infrastructure, tourists will be prepared to pay higher prices. The income generated by the industry can conceivably contribute more to the GDP without actually needing to expand in terms of numbers.

4 TOURISM DEVELOPMENT

4.1 FUNDING ARRANGEMENTS

One of the basic conditions for the establishment of an MCA is that communities within its boundaries derive some form of (financial) benefit. It is vital that this arrangement be honoured if communities are to remain willing and compliant participants in the management process.

According to Section 12(2) of the MCU Regulations, sources of funds for MCAs include:

- All funds received from Government for the implementation of activities in an MCA;
- all voluntary payments, donations or bequests received by an MCA from any sources[1]; and
- all fees collected in terms of Section 13(1) and which are detailed under Schedule B of the MCU Regulations

Under Schedule B, the primary source of funds will be the daily fee payable by tourists; this will be supplemented by fees from other activities such as boat anchoring, filming, research and education initiatives. At present, tourists pay U$3 per day to enter or

[1] This includes donor funding; an example being the funding being generated and used through the MACEMP programme.

undertake activities in the MBCA and MIMCA and U$5 per day in the PECCA. The new proposed fee is U$10, although it will be up to the Executive Committee of each individual MCA to determine whether the full amount is imposed or not.

According to Section 12(3), the fees, which must be paid into MCA-specific bank accounts, shall be used as follows:

- 70% for MCA operational costs (includes executive committee meetings, patrol budget and administrative activities); and
- 30% for supporting community activities as decided by the fishermen's executive committees.

4.1.1 Strategies

Operational costs

- As the 70% of fees generated from tourist-based activities will not be sufficient for daily operational requirements, operating costs for each MCA are likely to require substantial input from either Government or donor organizations. Increasing capacity for compliance monitoring alone (staff, boats, vehicles, fuel etc.) will require a large capital input. It is recommended that the MCA Managers develop business plans and budgets for improving their capacity to conduct effective compliance patrols and submit these to Government for the next financial year. Once the initial high capital costs have been covered, subsequent annual requests will be less, and needed to cover basic maintenance and running costs.
- The 70% of the fees generated from tourist activities can be used primarily for administrative costs and committee functions, with left over fees being used for compliance activities and maintenance.
- Consideration must be given to alternative revenue generation from tourist activities. In addition to the standard tourist fee for entering an MCA, activity-specific fees could be applied for each activity that a tourist participates in. If this is to work, however, the industry needs to ensure that it is able to offer a superior product; tourists will not mind paying for a service or opportunity provided that they get value for money. Paying for an inferior product will only serve to discredit the industry and encourage tourists to seek other destinations.
- At present, the tourist fee is payable only when a tourist enters an MCA, and this effectively excludes all terrestrial resorts located along the coastline that defines each MCA. Under the existing scenario, fees for the MIMCA are only generated from people entering the Mnemba Island area to dive. It is inconceivable that sufficient funds can be generated to assist with management and operations throughout the MIMCA from this single revenue stream. It is proposed that all tourists staying at or visiting resorts along the coast adjacent to each MCA be subject to the tourist fee as they all have a direct or indirect impact on the marine system as a result of their presence. Once again, tourists and the tourist establishments will need to see that money is being well spent. The concept of willingness to pay is usually underscored by the demand to see productive results. Conservation efforts will need to be

increased, and the results made available for scrutiny by tourists via pamphlets, websites or visible effects such as no-go areas that protect biodiversity.

Community benefits

Despite structures being in place to administer the 30% of the visitor fees that are generated for community activities, there appears to be a level of distrust (by tourist investors and individuals in communities) about how the funds are administered, with some fishermen even being unaware of any such funds. There is also a degree of mistrust between some of the MCA authorities and tourist investors (e.g. PECCA) – this is due to the issue of tourist fees and the management of the funds. The following is recommended:

- The individual MCA authorities must embark on a road show, which informs all communities and tourism investors about the fund, how (and by whom) it is administered, and the protocol required for applications for funding. Although this could be devolved to village committee chairmen, there is evidence that communication between committees and some individual villagers is not what it should be.
- Annual financial statements need to be made available to all communities and investors. These statements must clearly detail the fees collected, payout amounts, available balances and a list of all applications (and applicants), whether they were approved or not. True transparency and accountability (although referred to in the Regulations, they are not what they should be) will go along way to resolving any mistrust issues between the authorities and the communities/investors.
- The inclusion of multiple communities within each MCA means that a system needs to be implemented that allocates a fair proportion of the fund to each community. The allocation should be based on the extent to which the MCA and tourism industry has impacted their livelihoods. In order to accomplish this, a service provider will need to be appointed to conduct a socio-economic survey.
- Approval of applications and the subsequent allocation of funds must be done by the MCA Executive Committee after initial deliberation by the fishermen's executive committee.

