Empowered Participatory Governance and marine resources management: the case of two Locally Managed Marine Areas in Southern Kenya.

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Frontpage image: Matilde Vallerani, Wasini channel, January 2017.

ABSTRACT

Through the last decades, marine resources management in Kenya has been characterised by a governance shift from state-centred and top-down arrangements to community-based solutions, integrating resource users in decision-making to enhance the quality of fisheries management and promote community development and empowerment. Consequently, several co-management areas, also called Locally Managed Marine Areas (LMMAs), were established along the coast. However, little has been investigated concerning the implementation of this participatory governance mechanism. This research therefore explores two LMMAs in the South-East of Kenya, focusing on the features of the developed forms of community participation and decision-making processes, as well as on the constraints and weaknesses characterising the management of these areas, to see if and in which way the aforementioned approach can lead to an effective involvement of coastal communities resulting in successful marine resources management. Information was collected mainly through literature review and interviews with the most relevant stakeholders. Results show community members as central actors in decision-making, supported through technical assistance and coordination from government and NGOs, but struggling with important management issues, especially related to weak enforcement and financial sustainability. General conclusions highlight the fundamental role of government in supporting and supervising community efforts, not only during LMMAs establishment, but also after their implementation, for them to be sustainable and successful over the long term. It is furthermore essential to guarantee secure alternative livelihoods, since failure in achieving welfare and development goals would result in disappointment and consequent disinterest of community members.

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ABBREVIATIONS LIST

ANO	Africa Nature Organisation
ASCLME	Agulhas and Somali Current Large Marine Ecosystems Project
BMU	Beach Management Unit
CBO	Community-Based Organisation
CCA	Community Conservation Area
COMRED	Coastal and Marine Resources Development
CORDIO	Coastal Oceans Research and Development – Indian Ocean
EAWLS	Eastern African Wild Life Society
EMCA	Environmental Management and Collaboration Act
EPG	Empowered Participatory Governance
FAO	Food and Agricolture Organisation
FFI	Fauna and Flora International
GEF SGP	Global Environmental Facility Small Grant Programme
GoK	Government of Kenya
ICZM	Integrated Coastal Zone Management
IUCN	International Union for Conservation of Nature
KCDP	Kenya Coastal Development Project
KFS	Kenya Forest Service
KMFRI	Kenya Marine and Fisheries Research Institute
KWS	Kenya Wildlife Society
LMMA	Locally Managed Marine Area
MALF	Ministry of Agriculture, Livestock and Fisheries
MCCN	Mwambao Coastal Community Network
MENR	Ministry of Environment and Natural Resources
MPA	Marine Protected Area
MT	Ministry of Tourism
NEMA	National Environmental Management Authority
NGO	Non-Governmental Organisation
NOAA	National Oceanic and Atmospheric Administration
UNDP	United Nations Development Programme
USAID	United States Agency for International Developement
WCS	Wildlife Conservation Society
WIO	Western Indian Ocean
WWG	Wasini Women Group

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1. INTRODUCTION

1.1. Coral reefs: services and threats

More than 450 million people live within 60 kilometres of coral reefs, with the majority directly or indirectly depending on the ecosystem goods and services provided by them (Cinner et al. 2012, IUCN 2013). Indeed, besides being particularly important for fishing and tourism, coral reefs also contribute to coastal protection, are source of medical advances and have significant intrinsic cultural values for many coastal societies around the world (Wilkinson 1996, Cinner et al. 2012).

Coral reefs are among the most productive and biologically diverse environments on Earth, being home to more than 25% of all known marine fish species, yet at the same time one of the most ecologically sensitive to Climatic Change (Wilkinson 1996, IUCN 2013). This anthropogenic-driven Climate Change is producing large-scale alteration on coral reefs, affecting them through variations in the long-term mean environmental conditions, inter-annual cycles, and seasonality. Moreover, the increasing frequency of extreme climate events, such as high-intensity cyclones and increased sea surface temperatures, can have profound impacts on coral reef ecosystems, harming fish habitat, productivity, and distribution, as well as impact directly on fishing operations and the physical infrastructure of coastal communities (Wilkinson 1996, Cinner et al. 2012). For example, coral bleaching and death because of elevated sea temperature events or because of the ongoing ocean acidification can alter the ecosystem goods and services by changing fish species compositions and potentially reducing reef fisheries productivity, consequently affecting reef-dependent communities (Hoegh-Guldberg et al. 2007). In addition, coral reef ecosystems are threatened by the impacts of many human economic activities, including overfishing and destructive fishing, pollution with nutrients, heavy metals and other chemicals (deriving from ports, urban centres, tourism development and aquaculture), and coral mining (Emerton & Tessema 2001, Cinner et al. 2012, Sale & Hixon 2014). The result is a substantial reduction in coral cover and coral growth rates of most of the world's reefs: according to the NOAA Coral Reef Watch (2017), "*as of February 2017, the ongoing global coral bleaching event continues to be the longest and most widespread ever recorded*".

