

MOZAMBIQUE ANNEX X. DLIST SUMMARY REPORT VILANCULOS

Vilanculos town is located on the coast, around 500 km north of Maputo, in the central parts of Mozambique. Across the bay from the town of Vilanculos is the Bazaruto Archipelago National Park which was gazetted in 1971 and spurns an area of over 1,430 km². The archipelago is rich in biodiversity with a healthy coral community, many sea birds, dolphins, sea turtles and even one of the few (or the only as claimed by some) viable dugong populations in the entire Western Indian Ocean region. A recent survey by WWF estimates as few as 60 dugongs remaining. The current management agreement (for the Bazaruto Archipelago National Park) between the Ministry of Tourism and an NGO called International Conservation is unclear and the only enforcement taking place at the moment is carried out by the rangers based on the islands.

The bay between the mainland and the islands is mainly made up by seagrass meadows and sand banks and there are some mangrove areas near the river mouths in the bay. The mangrove stands support juvenile fish and reduce the sediment load in the bay as well as out in the archipelago and are therefore extremely important for the health of the entire ecosystem. The terrestrial area around Vilanculo town is not very fertile, with sandy soils and the main vegetation consisting of coconut palms, cashew nut and mango trees. There are also found lakes around the town area, some with freshwater, which potentially are an asset for tourism, tilapia fishing as well as a fresh water source for the town and for irrigation agriculture.