4.2 INSTITUTIONAL ARRANGEMENTS

The main Government role players in the MCA tourism sector are the Commission for Tourism and the Ministry of Livestock and Fisheries. Other institutions that are involved to varying degrees include the Department of the Environment, Department of Land & Registration, Zanzibar Investment Promotion Agency and the Ministry of Finance.

The Commission for Tourism is responsible for administering the Tourism Master Plan and all tourism-related policies. While their main objective is to maximize the opportunities for the industry, this needs to be tempered by an understanding of the impact of the sector on the environment (bio-physical and socio-economic) and the concept of long-term sustainability. Any significant expansion in the tourism industry, in

terms of number of tourists and new developments, is likely to have substantial short-term benefits but it is the opinion of the authors of this report that the long-term impact will be detrimental to the physical environment and the people of Zanzibar (erosion of culture and traditional livelihoods and values).

The Ministry of Livestock and Fisheries comprises the Department of Marine Resources and the Department of Fisheries Development under the banner of Fisheries. The MCU falls under the control of Fisheries Development and is responsible for the development, management, regulation and implementation of all activities of the MCAs. The MCU is also responsible for appointing MCA Managers who fulfil the functions designated to them by the MCU as per Section 7 of the MCU Regulations 2012. An MCU Advisory Committee coordinates all activities within MCAs and must comprise representatives from each MCA, including the Manager, tourism investors and the fishermen's executive committees. The fishermen's executive committees for each MCA in turn comprise representatives from all the Shehia fishermen's committees within that MCA.[2]

Currently all patrols and compliance monitoring are conducted by the respective MCA rangers, with the Department of Fisheries (and occasionally the Navy) only providing assistance when specifically requested by an MCA authority.

4.2.1 Strategies

- The present system appears to function reasonably well, although there is room for improvement with regards to communication and dissemination of information to individual community members.
- The co-management approach that is envisaged and detailed in the MCU Regulations 2012 needs to be bottom up so that individual community needs take priority.
- The scheduling of meetings for the various committees detailed in the MCU Regulations 2012 needs to be adhered to.
- All management interventions need to be based on majority decisions after consultation with all affected stakeholders.
- The success of MCAs and the image they portray to tourists hinges on effective compliance monitoring of all activities. Government needs to support an increase in capacity (staff, vessels, vehicles and running costs) within each MCA, and bilateral agreements need to be entered into between MCAs and the Department of Fisheries that allows Fisheries staff to patrol within and intervene in MCAs on a more regular basis.
- As opposed to *ad hoc* developments, an overall tourism destination policy for each of the MCAs would help to guide the wider tourism sector in all their activities ensuring that all within the tourism system are working towards a common goal that is beneficial to all stakeholders.

[2] This may include Shehias from outside the boundaries of the MCAs - in cases in which they are affected by the proclamation of the MCA (e.g. Nungwi in the case of the MIMCA).

4.3 CODES OF CONDUCT

The direct impact of human activities on non-consumptive tourism resources has been detailed in Section 3.7.4 above. In order to minimize these impacts and thereby maintain the long-term benefits provided by these assets, the following strategies are provided:

4.3.1 Strategies

- Legislate the codes of conduct detailed in Appendices 1 to 3 (Section 4 of the MCU regulations 2012).
- Train staff from the MCU, Department of Fisheries (Marine Resources and Development Directorates) and the respective MCAs in terms of understanding the codes so that they may more effectively enforce them (they will be empowered to enforce the codes in terms of the MCU Regulations).
- In terms of priority, efforts need to concentrate on dolphin watching, the trampling of coral reefs by snorkel divers and the provision of permanent moorings for vessels to prevent anchoring on reef areas.

4.4 DOLPHIN AND WHALE WATCHING

Apart from the proposed code of conduct that aims to control the behaviour of tourists and vessels, additional measures are required to regulate the industry. These should not just be recommendations; if they are to have any real effect, they also need to be legislated in terms of the MCU regulations 2012.

4.4.1 Strategies

- The number of vessels currently registered must not increase.
- A trained MCA staff member (trained in terms of the code of conduct and aspects of cetacean biology and behaviour) must accompany all vessels on each excursion. Any vessel that deviates from the code or allows its clients to deviate from the code must have its licence suspended.
- Tickets for dolphin/whale watching may only be issued by recognized tourist operators and the respective MCA authority, and the price must be regulated. Tickets must be checked for authenticity by the MCA staff members that accompany the vessels.
- Enact legislation that regulates against informal operators - both beach boys (as ticket sellers) and unregistered vessels.
- Initiate research programmes that monitor populations and determine safe areas for dolphins where they may nurse, socialize and feed without disturbance.
- All registered operators must be part of a controlling organization (e.g. KIDOTOA in Menai Bay), whose functions are legislated and monitored by MCA authorities. The organization can also facilitate a schedule for activities that allows equitable access for operators to the dolphins/whales in terms of the code of conduct (e.g. number of vessels per day and time spent on site with the dolphins).