1.1.1. Kenyan Coral Reefs

The East African coast has the second longest barrier reef in the world, stretching from the coast of Somalia along Kenya to southern Tanzania. The majority of these coastal reefs are situated in Kenyan and Tanzanian waters where they support fishing and tourism activities (Cinner et al. 2012). Reef fisheries are especially important to coastal communities, who are heavily dependent on marine resources for their livelihoods.

In Kenya, even though marine capture fisheries only represent 4% of the national fish catch, it is estimated that more than 60,000 coastal residents depend on these fisheries (Arthurton & Korateng 2006, ASCLME 2013, Morara et al. 2015). In some Kenyan coastal communities, over 70 percent of households highly depend on fisheries (both fishing and fish trading), but an estimated average for the coast as a whole is 45 per cent of households (Arthurton & Korateng 2006). Moreover, among the rich marine and coastal attractions, the presence of coral reefs plays an important role in coastal tourism, which accounts of 45% of the share contribution to the Kenyan coastal economy (ASCLME 2013). Fishing is conducted in an artisanal way and mainly for subsistence purposes, within the sand, coral and seagrass habitats of the reef lagoon, between the coast and the fringing reef (Cinner et al. 2012, Fondo et al. 2013). Small-scale fisheries in Kenya are multigear and multispecies: the traditional gears are gill nets, seine traps, and hand lines and the main fishery products include snappers, tuna, prawns, lobsters, octopus and squid (Fondo et al. 2013). However, in the last decades, fisheries management experienced a shift from traditional fishing technologies limiting catches and avoiding high levels of by-catch or unselective harvest, to the introduction of new technological practices, such as purse seine and monofilament netting (Samoilys et al 2011). At the same time, population growth, along with high levels of poverty in the coastal regions, contributed to the increase the number small-scale fishers, with a 34% increase documented between 2004 and 2008 (ASCLME 2013). As the main objective of the fisheries policy was to maximize catch and profits, many fishing grounds lacked effective management,

which resulted in less selective and more impactful fishing practices (trawling, small meshed nets, poison and dynamite fishing), placing great strain on fish stocks and endangering both marine biodiversity and human livelihoods along the coast (Samoilys et al. 2011, Nelson 2012, McClanahan et al. 2016). The lack of effective management, locals' high dependence on fisheries resources and the paucity of alternative income earning options are important contributors to poverty in coastal communities (Arthurton & Korateng 2006).