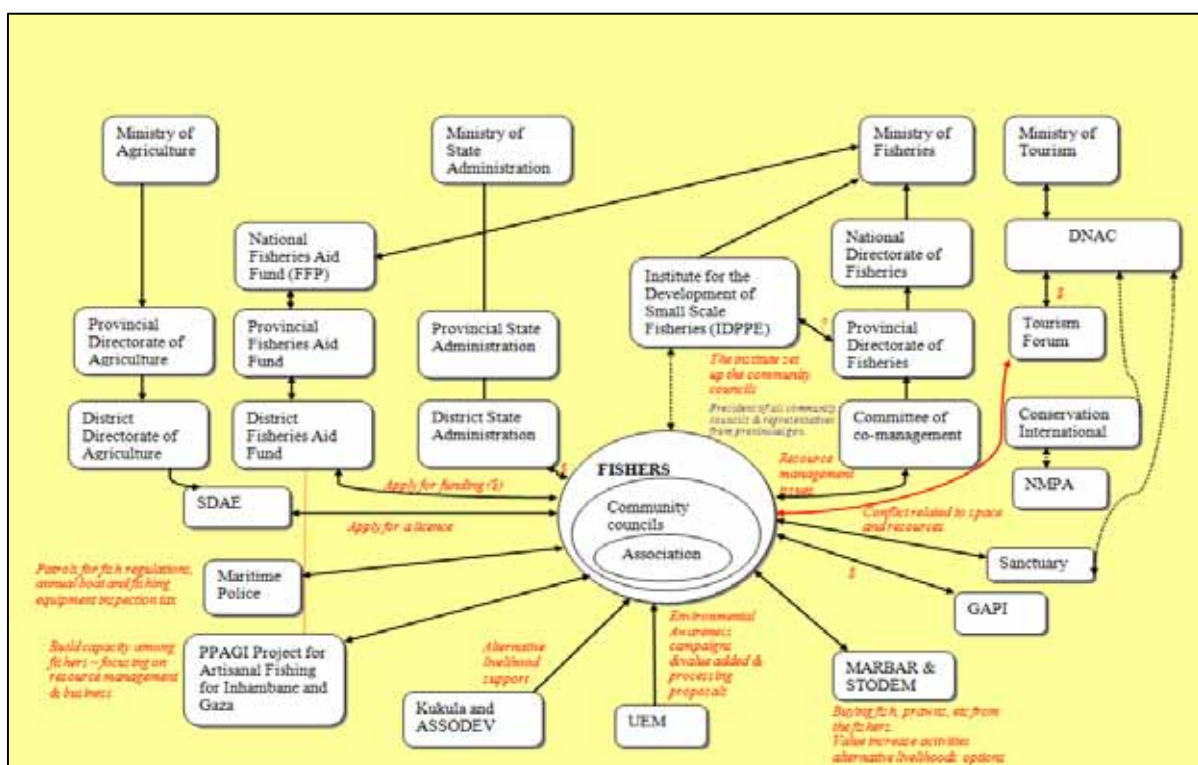
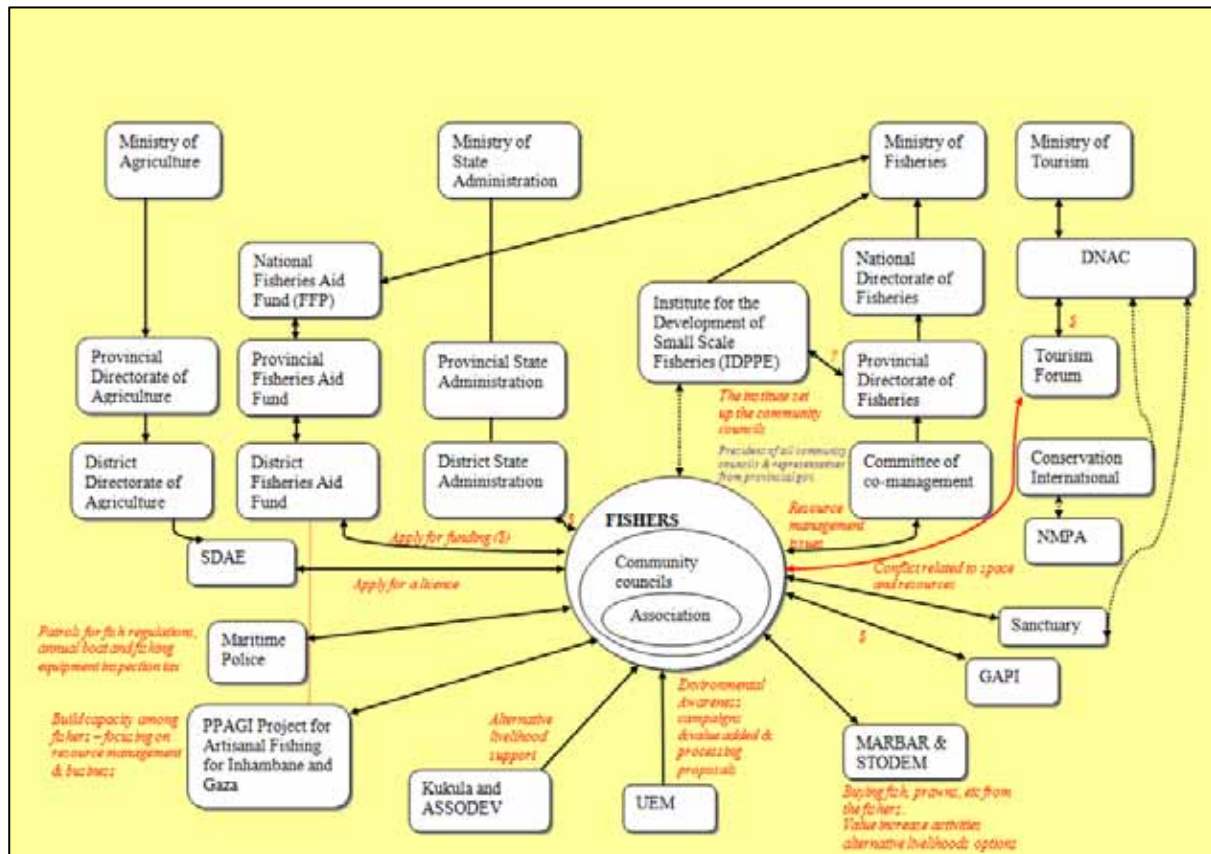


Figure 9: Stakeholder map for Vilanculos – with the fishers in the centre

Even though the people in Vilanculos at times engage in subsistence agriculture, their main source of income and protein is through inshore fisheries¹. There are about 150,000 inhabitants in the district of which an estimated 30 000 inhabitants live in the urban area (municipality) and 120,000 in the rural part of the district. The population growth rate in the Vilanculos town is estimated at 8.3% with the majority of the people not engaged in the formal economy. Due to the high level of dependency on the natural resources and the rapid population increase in the area along with a constantly growing tourism

¹ For more information see the Vilanculos District Tourism Master Plan, 2010

industry – the pressure on the coastal and marine resources is growing rapidly. Therefore, there is an urgent need for action to ensure a more sustainable resource use. The fishers in Vilanculos are part of a wide network of stakeholders when it comes to the use of marine and coastal resources. There are many levels of national, district and local government and NGOs, local businesses and others that influence the lives of the fishers. A stakeholder map with draft links between the different groups is shown in Figure 9.