- The safety of the tourists is as important as the safety of the animals. Accidents and injury incidents will have a negative impact on the industry. Legislation must be enacted that provides for safety equipment and protocols on all vessels as well as a first aid qualification for all operators. Swimming with dolphins increases the risk of accidents and this should be considered by MCA authorities when deciding on whether to allow this practice or not.

4.5 ADDITIONAL OPPORTUNITIES

The expansion of the industry need not be just about increasing tourist numbers and hotel developments; the existing infrastructure can be used to exploit additional opportunities that are currently either absent or under utilized and local communities can be afforded more opportunities to be included in the industry.

4.5.1 Strategies

- The use of spearguns for commercial and artisanal fishing is currently prohibited in terms of the Fisheries Act (Act 7 of 2010). However, spearguns are allowed for sport spearfishing, which is essentially trophy-hunting by recreational divers. Currently there are only two operators that have licences to conduct spearfishing charters. The deep waters off Zanzibar offer a massive opportunity to develop this niche for the tourist market. Divers will pay high rates for the opportunity to shoot trophy game fish such as kingfish, sailfish, marlin, tuna and trevally. The activity can be regulated so that only game fish are hunted and no bottom fish (such as rockcod, snappers and emperors) are allowed. To avoid conflict, diving areas can also exclude areas heavily fished by local fishermen (mostly inshore). While good hunting is to be had almost anywhere offshore, it is recommended that marketing programmes make use of the Pemba Channel to attract clients as it is synonymous with big game fish. It is recommended that the industry pursue this in an aggressive marketing campaign to attract more divers and to encourage the licensing of more operators.
- Similarly, big game fishing and flyfishing appears to be under utilized. These represent significant industries in other nearby Island destinations, most notably the Seychelles, Mauritius and parts of Madagascar. Anglers will pay premium prices for high-class venues that offer good service (good vessels, knowledgeable skippers and guides) and excellent fishing. Sport fishermen are becoming increasingly environmentally aware and the sport fishery should be developed with a catch-and-release ethic in mind. In order to avoid conflict, no-go areas for sport and flyfishing can be declared. These must include areas utilized by local fishermen and recreation hotspots.
- Cultural tours within the major towns/centres are already aggressively marketed and well utilized by tourists. However, rural life is vastly different and has a charm all of its own. There is an opportunity for guided tours of rural settlements, with inhabitants from every village benefiting directly as tourists learn about their culture and livelihoods. The fish selling points alone are worth a visit, as fishermen vie to sell their catch in an intriguing process that is part of the fisherman's culture involving fishers, an auctioneer, and prospective buyers that include fishmongers.

- Jet-skis have recently made an appearance at Nungwi and appear to be very popular with tourists. However, it is recommended that no jet-skis be allowed anywhere in the MCAs due to their nuisance factor and safety concerns.
- Where economically and socially feasible, local communities should be encouraged to be a part of the tourism supply chain through sustainable business linkages; this is more likely to contribute to community approval and acceptance of tourism and the establishment of MCAs.

4.6 ACCESS

Areas where local inhabitants have had historical access to the beach have in some instances had that access restricted – particularly in areas that have been closed off due to resort-type developments. In some cases resorts advertise exclusive private beaches in order to attract clients, giving the impression that access to outsiders is being denied.

4.6.1 Strategies

- All citizens of Zanzibar should have the right to reasonable and equitable access to the coastal zone. With the exception of offshore islets such as Mnemba Island where agreements have been entered into between Government, the leaseholders and locals, access to the beach needs to be guaranteed. As a minimum, access should be available at least every 500 m along the coast, and all historical access points that have been closed need to be reassessed (footpath access servitudes through resort properties must be negotiated if necessary).
- All new developments must have public access points that allow local inhabitants to access the beach.
- It must be made clear to all leaseholders (again the offshore islets may be the exception) that there is no such thing as an exclusive beach. All people have the right to access and use any part of the coast below the HWM.

4.7 RESEARCH/MONITORING

Research into the socio-economic aspects as well as bio-physical impacts of tourism is needed. This research can be used to provide baseline data for monitoring programmes that measure the success of tourist-related initiatives as well as the impact on natural resources over time. Such activities will allow for informed management decisions to be made.

4.7.1 Strategies (Research programmes)

Socio-economic

- Identify and evaluate significant problems and successes within the industry; modify or adapt initiatives with problems and emulate initiatives that prove successful.
- Identify and develop new initiatives or enhance existing or established products (see Section 4.5).