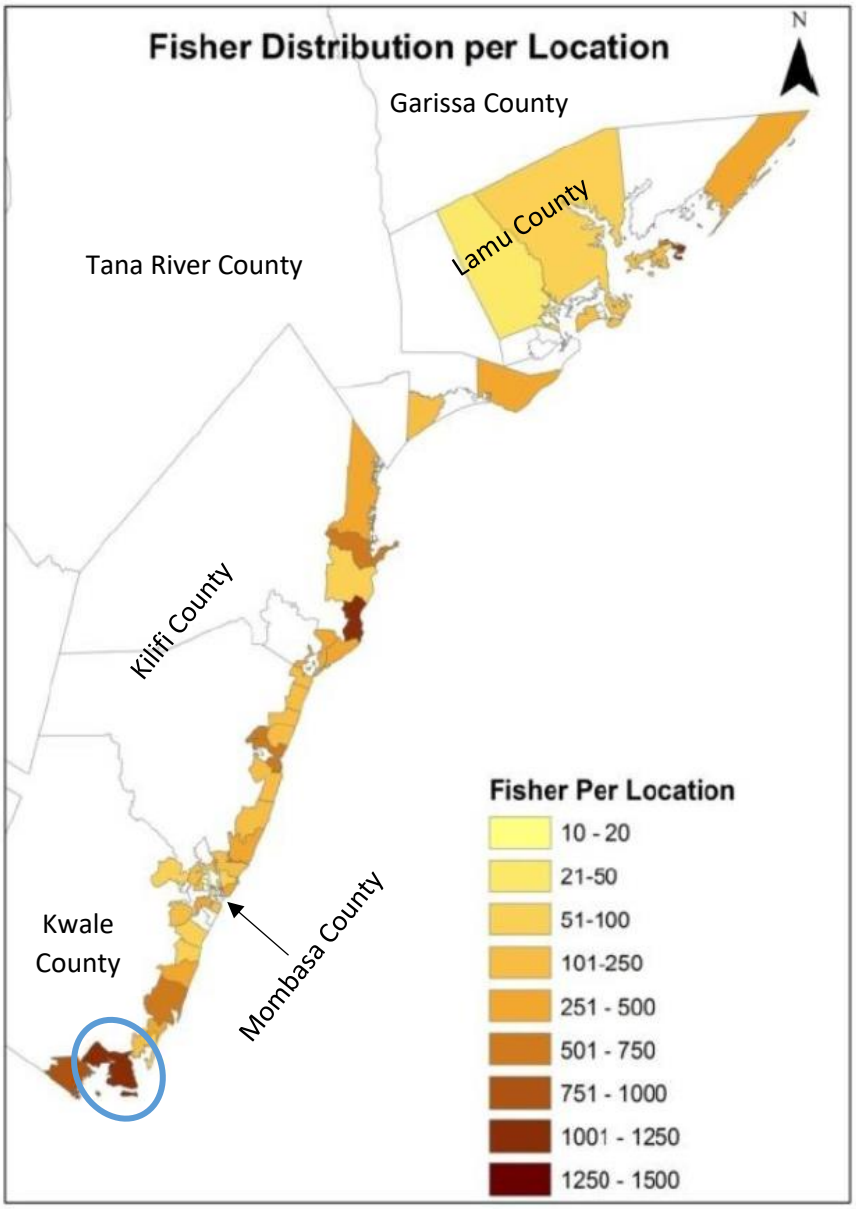

Figure 1: Fishermen distribution and fishing craft, including number of fishers fishing on foot, per location. Kwale County, the southernmost coastal county in Kenya where Wasini and Kibuyuni villages are situated, has one of the highest densities of artisanal fishers using traditional non-motorised vessels and fishing on foot (MCCN 2013). The area where this research is focused is circled in the image.

1.2. Marine conservation in Kenya

Kenya has used Marine Protected Areas (MPAs) as conservation tools for over four decades, establishing nine marine national parks and reserves between the 1960s and the 1990s. These MPAs were founded and managed by the Kenya Wildlife Service (KWS) under the Ministry of Forestry and Wildlife, through a top-down approach with little or no community consultation and involvement (Maina et al. 2011, Samoilys & Obura 2011). Even though these MPAs proved to be very effective in restoring fish abundance and coral reefs health (McClanahan et al. 2005, Samoilys & Obura 2011), poor community participation produced mistrust

and hostile perceptions within coastal communities, and in several cases led to conflicts (McClanahan et al. 2005, Evans 2009, Mahajan & Daw 2016). The result was the creation of a few fully protected fisheries closures managed by the national park service surrounded essentially by open access fishery.

Co-management in Kenya was first advocated as a central strategy to improve local management of in-shore fisheries and coral reef systems in the early 1990s. In those years, many countries of the Western Indian Ocean (WIO) region, including Kenya, experienced a period of change influenced by structural adjustments in governance mechanisms (McClanahan et al. 2016). Indeed, these changes were driven by the needs of governments to implement programs that reflect development goals, such as good governance, improved efficiency, equity, and poverty reduction. This resulted in many governments in the WIO region instituting laws for the establishment of various co-management arrangements (McClanahan et al. 2016). In Kenya, the shift towards fisheries co-management is characterized by the implementation of Beach Management Units (BMUs). The first BMUs were implemented in Lake Victoria region, as the Lake Victoria Fisheries Organization was pushing for a solution to tackle the ineffectiveness of the past regulation, the European Union bans on Lake Victoria fish (McClanahan et al. 2016). The model was then extended to marine fisheries in 2007 with the Fisheries (Beach Management Units) Regulations from the Ministry of Fisheries Development (Kawaka et al. 2017, Mahajan & Daw 2016, McClanahan et al. 2016). BMUs are associations of fishers, fish traders and processors, boat owners and other stakeholders with a direct stake in the fishery or coast site, formally led by an Executive Committee of stakeholders (Cinner et al. 2009, Rocliffe et al. 2014, Mahajan & Daw 2016, McClanahan et al. 2016). BMUs tasks include law enforcement, developing sanitation facilities and onshore infrastructure for the landing, buying, and selling of fish, collecting fisheries data, conflict resolution and welfare matters, and handling emergencies (Fisheries (Beach Management Units) Regulation 2007), in consultation with the Ministry of Fisheries Development and other relevant organizations (Cinner et al. 2009).

1.2.1. Locally Managed Marine Areas

Simultaneously to the establishment and development of BMUs, and also thanks to the increasing effort of NGOs promoting bottom-up management approaches, local communities started to be interested in organizing their own conservation areas, driven by the potential for better livelihoods and fisheries improvement (Mahajan & Daw 2016, McClanahan et al. 2016). The result was a spread of community-based MPAs (named LMMAs, CCAs or tengefu[1]) throughout the Kenyan coast: the first was established in 2006 in Kuruwitu and at the moment roughly 24 are at various stages of development, ranging in size from 2.54 to 46 ha (Abunge 2011, Kawaka et al. 2017, Mahajan & Daw 2016).

A definition of LMMA was given in 2000 by regional marine conservation practitioners and community leaders joining meetings in the Philippines and Fiji, as it was indeed in the Southeast Pacific region where this concept was born and first implemented in the 1990s (Christie et al. 2002, Govan et al. 2009, Rocliffe et al. 2014, Mahajan & Daw 2016). The attendees defined an LMMA as:

"An area of nearshore waters and coastal resources that is largely or wholly managed at a local level by the coastal communities, land-owning groups, partner organizations, and/or collaborative government representatives who reside or are based in the immediate area" (Govan et al. 2009: 28).