1.1 Can the marine and coastal resources support the community?

The artisanal fishery in Vilanculos targets the sand oyster, juvenile fish in the seagrass areas and the blue swimming crab as well as prawns. When targeting fish the most common method is to use fine-meshed drag-nets; most boats are sail-powered and neither cold storage nor ice-making facilities are available to the artisanal fishers. These factors impact the value that can be added to fished resources. The crabs are sometimes caught with drag-nets, but the most common method to catch them is by walking in the sand at low tide with a spear – spearing almost anything that moves. Both the method of netting and spearing of crabs result in a relatively high % of juvenile individuals as well as egg carrying females being caught and killed (see Figure 9). Adult prawns are usually caught by trawling with nets in front of the river mouths, but targeting juvenile prawns by dragging mosquito nets in the river mouth is also very common and of course, very destructive for the prawn population in the area. These juvenile prawns are dried in the sun and sold for local consumption and bring in a very low price. Fishers as well as traders in Vilanculos have reported a decline in catches in the recent years and most people recognize that there is a need to find more sustainable fishing methods to reverse this trend.

The lack of fish has been one of the main problems identified by the artisanal fishing community in Vilanculos. It seems like most fishers don't know why the fish stocks have decreased in the last 5-10 years, but different reasons such as illegal long liners, pollution from the gas exploration company (SASOL) and too many fishers have been mentioned among the likely causes to this big problem. The artisanal fishers are suffering because they can no longer support their families on the fish that they catch. Some of the fishers, who mainly engage in drag net fishing along the beaches when the tide is right, reported that they sometimes don't even catch enough fish to feed their own families when they divide the catch between the fishers in the team. Another problem is that the amount of catch is very unpredictable, sometimes leading to a lot of waste when the catch all of sudden is bigger than expected and the group of fishers don't have the facilities to store and distribute it effectively.



To reduce the pressure on the resources further it has been suggested that more sustainable fishing methods should be introduced in the marine

Vilanculos at a glance...

Two field trips have been undertaken thus far. The latest field trip, in February 2010, included a site visit by the MEDA coordinator Ms. Clousa Maueua from the "Instituto Nacional de Hidrografia e Navegação (INAHINA). The DLIST team has included marine biologists, LED specialists, stakeholder involvement specialists, a heritage specialist and tourism specialists. The LED planning process has not been started yet, but there have been 16 interest group meetings including with fishers, academic institutes, government, NGOs and private sector during the field trips. There have been 77 individual interviews, and 3 group sessions/film festivals conducted thus far. The team met with the Mayor of Vilanculos District from time to time to give feedback and obtain valuable input from him. Organizations involved include the Ministry of Fisheries, Ministry of Agriculture, Ministry of Tourism and the Ministry of State Administration and various departments under these ministries. The DLIST team met with the fishers association – a community based group in Vilanculos. In addition, they also worked with the Eduardo Mondlane University and some groups in the university, namely Tudo Verde. Private sector involvement included fish and seafood processing factories such as "Café de Pesca" and "Stoben", tourism operators like Dive Bazaruto, a fish and prawn farming factory (MARBAR) and SASOL. The team met with various NGOs including KUKULA, GAPI, WWF, Conservation International (CI) and ASSODEV.

fisheries. One of the "quick-win" methods that have been identified so far is to ban all methods other than cages for the crab fishing which mainly targets the blue swimming crab. Today this fishing uses mainly spears and drag nets, which means that crabs of all sizes will be caught and killed as well as female crabs with eggs. If the only method allowed was catching fish with cages, then rules on minimum size could easily be introduced along with a ban on killing the egg-carrying females. There are a number of international companies and NGOs that are involved in this type of sustainable crab fishing initiatives and many are willing to assist by sharing lessons learned, give input on how traps can be produced locally, etc. The DLIST team have been in contact with people at the Sustainable Fisheries Partnership (<http://www.sustainablefish.org/>) and Phillips Foods discussing future collaboration possibilities for the area around Vilanculos. Another opportunity which would reduce the pressure on the marine fisheries is to encourage fishing of Tilapia in the river and lakes. More about this opportunity is found below under the alternative livelihoods section.