- Monitor and document the impact of tourism on the social (cultural) and economic aspects of coastal villages/communities within the MCAs.
- Undertake a cost analysis for effective management of each MCA, concentrating on the cost of improving monitoring capacity, and use the results to develop business plans and budgets that can be submitted to Government or donor organizations.
- Determine the effectiveness of existing protocols and institutional structures to manage the community benefit schemes.
- Establish the economic implications of a rapidly growing tourism industry in relation to limited resources and infrastructure, and compare the short-term gains to the long-term benefits associated with providing a better product within the existing industry.
- Determine the socio-economic impact on coastal communities and the industry of establishing larger (or more) no-go areas within the MCAs. Given the levels of resource use and the number of tourists, recovery can only occur in the absence of human activities.

Bio-physical

- Continue to monitor the artisanal fishery, concentrating on the level and areas of effort, catch-per-unit-effort, total catch, species composition and size frequencies. Levels of effort and changes in catches need to be related to the increasing demand to supply the tourism industry.
- Determine the population size and dynamics of dolphins in MCAs. Clearly identify no-go areas based on behaviour, i.e. nursery and feeding areas, where dolphins may interact without human interference.
- Conduct surveys of reef, fish, invertebrates and mammals to identify priority areas that need to be considered for protection (no-go areas). Some no-go areas may be considered too valuable to allow any human activities, while others may benefit from excluding only certain activities (e.g. no fishing to allow for reef and fish recovery; and no dolphin watching to allow for natural population interactions). No-go areas need to make up a reasonable percentage of an MCA area if the "Conservation" part of the MCA is to be meaningful (e.g. the no-go fishing areas in the MIMCA and MBCA comprise 0.002 and 0.0025% of the MCAs respectively, which is insignificant). The MBCA and MIMCA can follow the example being set by the PECCA, which has several additional areas under consideration for no-go (Core) zoning - these include existing specific use sites at the Fundo Gap, Coral Gardens and the shipwreck at Ras Ufunguo as well as a new proposed area around Kashani and Kokota Islands; see Figure 4.
- Continue to monitor reef health at key dive sites in MCAs and in no-go areas for comparison. Monitoring aspects need to include coral species, percentage cover, degree of damage and reason for damage, the presence of COTS, and fish indicator species.
- Establish no-go beach areas to protect turtle nesting sites and monitor recovery as measured by the number of nests, sightings and hatching success.

5 IMPLEMENTATION

This plan has been developed as part of the MACEMP initiative. However, the MACEMP programme is closing in late 2012, and will not be able to assist with the implementation of this plan. Although the MCAs fall under the immediate jurisdiction of

the individual Managers whose responsibilities are determined by the MCU and associated Regulations, implementation cannot be left entirely to these entities. The Commission for Tourism will be a key role player as will the Departments responsible for land use planning, finance (Treasury), the EIA process and infrastructure development & maintenance. Much of the research and monitoring will need to be coordinated by the IMS.

It is recommended that the existing MCU Advisory Committee, which already comprises the key role players mentioned above, be used to facilitate the implementation. Clearly the Committee cannot comprise representatives from all the fishing villages, investors and operators in all the MCAs, thus it is proposed that the respective MCA Managers on the Committee provide the link with individuals and Shehia committees and operators/investors within each MCA.

There are some aspects of this plan that can be implemented within the next two years (e.g. motivating for funding to increase monitoring capacity within MCAs), but some aspects will need to wait for survey or research data before decisions can be made (e.g. larger or more no-go areas for various activities). Key to the success of this plan is the determination of the carrying capacity based on the recommendations detailed in Section 3. It cannot be over-emphasized that Government needs to seriously consider the implications of short-term gains from a rapidly growing unsustainable industry compared with long-term assured gains from a smaller yet more sustainable industry.

6 CONCLUSION

The islands' physical characteristics create thresholds for many impact parameters, some more subjective than others. For example, while the availability of water and electricity clearly limits the number of hotel developments, guesthouses and visitors that the MCAs can accommodate at a given time, the exact number depends on patterns of consumption. This will also fluctuate from one MCA to the other. Thresholds of this kind can potentially be extended through the selection of technology, such as renewable energy sources e.g., micro wind turbines, solar panels or water conservation/harvesting. Certain accommodation providers within the three MCAs have successfully embraced this albeit to different levels. The overall number of visitors can also be increased through measures to disperse them among different areas of interest (e.g. rotational scheduling of boats, alternate dive sites, and limiting visitor permits). It should be noted that the development of physical infrastructure will necessarily entail some modifications to the natural environment, which would eventually also impose limits to the level of expansion.

The carrying capacity measures recommended in this plan are based on the premise that decision-makers are aware of risks and trade-offs, and use these criteria as a basis of informed decision-making. There are few clear, objective thresholds. Instead, MCA decision-makers as well as Government decision-makers (e.g. Commission for Tourism; Ministry of Infrastructure Development) must engage in adaptive management, based on long term observations and careful monitoring of social and environmental parameters and a precautionary principle approach.