Each LMMA has a unique history and designation process, depending also on the different outside organizations involved, on the technical and financial support received and on the levels of community involvement (for example, the area may be collaboratively-managed by both the community and the government or some other external body). However, the encompassing key element is local control, with resource users themselves making most of the management decisions (Govan et al. 2009, Rocliffe et al. 2014, Mahajan & Daw 2016). It is usually a local institution, whether traditional (village leadership) or modern (local

[1] *Tengefu* in Swahili means "to set aside".

government or village institution, or community groups like fishermen associations), that becomes the locus of authority for the conservation area. A relationship is established between the local institution and a higher level more centralised governmental authority. The latter is the source of the resposibility and power devolved to the local level. It is also common that a foreign NGO or entity gets involved, providing experience and technical advice, as well as funding to support the community project (Samoilys & Obura 2011).

LMMAs are usually established through five phases (Kawaka et al. 2017):

- Conceptualisation, when the main idea, root cause and origin of the proposition for establishing a LMMA are explored. This phase ends with the endorsement by the community that an LMMA is desirable.
- Inception, which investigates whether the community and other key stakeholders understand LMMA concept, benefits and process. This phase also begins drafting a management plan, training, awareness, consultation and identification of sources of financing.
- Implementation, which involves the adaptation of the management plan, the development of a monitoring plan and the training of community members in LMMA management.
- Monitoring and management, focusing on management effectiveness, efficiency and adoption of the monitoring plan. This phase also consists of endorsement and implementation of good management structures with clear terms, roles and responsibilities between key stakeholders.
- Ongoing adaptive management, a dynamic phase aiming at the sustainability of the LMMA, continuous implementation of management strategies and further review and improving of the LMMA functioning. It is informed by the earlier phases, is continuous and involves learning by doing.

Marine conservation tools employed within an LMMA may consist of a combination of management approaches, including species-specific reserves, temporary or shifting reserves, and harvest effort limitations (such as gear or seasonal restrictions). They do not imply a complete ban on resource extraction, so that livelihoods of dependent communities are safeguarded (Govan et al. 2009). In many cases, there is also a focus on tourism, as a community may decide to close off areas for fishing to promote ecological recovery and thus attract snorkeling and diving tourists. Therefore, LMMAs also offer the opportunity to diversify income generation away from capture fisheries, towards more sustainable and value-added service-oriented activities (Samoilys & Obura 2011).

The rapid spreading of LMMAs indicates that local communities perceive them to be beneficial, however several issues are still remaining: these include insufficient capacity for effective monitoring and control in local communities, lack of funding and alternative livelihoods, conflicts of interest between stakeholders, and the absence of national guidelines for LMMAs establishment (Rocliffe et al. 2014, Kawaka et al. 2017, McClanahan et al. 2016).

1.3. Problem description

Following Kuruwitu example[2], the NGOs East African Wild Life Society (EAWLS) and Flora and Fauna International (FFI), funded by the Darwin Initiative, supported the same community conservation concept in seven local communities along the Southern Kenyan coast, close to the Tanzanian border, in an area known as Shimoni-Vanga. The initiative has started in 2008 and involves indeed seven BMUs with respective territorial waters covering a total of 12,400 ha characterized by patch and fringing coral reefs, seagrass beds,

[2] The Kuruwitu Community Managed Conservation Area (KCMCA) was established in 2006 by the Kuruwitu Conservation and Welfare Association with support from the East African Wildlife Society. KCMCA brings together artisanal fishermen and private beach residents within the Kuruwitu-Vipingo coastline and aims at promoting sustainable management of coastal and marine resources in the area. The stakeholders voluntarily agreed to close part of their fishing ground and ecological research by the Wildlife Conservation Society revealed fisheries recovery over a relatively short time. This inspired many other fishing communities who are now following this example (Maina et al. 2011).

mangroves and areas with restricted-range endemic species, therefore important and valuable natural and tourism resources. These co-management areas are defined by a range of management categories, including no-take zones and regulated use zones, and were created with the purpose of regulating local reef fisheries for local livelihoods to be dependent on sustainably managed fisheries and marine resources (Maina et al. 2011, Nelson 2012). Part of the Shimoni-Vanga communities traditional fishing ground was converted into an MPA in the 1970s, the Kisite-Mungputi Marine Park and Reserve, a complex that contains three coral islands, submerged reefs and their surrounding open waters, and that has been the major tourist attraction in the last decades. (Emerton & Tessema 2001, Ochiewo 2004, Nelson 2012).