In general the fishers in Vilanculos have nothing against the Bazaruto National Park and they are positive to conservation efforts. This is quite

different from other parts of the WIO, and there may be some lessons that can be learned here. They do however see a conflict with tourism operators that sometimes destroy their nets and other fishing gear. Since much of the tourism activities in the area are linked to the national park, it would be good with improved communication between the park management, the fisher's association and the tourism association. To really address the issue of conflict between the fishers and the tourism sector, it will be necessary to find a way so that the fishers can participate or contribute to the tourism activities and benefit from these activities in the area.

Another idea has also been raised which would address the issue of unsustainable fishing in the area. It was suggested that a compulsory course in basic marine ecology, consequences of destructive fishing methods and how to fish more sustainably should be introduced in association with issuing people with licences to fish. Both fishers and educational initiatives would benefit from this type of compulsory training that could be compared with the training people have to go through before getting a drivers licence.

1.2 Alternative livelihood options leading to poverty reduction

For the community in Vilanculo, it was seen as very important to find alternative livelihood options, mainly because of the changes in the environment and the diminishing resource base in the coastal and marine environment. They have identified that they need more education, more alternative livelihood options and better law enforcement of fishing restrictions as well as stopping local pollution. At the moment, they have no reliable alternative livelihoods options during the two months of the year when drag netting on the beach is prohibited. Most of the fishers have small plots for farming, but with irregular rainfall and increased cyclones along with poor soil quality, the farms can no longer sustain the fishers and their families during these periods. And the artisanal fishers were complaining that they have no other alternatives to turn to for income generating activities.

Some of the solutions for alternative livelihoods that came up in the group interviews as well as individual questionnaires were:

1. Animal farming has come up as a possible alternative livelihoods option for the fishers, as it can be done in the Vilanculos area without requiring to provide much additions of feeds, etc. Depending on what kind of animal farming the fishers would engage in, they would need training and assistance with the initial investment as a type of micro-finance loan. It has been identified that there is a good market in Vilanculos for chicken as well as eggs, and also for pork (particularly from pink pigs).
2. Another option that has been suggested is to re-introduce game to the area around Vilanculos. A group of people who are now fishers could set up a project where they keep game in a specific area and either use it as a tourist attraction, or even keep the game for hunting. The vegetation around Vilanculos is said to be very suitable for game and not much extra care would be needed as game is generally more tolerant than cattle or other livestock to common diseases in the bush. As a start to the game park initiative, a small scale "animal park" for children could be set up and if it has the desired effect on tourists and brings income to the local community, it could later be expanded to a bigger game area. The DLIST team encountered a potential partner that is eager to explore a joint venture.
3. Cashew nuts grow everywhere in Vilanculos and with very little extra care of the trees during the growing period, nuts would be of much higher quality and could then be processed and generate good income to the community. The University of Eduardo Mondlane² has set up a cashew nut farm where different types of fertilisers are tested to see what gives the best nuts. This initiative could easily be expanded to the local communities and the cashew nut production would be enhanced in the area. To then combine the farming activities with skills on how to

² The DLIST team has forged a strong relationship with staff and field workers from the satellite campus of the University of Eduardo Mondlane that has already participated in some of the DLIST activities and provide strong possibilities for continuation during the implementation phase.

roast, process, and pack the nuts, a very attractive product could be created locally and sold on the market as well as to the local hotels for consumption by tourists who visit Vilanculos.

4. Another promising option as an alternative to marine fisheries is fresh water lake and river fishing and along with Tilapia farming. There is a local expert in Tilapia farming who has experimented with community-based Tilapia farming initiatives in the river and sees great potential in this activity. It might also be possible to enhance the natural Tilapia stocks in the small lakes around the district by re-introducing a new gene pool to the existing Tilapia populations in all the hundreds of small lakes found around Vilanculos. This new gene pool could be consisting of 5-10 "fresh" individuals from the river and this would boost the existing population dramatically, as has been seen in two of the lakes near the river where this happened naturally during the last big flood a few years ago.