Carrying capacity is a journey rather than a destination, and as such, requires constant monitoring. It is obvious that PECCA has a greater potential for increased tourist investment (hotel developments and activities) than the MBCA or MIMCA, but to arrive exactly at what these figures may be is not only impossible, but also the less desirable approach to understanding the complexity of the carrying capacity of any MCA.

The key to ensuring the efficacy of the MCAs and therefore the long-term survival of tourism-associated activities is to increase the capacity of the MCAs with regards to management activities and compliance monitoring. Direct funding from Government will be required to achieve the levels of capacity necessary to give any credence to the MCAs as true conservation areas; fees generated from the tourist fee schemes will not be sufficient to drive this undertaking. The capacity referred to includes all aspects from manpower, to training, to infrastructure and capital equipment.

In summary, the following principles will be instrumental in supporting all existing and future tourism developments:

- The precautionary approach principle;
- The polluter pays principle;
- The sustainable development principle; and
- Stakeholder participation and transparency, which extends to stakeholder representation on decision-making bodies, and the timely and accessible disclosure of information (e.g. benefit scheme/fund) with *ad-hoc* consultation.

APPENDIX 1

CODE OF CONDUCT FOR RECREATIONAL DIVERS (SCUBA AND SNORKELLING) AND DIVE-BOAT OPERATORS

All SCUBA operators, instructors and divers require a range of qualifications in order to participate in this activity. These qualifications may be obtained via training with a number of internationally recognized organizations, namely National Association of Underwater Instructors (NAUI), Professional Association of Diving Instructors (PADI), Scuba Schools International (SSI), British Sub Aqua Club (BSAC) and Confédération Mondiale des Activités Subaquatiques (CMAS).

Divers/instructors are obliged to operate within a code of conduct dictated by the organization to which they are affiliated. There is no single code of conduct for safety or environmental awareness, but all organizations base their codes of conduct on the standards set by the American National Standards Institute (ANSI) or the World Recreational SCUBA Training Council (WRSTC). ANSI provides guidelines and sets standards in a number of industries to help ensure the safety and health of consumers (participants) and the protection of the environment. The WRSTC has its own set of standards, but these are based on the standards set by ANSI. SCUBA organizations may subscribe to one or the other and base their codes of conduct on the standards set by that body. Most SCUBA operators also subscribe to the Divers Alert Network (DAN), although this is not compulsory. DAN provides a diving-related medical service, concentrating on oxygen administration for the treatment of decompression-related incidents. It is strongly recommended that all commercial SCUBA operators in the area subscribe to this service.

SPECIFIC CODES OF CONDUCT (Source: Ezemvelo KZN Wildlife)

Divers and boats

- All dive operators to brief divers on these codes of conduct before excursions.
- All boats to fly the diver-down (Alpha) flag and carry a qualified back-up diver, first aid kit and oxygen supply equipment (should be affiliated to the DAN – see above).
- No boats may anchor over any dive site or reef. All vessels must follow divers from the surface.
- Each dive group leader must dive with a surface marker buoy that can be followed by the surface vessel.
- All divers returning to the surface must do so as a group or up the line attached to the surface marker buoy.
- Only SCUBA divers with a recognised open-water qualification will be permitted to SCUBA dive. Any visitor capable of swimming may snorkel and it is recommended they wear a buoyancy aid.
- Dive within the limits of training and experience and exercise buoyancy control skills to prevent contact with the coral reef (numbers of divers need not be regulated if they

adhere to good diving practices and do not damage the reef). Novice divers to master buoyancy control over sandy areas (or even the resort/hotel pool) before venturing onto reef areas.

- Avoid all unnecessary contact or interference with marine life and habitats – divers engaged in snorkelling over shallow reef areas may not walk on or trample the reef.
- Night diving requires exceptional care because it is much more difficult to be aware of ones surroundings. Strong torch beams or lights can dazzle fish and cause them to harm themselves by blundering into surrounding coral or rocks. Others are confused and disturbed if torch beams or lights are pointed directly at them. Be prepared to keep bright lights off subjects that exhibit stressed behaviour, using only the edge of the beam to minimise disturbance.
- Show consideration towards fellow divers and other users.
- Divers to maintain a horizontal swimming position to prevent fins trailing onto the reef.
- Ensure gauges and other equipment do not hang loose and trail on the reef.
- Human contact with marine fauna and flora can cause disease, infections and transfer toxins to marine animals and visa versa.
- The wearing of gloves is discouraged as this would prevent people from holding onto the reef, thereby minimizing the chances of diseases being transferred between corals.
- Do not brace against or stand on reef habitats.
- Do not anchor yourself to or hold onto the reef for any reason (e.g. to stabilise in order to take photographs).
- Do not touch the reef or sedentary animals anchored to the reef.
- Do not surround or corner any marine animal.
- Do not chase, disturb, harass, touch or ride any marine animal (particularly eels and turtles).
- Do not feed, bait or chum for any marine animal.
- Do not disturb, move or remove any item from the reef as a souvenir.
- Do not litter or allow wastes to enter the environment.