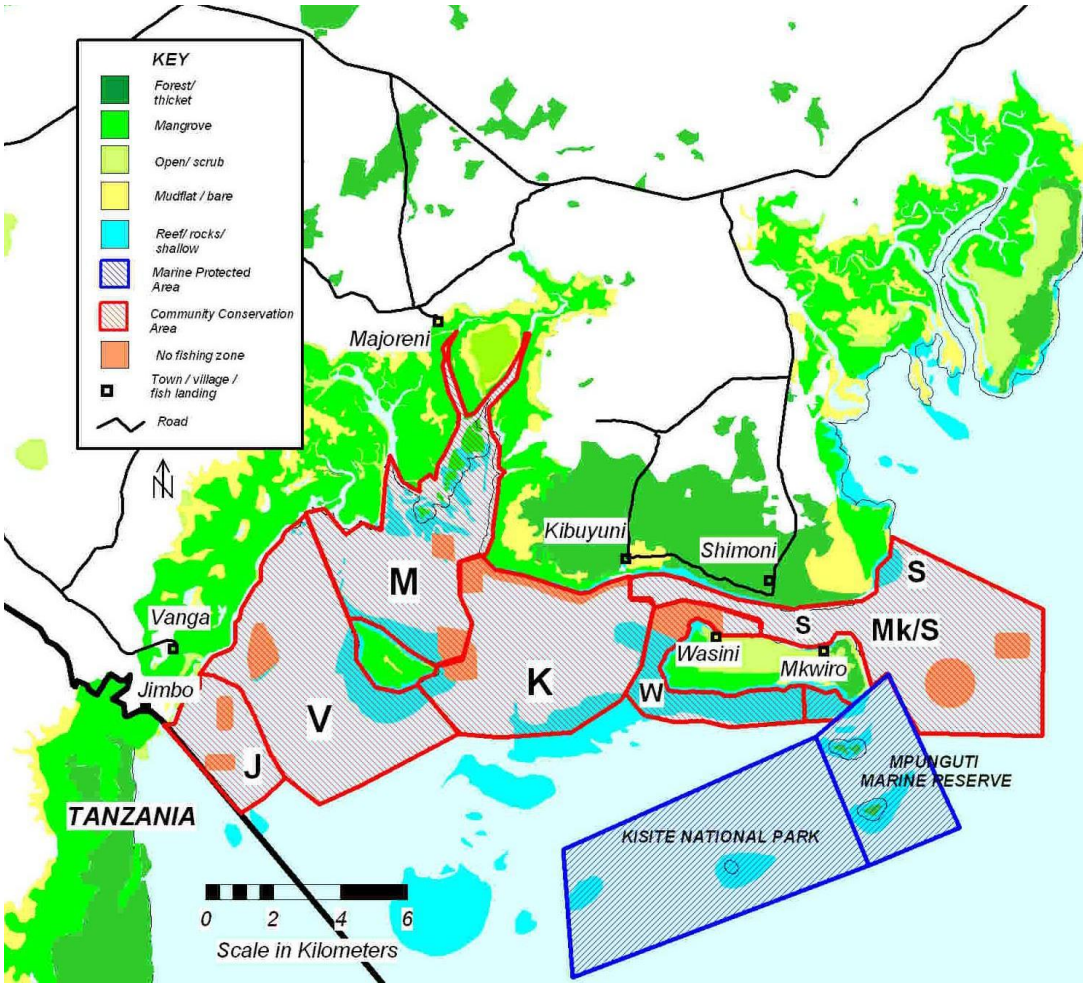

Figure 2: Map of individual territorial waters for the villages Shimoni (S), Mkwiro (Mk), Wasini (W), Kibuyuni (K), Majoreni (M), Vanga (V) and Jimbo (J). Source:FFI/EAWLS

At present, among the seven LMMAs that were started, only two, Wasini and Kibuyuni, are active and developed a management plan that is being implemented, while the others are still in the conceptualisation or inception phase (Kawaka et al. 2017). On the other hand, more research and clear information are needed to verify the current situation, especially concerning participation mechanisms and management schemes regarding these co-managed areas. Indeed, the available scientific literature regarding not only Wasini and Kibuyuni, but in general the whole Shimoni-Vanga area, is not numerous, as LMMAs are a quite new topic. Most of it is focusing on ecological aspects rather than governance arrangements, and the papers that concentrate on the latter usually do it by considering the seven BMUs or more in general LMMAs in Kenya (Maina et al. 2011, Samoilys & Obura 2011, Nelson 2012, Chirico 2013, MCCN 2013, Ogada 2013, Morara et al. 2015, McClanahan et al. 2016, Kawaka et al. 2017). According to the Fish Act of 2007, BMUs have specific tasks and have to include various stakeholders (among which the local community) in the management of their area of jurisdiction, but is this happening and through which means? How are decisions taken and by

whom? Who is implementing them? To what extent are local stakeholders involved in the management of their marine resources? Therefore, a knowledge gap is identified between the information given by literature and reports and the actual settings and arrangements relative to community participation and marine resources co-management in Wasini and Kibuyuni communities.

1.4. Research aim

The research aims at giving an insight on the forms of participation and power sharing that characterise Wasini and Kibuyuni LMMAs management and decision-making processes.
Given the results of the evaluation, this research plans to identify the factors and conditions that are or may challenge and undermine community-based management outcomes, to give useful recommendations to the management bodies and more in general to the community members. The outcomes of this study may also be helpful for NGOs and institutions that are collaborating and supporting Wasini and Kibuyuni conservation areas, but also those interested in LMMAs in general or in any other conservation programme which would benefit from community involvement in the area.

1.5. Research questions

To reach the objective of this research, a main question and two sub-questions have been set up and will be answered in the conclusion of the research report.