In order to achieve any sustainable and long term change in terms of more sustainable fishing, alternative livelihoods activities, it is very important that all these initiatives are combined with basic environmental education and training in financial management. Many initiatives already exist related to training, but there seems to be a lack of awareness about these initiatives and that has to be improved.

1.3 Weaknesses and opportunities for sustainable community development

Lack of funding for better boats, improved fishing gear as well as for alternative livelihoods options is another big problem for the fishers. There are a few different organizations that provide money in the form of loans for people to invest in new boats, etc. It is however difficult for the fishers to get access to this money because they are not organized well enough and they don't know how to handle these types of loans very well. Some of the fishers said that they would like to see the government giving out subsidies to them during the periods when drag net fishing along the beach is not allowed, as a daily allowance. The fishers who have looked into trying to find alternative income activities said that it is difficult for them to save any money to invest in a shop, a freezer to produce ice or even to buy a few cashew nut trees.

Another important issue that came up over and over again when talking to the fishers about how to address these issues was that they lack basic education and training for any alternative skills. Many of the fishers agreed that they do need more education about the marine ecology to understand the effects of what people from the outside refer to as "destructive fishing methods". The fishers who already know enough to understand why it is not good to fish with mosquito nets for example, pointed out that it is very hard for them to convince others not to use this type of fishing gear, unless everyone has at least a basic knowledge and understanding. In general the fishers also say that they lack skills and training to be able to engage in other income generating activities. Many don't know how to farm vegetables or keep chicken on a larger scale, or even how to process cashew nuts to add value to the product. Another issue is also that most fishers don't know how to speak enough English to engage in activities with tourists, which could be a potential alternative for them. They also complain about the lack of technical vocational courses in Vilanculos. The fishers noted that the lack of technical training leads to a situation where the investors prefer to hire people from other countries to do the job that the locals could have done if they only had the training (carpentry and basic constructions were mentioned as examples).

Stricter law enforcement is also an issue that has to be addressed to ensure that the use of illegal and destructive gear is minimized. Law enforcement should also be improved so that the no-fishing zones inside the National Marine Park and around the Sanctuary as well as the special time periods when fishing is restricted are respected so that the marine life is given a chance to recover. The issue of illegal vessels using long liners during the night was also pointed out as a major problem along the coast and it is very important that this issue is addressed on a national level. From Vilanculos it has been reported that the illegal long liner ships are very aggressive and don't refrain from using weapons to scare off any local boats trying to come close, even if the marine police and the military are involved.

In the southern area, near Chibuene, there is an artificial reef since more than 5 years. This reef has become very rich in marine life and if left alone (i.e. no fishing on the reef) it would function as a nursery and breeding area for all the fish in the lagoon. The situation at the moment is however that the fishers drag their nets over the reef on daily basis, not allowing for the fish to recover. One option that has been discussed and could bring benefits to the local fishers as well as tourist operators would be to introduce more artificial reefs in the channels in the lagoon. This would contribute to increased fish populations in the area and if the reefs are placed strategically, some can be used for fishing, while other reefs would primarily be there for improved fish breeding by providing “protected” nursery sites where fishing would not be allowed.

1.4 Bottom-up and top-down communication

Problems with communication were also identified as an issue for the fishing community in Vilanculos. One reason that was identified as an issue was that the knowledge of the existing organizations that provide funds and training for the local community was only known by a few individuals. Most of the fishers have no idea how, when and where to turn for support. Even within the fishing association that has less than 30 members, it was clear that some individuals had received training and funding opportunities from organizations and structures that other members had never heard of. Another issue related to poor or lacking communication was that some fishers continue fishing even during the periods when it is not allowed, because they don't even know when that period is. Not knowing the rules and regulations makes it very difficult for fishers to adhere to them, and for them to plan with their families on how to survive during these times.

One way of addressing the issue of lack of information is to involve the most popular media – the local radio station. Radio is the most efficient way to spread information, to reach many people with educational programmes, etc in a community where very few people have access to printed newspapers or TV. The radio can advertise special events such as film festivals and awareness days with certain activities and it can also be used to broadcast educational programmes and messages related to environmental issues. Important dates for deadlines for funding applications, etc can also be made public knowledge through the radio.