Diving with sharks (including Whale Sharks)

All codes of conduct for recreational/sport divers apply here. In addition:

- Do not enter recesses, overhangs or caves.
- Do not descend on top of a shark or shiver (group) of sharks.
- Do not approach closer than 3 meters from the head, tail or body of the shark.
- Stay out of the sharks' 'comfort zone' or space.
- Sharks always have the right of way.
- Allow sharks to move freely, do not corner them, block an exit of a cave or trap them against the reef.
- Do not panic or get excited if approached by a shark. If a shark approaches you, remain still, calm and breathe slowly, a sudden exhale can startle a shark.
- In a current (drift dive), pass over or around sharks and not through a shiver of sharks.
- Do not touch, ride, harass or chase any shark under any circumstances (this code also applies to turtles and manta rays).

- Do not approach a shark head-on but rather from an angle.
- Do not shine bright lights at sharks; strobes and flashes can startle sharks.
- No 'Flash' photography to be used around whale sharks.
- Never feed or chum to attract a shark.
- No shark repelling devices may be used.
- Vessels may not approach a whale shark.
- Vessels should take care not to physically impact whale sharks or chase after them.
- Do not swim or boat in front of a whale shark.
- Whale Sharks should be observed for a few minutes before swimmers enter the water to determine direction of travel and behaviour of the shark.
- Swimmers must be cautious at all times; whale sharks can inflict serious injury from a strike with its tail or fins.
- Whale sharks may not be touched or "ridden" by divers.

Underwater Photography

All codes of conduct above (recreational/sport and shark diving) apply here. In addition:

- Novice divers should not attempt taking pictures underwater. Novices thrashing about with their hands and fins while conscious only of the image in their viewfinder can do untold damage (to the reef and other divers).
- Photographers and those modelling for photographers should ensure that careless or excessively vigorous fin strokes and arm movements do not damage the reef.
- Photographers should carefully explore the area in which they are diving and find subjects that are accessible without damage to them or other organisms.
- Care should be taken to avoid stressing a subject. Some fish are clearly unhappy when a camera invades their "personal space" or when pictures are taken using flash or lights.
- Divers and photographers should never kill marine life to attract other types to them or to create a photographic opportunity, such as feeding sea urchins to wrasse.
- Creatures should never be handled or irritated to create a reaction and sedentary ones should never be moved.
- Clown fish and other territorial animals are popular subjects but some become highly stressed when a photographer moves in to take a picture. Photographs should be taken and the photographer must then move away from area.
- Care should be taken when photographing in caves, caverns or even inside wrecks because exhaust bubbles can become trapped under overhangs killing marine life. Even small pockets of trapped air, which allow divers to talk to each other inside them, can be lethal for marine life.
- The image in the viewfinder can be very compelling. Photographers should remain conscious of their position and of the marine life around them at all times. In sensitive areas, they should avoid moving around on the bottom with their mask pressed up against the camera viewfinder.
- Do not use torches or camera-focus to highlight a specimen for a photograph.
- Use balanced natural light rather than artificial light for a video.

APPENDIX 2

CODE OF CONDUCT FOR TURTLE TOUR OPERATORS (Source: Ezemvelo KZN Wildlife)

Turtle (Drive) Concession: can be defined as a permissible activity where a tourism operator is allowed beach access at night to take clients (at a price) for a night drive to view nesting turtles in their natural habitat. **No driving concessions are recommended by this plan, and as such no code of conduct regarding vehicles has been included.**

Turtle (Walk) Concession: can be defined as a permissible activity where a tourism operator is allowed beach access at night to take clients (at a price) for a night walk on the beach to view nesting turtles in their natural habitat.

- Concession guides are to be suitably qualified (with best information on turtle biology, population status, management principles and conservation approaches), registered as guides and must conform with any Regulation in this regard.
- Walk concessions should not use any light on the beach to search for turtles. Allow night-vision to adapt and walk on the low shore. Emergence tracks are clearly visible on the wet sand even during very dark/overcast conditions.
- Tourists should be restricted to less than 10-15 individuals per group. This is to ensure a quality experience for the guest and ease of management for the guide. The number of guests is largely irrelevant to turtles as long as it is a well-behaved group of people.
- A maximum of two officially recognized Concessions may operate per night.
- Tours to operate daily between 7 pm and 12 pm.
- Children should be strictly controlled so as not to interfere or scare the animals.
- Movement and noise should be kept to a minimum with no running, jumping, screaming and shouting allowed near turtles. Turtles are extremely sensitive to movement. All movements should be calm and unhurried. Restricting noise, however, is more for the tourist experience than for turtles. Turtles cannot hear very well on land, so talking can continue in an almost-normal voice.
- Nesting females should not be approached in any way while they are exiting the surf. They are particularly vulnerable at this stage and will scan the shoreline for movement. Any movement will be interpreted as threatening and force the animal to turn back.
- A turtle should first be approached by the guide to assess the state of nesting she is in, the direction she is facing and the position of the nest (a nest on a particularly steep slope may cause the nest to collapse and be deemed unsuitable for a group to view). None of the turtles should be approached when still “body-pitting” as they are likely to be scared, and there is much sand flying.
- Once the guide has assessed the nest site to be suitable, the crowd can approach the nest site in a compact group from behind the turtle. The ideal time to approach is when the egg-chamber is ~30-40 cm deep. Guests can sit/stand behind the female with all lights off.