- What forms of community participation have been developed and implemented in Wasini an Kibuyuni LMMAs and in what way are they successful?
    - What is community participation and how can it be conceptualised?
    - Who are the stakeholders involved in the management of Wasini and Kibuyuni LMMAs?
    - Which are the enabling and constraining conditions for a successful management of the considered LMMAs?

The first sub-question will be answered through the explanation of the conceptual framework used for the purposes of this research. The second will be addressed in Chapter 5, where results are presented and a stakeholder analysis is provided. The answer to the last sub-question will be obtained in consequence of the evaluation of the research results, done through the conceptual framework. With regard to this sub-question, it is important to give a definition of what is intended, in this study, for successful management of LMMAs. According to Kawaka et al. (2017), an LMMA is successful when the last of the five establishment phases is achieved, with a long-term implementation and continuous adaptation of the LMMA's management and activities. Key factors to this accomplishment include (Rossiter & Levine 2014, Kawaka et al. 2017):

- Improved ecological conditions in the LMMA, in this case coral reefs health especially;
- Understanding and endorsement, by the community and other key stakeholders, of the LMMA concept, process, terms, roles and responsibilities between actors, and its impacts and merits;
- General compliance with the LMMA and its regulations, with the support of an effective enforcement plan;
- Development and implementation of a monitoring plan, assessing the ecological and socio-economic impacts of the LMMA, allowing for adaptive management;
- Long-term sustainable sources of funding for managing the LMMA;
- A perception of positive outcomes from the LMMA by most of local community members and stakeholder groups;
- No significant loss of income or livelihood potential for local stakeholders, or losses are balanced by alternative benefits from the LMMA.

1.6. Study outline

The study is structured as follows. First, the conceptual framework and analytical tools will be outlined in Chapter 2. Chapter 3 will expose the methodology adopted for the data collection and the research development. A description of the institutional and legislative setting pertaining marine conservation and co-management in Kenya is provided in Chapter 4. Results from data collection will be presented in Chapter 5, including a description of Wasini and Kibuyuni LMMAs structure and functioning and a stakeholder analysis. The following section (Chapter 6) will evaluate the findings through the chosen analytical tools and compare them with the theoretical framework. The study will then end with Chapter 7, where some conclusions and recommendations to the case are provided.

2. CONCEPTUAL FRAMEWORK

This paragraph introduces the conceptual framework that was elaborated and will be made use of for the purposes of this research. The main frame is constituted by co-management, as LMMAs are the result of collaboration and power-sharing between local communities and other actors from outside the community. The concept of co-management is explained in the first paragraph of this Chapter. Since different forms and levels of community participation can be embraced in co-management, a ladder of community participation for underdeveloped countries (Choguill 1996) is adopted as a tool to categorise and conceptualise participation in the context of LMMAs. Moreover, Empowered Participatory Governance theory by Fung & Wright (2003) is applied to the case of the two LMMAs, to evaluate them through the model's principles and reflect on the factors and conditions enabling or constraining the success of these co-management arrangements.

2.1. Co-management

As already mentioned in the previous section, in recent decades there has been an increased interest in power devolution and participation for environmental decision-making. Public participation around the world has been part of a wide range of environmental applications including marine resources management. Indeed, there has been growing recognition that stakeholders' involvement can enhance the quality of environmental decisions by successfully meeting ecological and social goals (Cinner et al. 2012, Luyet et al. 2012, Di Franco et al. 2014). The management and the governance of many resources, like fisheries, forests, watersheds, wildlife, protected areas, etc., are too complex to be performed effectively by a single agency and require the joint action of multiple parties (Berkes 2009). The concept of governance, which was traditionally associated to formal state institutions' monopoly of power, has developed suggesting to look beyond government, towards the coordination and interaction of different actors, including the State, the private sector and the civil society (Froger et al. 2004, Berkes 2009, Van Leeuwen & Van Tatenhove 2010). Consequently, to promote stakeholders' participation, various participatory governance mechanisms have been increasingly adopted as institutional arrangements (Gaventa 2003, Speer 2012). The multiplication of participatory governance arrangements involved two important shifts. The most outstanding one has been from state-centered institutions to a proliferation of civil society organizations that deliver services and offer various forms of support for social and economic development. These new organizational spaces have in some cases reconfigured the public sector, replacing states authority. At the same time, another shift is the one involving a transition from professionally dominated to more citizen- or client-based activities, often taking place within the new civic society organizations (Gaventa 2003, Fischer 2006).

However, experiences with new forms of participatory governance show participation to be neither straightforward nor easy (Fischer 2006, Reed 2008). Real world and institutional complexities makes it difficult for anyone to be involved in policy decision-making and participation needs to be carefully organized and facilitated (Fischer 2006).