- All individuals should stay behind the shoulders of the turtle with about a 1m buffer, and no person shall approach the head of the turtle at any time. No person shall ever step over a turtle either. It will most certainly scare her enough to interrupt egg-laying and abandon her nest even if she is in a nesting-trance, as it is considered extremely threatening to the turtle. It is also likely to make her change position and may cause her to slip back into the nest or collapse the nest.
- A dim light can be placed behind the flippers in order to observe the digging, but make sure that the dim, small light is placed sufficiently low so that the carapace casts a dark shadow over the head of the turtle.
- Dim torch lights should be used at all times or lights covered with a red filter. Spotlights should be avoided at all times. Lights should not be shone into the eyes of the turtles either, even when dimmed.
- Flash cameras should only be used when the turtle has completed the nesting and is starting to cover-up. Once the female has turned and is moving down the dune base all flashlights (torches) should be switched off and photography should cease until the female has reached the water. This is very important as she will require the light horizon to orientate.
- Flash photography may only be done at least 5m from any nesting turtle – and flash photos are to be taken at a 45 degree arc from the rear of the turtle.
- No flash photography may be practiced on any turtle exiting the sea before she has started nesting.
- No eggs or hatchlings should be dug-up or handled in any way unless by a conservation officer or specially trained person, and never later than 3 hours after nesting. Any movement then will most certainly kill the embryos.
- No handling of adults should take place without training and for no purpose other than monitoring.
- Nests that are about to emerge are extremely sensitive as the hatchlings are sitting under the surface (digging their way up for days); any trampling on these nests can kill a complete batch of hatchlings.
- Hatchlings are extremely vulnerable and should never be picked up and carried to the ocean, as they require the imprinting across the beach and the “warm-up” for the long swim out to their nursery areas.
- Flash photography of hatchlings should be allowed for a very short time (5-10 mins) and then hatchlings should be allowed to crawl without any artificial light to the ocean. Guests should take extreme care not to trample hatchlings.
- Only one light may be used to view hatchlings and must be directed from the front of the hatchlings only.
- With a newly emerged nest, the guests can create a 2m wide corridor on either side of the nest, watching the hatchlings crawl down between them. The guide should be standing in front, towards the low-shore, leading the hatchlings down the beach with a dim light. This should only be allowed for ½ of the way. The rest of the journey should be done under natural light.
- Care should be taken not to shine lights onto the water as this will attract predatory fish, which will enjoy new hatchlings as morsels and negate conservation efforts. The same regulation should be applied throughout the nesting/hatching area, marking

access points, beach ramps, or camps, for the hatching season. These lit-up areas form permanent nightly feeding stations.

- Turtle Tours shall be available to MCA visitors seven days a week irrespective of public holidays.
- The Concessionaire shall ensure that the appropriate safety standards and procedures are in place and followed by its staff at all times.
- At least one of the Concessionaire's staff accompanying guests shall be properly trained in first aid.
- A fully-equipped first aid kit shall be on hand during every excursion undertaken.
- No vehicles to be used on the beach, not even to transport disabled persons.
- Guides to be clearly visible wearing reflective vests.
- No torches (other than that carried by the guide).
- The concession holder is responsible for ensuring the correct number of people.
- The concession holder is responsible for controlling the discipline and behaviour of the people in their group.

APPENDIX 3

CODE OF CONDUCT FOR WHALE AND DOLPHIN TOUR OPERATORS

Sources include:

http://www.whalewatchwestcork.com/conduct.html
http://www.idw.org/html/dolphin_encounters.html
http://www.afcd.gov.hk/english/country/cou_vis/cou_vis_mar/cou_vis_mar_mpvs/files/code_of_conduct_dolphin.pdf
http://www.hepca.com/conservation/projects/protecting-wild-dolphins
http://www.mekong-dolphin.com/dolphin-info12.htm

1. When whales or dolphins are first sighted or encountered at a distance, craft should maintain a steady course and a speed of no more than 10 knots.
2. At a minimum of 100 m from the animals, and when practical, stop the vessel or assume a no-wake speed (< 5 knots) to determine whether they are feeding, traveling or searching for food and to assess what direction they may be moving in. Never cross the path of cetaceans attempting to cut them off or anticipate their moves and do not make any sudden course changes. This applies to all species encountered.
3. Never approach animals at 90 degrees to individual animals or groups or head-on or directly from behind. Always approach from an angle. This applies to all species. However, some species will frequently approach boats of their own volition from a head-on position and boats should be brought to a standstill until they have engaged.
4. All boat interactions with cetaceans to be carried out at no-wake speed or less (5 knots) and a vessel's course should attempt to parallel that of the animals' course.
5. All engine propellers should be fitted with a guard to prevent injury, both to animals who may engage the vessel and to swimmers/divers in the water around the vessel.
6. Never engage engines in reverse when in the vicinity of all species.
7. When leaving the field of interaction to a distance of at least 400 meters from the animals, boat speeds should be no more than 5 knots.
8. NEVER make rapid accelerations TOWARDS or AWAY from cetaceans however far away they may be. Remember that any interactions must be decided by the animals and no pressure to establish contact must be imposed.
9. Marine mammals should NEVER be pursued under ANY circumstances. This applies to ALL species.
10. Never split up groups of cetaceans (of particular concern are mothers and calves). If you find yourself inadvertently in this position stop the boat and remain stationary with engine ticking over until the animals have moved away. This applies to all species.
11. In the case of dolphins, they will very often approach craft and may engage in bow riding. Always allow dolphins to approach a boat rather than attempt to go after them.
12. If dolphins engage voluntarily and bow ride be very vigilant, especially for young and adolescent animals as they may be less experienced than adult animals around boat bows, keels and propellers.

13. If there is any swell on the water and dolphins are bow riding always attempt to travel downwind or in the same direction as the wave train to avoid rapid "up and down" bow movements associated with heading into wind and waves.
14. Never make sharp, sudden alterations to course when dolphins are bow riding.
15. Maintain a distance of at least 100m from whales. This distance is often close enough to influence feeding behaviour patterns in some species. If whales pass closer to the boat of their own accord, engines must be turned off to allow "passive" viewing.
16. Maintain a distance of at least 200m between any other boats in the vicinity when viewing whales.
17. Attempt to steer a course parallel to the direction whales or dolphins are taking.
18. Do not corral whales or dolphins between boats. If this inadvertently happens due to the individual's or group's movements, boats should be stopped in the water with engines at idle until animals have moved away.
19. If dolphins should enter a lagoon or an area inside a fringe reef vessels should not pursue them.
20. Special care must be taken when young calves are seen - do not come between a mother and her calf.
21. Successive boats must follow the same course.
22. All approaches to a viewing area when another boat is present should be on the side opposite to any animals present. If there is any doubt use your radio and talk to the other boat/s.
23. No more than two vessels should interact with individuals or groups of cetaceans at any one time.
24. As a general rule, boats should not spend more than 15-20 minutes with whales or dolphins while underway or 30 minutes if engines are off and passive viewing is taking place and the animals stay in the area of their own accord.
25. All boats should stick rigidly to time limits. This will reduce the cumulative impact of many vessels on animals present and demonstrate consideration to other viewers, the environment and ABOVE ALL, the whales and dolphins being viewed.
26. Never encourage the boat skipper to get closer to animals and dissuade others from doing so politely. The best whale watch operators are those who abide by a very strict code of conduct and are thoughtful of the animal welfare issues and the environment. They are frequently those who have the best sightings.
27. Make as little noise as possible when you are in the presence of cetaceans. Sound travels furthest through water and can sound very loud to aquatic animals. When safe, engine off (passive) encounters may yield some of the most memorable encounters with cetaceans.
28. During photography with all marine mammals flashes should be turned off.
29. All sonar devices (depth sounders, fish finders) should be switched off when a vessel is in the vicinity of whales and dolphins. These acoustic reduction measures are addressed as a precaution against noise pollution.
30. Always be aware of signs of distress. If you think animals are distressed leave the area of interaction immediately and very slowly.
31. Whenever a vessel is upwind of and in the vicinity of cetaceans, engine exhaust emissions should be minimized by shutting down one or more engines if it is safe to do so.

32. Do not litter or dispose of any fuel, oil or other pollutants in the waters.
33. DO NOT attempt to swim with whales and dolphins (for their safety and that of the tourist) and do not touch them.

Although strongly against this activity, if swimming with dolphins is allowed by the individual MCA Authority, the following Code of Conduct should be adhered to:

- Swim gently and quietly
- No more than 10 swimmers in the water at any one time
- Let the dolphins approach and decide if and how to interact
- Avoid noises
- Do not chase dolphins
- Touching and feeding dolphins is strictly forbidden
- Always use fins, mask and snorkel