In the context of common pool resources (e.g. forests, water, fish stocks) management, the shift towards participatory governance is reflected in the widespread application of co-management arrangements (Cinner et al. 2012, Di Franco et al. 2014). Collaborative management, or co-management, can be defined as a partnership arrangement in which power, responsibility and authority for the management of a resource are shared between local resource users and governmental bodies (Pomeroy & Riviera-Guieb 2005, Berkes 2009). Carlsson and Berkes (2005) argue that co-management can be seen as a continuous problem-solving process rather than a fixed structured arrangement. Indeed, there often are multiple local interests and multiple government agencies at play and the degree of responsibility and authority that the state and local

levels have differs and depends upon country- and site-specific conditions (Pomeroy 1995, Carlsson and Berkes 2005). Co-management involves aspects of democratization, social empowerment, power sharing and decentralization: it recognizes different values, interests and concerns involved in managing a set of natural resources, both outside the local communities and within them; allows an increase of power and responsibilities for resource users; seeks transparency and equity in resources management (Borrini 2000). Co-management can be considered therefore as a middle ground between state level concerns for efficiency and equity in natural resources management, and local level concerns for self-governance, self-regulation and active participation (Pomeroy 1995). Advantages of this approach include: increased sense of ownership leading to a more responsible resource use; greater awareness and concern for local socioeconomic and ecological issues; improved management thanks to local knowledge contribution; increased compliance with regulations through peer pressure; and better monitoring, control and surveillance by resource users (Gutierrez et al. 2011, Cinner et al. 2012).

For what concerns small-scale fisheries, co-management arrangements have become more and more common, especially in developing countries (Cinner et al. 2012, Di Franco et al. 2014). In developing countries, the need to manage natural resources goes side by side with the urgency for overall community and economic development and social empowerment. Thus, in this case co-management has the community at his focus, while at the same time recognizing that to sustain this aim both a horizontal (across the community) and vertical (with external to the community organizations and institutions) link is necessary. This people-centred, community-oriented, resource- and partnership-based arrangement is named community-based co-management (Pomeroy and Riviera-Guieb 2005).

2.2. Ladder of community participation for underdeveloped countries

Co-management involves various degrees of delegation of management responsibility and authority between the local level (resource user/community) and the state level (national, provincial/state, municipal) (Pomeroy 1995).

The ladder of community participation for underdeveloped countries indicates the several levels of participation that can be achieved by a community organisation depending upon the type of support it receives from outside sources, whether they be from government or beyond government. The emphasis is on the relationships between government and NGOs, on the one hand, and the community, on the other, to achieve participation (Choguill 1996). This model develops from the transfer of Arnstein's ladder of participation (Arnstein 1969) to the underdeveloped world. According to Arnstein, within the developed world "*citizen participation is a categorical term for citizen power. It is the redistribution of power that enables the have-not citizens, presently excluded from the political and economic process, to be included in the future*" (Arnstein 1969: 216). Therefore, the principle that defines the rungs of the ladder is the extent of citizens' power in determining the end product of public policy (Arnstein 1969). However, in developing countries, members of low-income communities are seeking more than power alone: beside needing empowerment to influence decisions which affect them, they also want social, economic and welfare improvements, benefits that a government may not be able to provide because of lack of resources (Choguill 1996). For this last point, citizens may be willing to contribute with their labour, money and time to achieve them. Community participation is seen as a means to obtain the basic needs which would not, otherwise, be available to citizens (Choguill 1996). In this model, a key element is the presence of mutual-help initiatives and outside assistance, whether it comes from government or non-govemmental sources, which is strategic for community empowerment and development (Choguill 1996).

As in Arnstein's case, the ladder could have an almost infinite number of rungs, if one's intention is to finely distinguish among the various levels of participation. However, this would make the identification process very complicated and therefore an eight-rung ladder was used. The scale of participation for undeveloped countries suggested by Choguill is based on the degree of governmental willingness in carrying out community mutual-help projects (Choguill 1996).

A brief description of each level is now given, beginning with the lowest rung of the ladder.

- *Self-management*. The bottom level implies situations that result from lack of governmental interest or even opposition to poor communities whose members, by themselves, plan and control the projects, not always successfully. Usually communities work with outside assistance of NGOs or the support of independent financial institutions, which seem to affect positively the result of the community effort. Through their extensive involvement, NGOs may as well totally replace the need for government, although without changing the *status quo* in the political sphere. Eventually, community initiatives may influence temporarily the processes and outcomes of development, in the case of just a diplomatic political change, or may establish genuine empowerment, in case of change of leadership and the establishment of mechanisms of support to the communities.
- *Conspiracy*. For this level, no participation is allowed, or even considered, in the formal decision-making and planning. Governmental actions and decisions seem to disguise ulterior motives or may benefit specific groups, while poor communities are not taken into account.
- *Informing*. Informing is also a level of manipulation, as it consists of a one-way flow of information from government officials to the community, regarding their rights, responsibilities and options, without allowance for feedback or negotiation, in projects that have already been developed. It is a top-down initiative which frequently has controversial outcomes.
- *Diplomacy*. As in the case of dissimulation, diplomacy is a type of manipulation. In this case, the government, for lack of interest, lack of financial resources or for incompetence, is likely to expect the community itself to make the necessary improvements, usually with the assistance of an outside organisation. When there is a possibility that the community by itself accomplishes real improvements or when NGOs are involved, the government may change its attitude, frequently for tactical reasons, providing limited amounts of aid. Government officials may pretend that they are interested in public opinions on a potential project or that they are going to support development projects. However, there is no assurance that these new projects will be implemented, that interests and ideas from the community will be taken into account, or that support to the community effort will be provided.
- *Dissimulation*. At this fourth rung of the ladder, people are placed on rubber-stamp advisory committees or boards, to achieve a semblance of participation. The express purpose is to educate them or, more frequently, devise their support. From this level down, the government increasingly leaves the communities to themselves.
- *Conciliation*. It occurs when the government designs solutions that are eventually ratified by the people. A few representatives of the community may be appointed to advisory groups, or even decision-making bodies, where they can be heard but also where they are frequently forced to accept the decisions of a powerful and persuasive elite. Therefore, it is frequently a top-down approach.
- *Partnership*. Planning and decision-making responsibilities about development projects are shared by community members and outside planners and decision-makers through for example joint policy boards, planning committees or other informal mechanisms of problem solving. At this level, government's involvement is more intense than in the case of empowerment.

- *Empowerment*. At the highest level of the ladder, community members are expected to initiate their own improvements, with governmental support and possibly with the assistance of outside organisations, such as NGOs or other allies, demonstrating control of the situation and determining the processes and outcomes of community development.

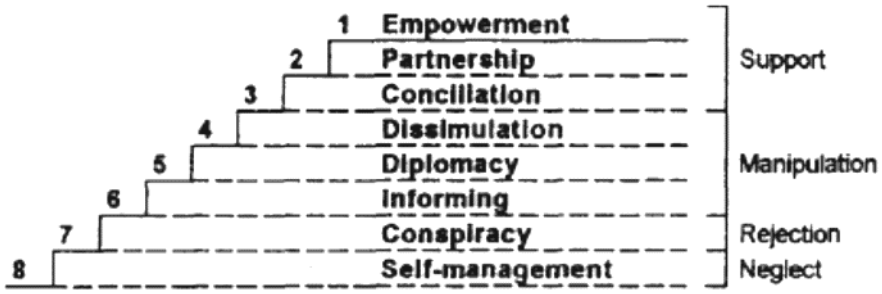

Figure 3 - Ladder of community participation for underdeveloped countries (Choguill 1996)

Overall, community participation is conceptualised as an instrument of community empowerment, a means through which people identify problems and needs and increasingly assume responsibility themselves to plan, manage, control and assess the needed collective actions (Tosun 2000). Citizens participate in their own development through mobilising their own resources, defining their own needs, and making their own decisions about how to meet them (Stone 1989, Choguill 1996).

2.3. Empowered Participatory Governance

The guiding principles used in this thesis to analyse Wasini and Kibuyuni LMMAs community participation level are those from Empowered Participatory Governance (EPG), a model from Fung & Wright (2003), whose aim is to stimulate deep democracy. Since LMMAs are conceived as forms of power devolution to local groups, they are an example of how participatory governance schemes can be applied to marine resources management. In this context, EPG can be useful in giving an insight about community participation schemes and arrangements in nature conservation problems. Its principles are based on the idea that active involvement of all stakeholders in decisions concerning their own welfare leads to better solutions compared to the ones achieved by a top-down approach. Empowered and participating citizens feel more involved in solving problems and in keeping the solution enforced, moreover they may contribute with their knowledge thanks to their inside perspective (Fung & Wright 2003, Fischer 2006).

After acknowledging the need of bringing decision-making power to ordinary citizens and civic organizations to stimulate participation and vigorous democracy and examining five concrete experiences designed to promote active political involvement of the citizenry, Fung and Wright (2003) theorized that the problem was more related to the design of institutions than with the assignments they take on. From the common features of these experiences, they developed a model of deliberative democratic practice that can be expanded both horizontally, into other policy areas and regions, and vertically, through higher and lower levels of institutional and social life, named Empowered Participatory Governance (EPG). The term “participatory” is referred to the reliance on ordinary people commitment and capacities to make sensible decisions through reasoned deliberation, while “empowered” indicates the attempt to tie action to discussion (Fung & Wright 2003). EPG characteristics and principles are designed to enable the progressive “colonization of the state” and its agencies, for a radical political step towards a more democratic society (Fischer 2006). By exploring

whether the reorganization of formal state institutions can stimulate democratic engagement in civil society, and so form a virtuous circle of reciprocal reinforcement, EPG aims at creating spaces in which citizens can meaningfully engage in shaping decisions together with state actors through durable forms of practice that advance more responsive governance. EPG adds considerable understanding of the institutions, practices, and effects of citizen participation to this investigation (Fung & Wright 2003, Fischer 2006).

EPG is defined by three guiding principles, drawn from fundamental and distinctive aspects of the considered experiments:

- *Practical orientation*. The developed governance structure focuses on specific and tangible problems. Deliberation is applied to deal with concrete matters, not only to abstract questions about values and principles.
- *Bottom-up participation*. Individuals most directly affected by targeted problems, typically ordinary citizens or and officials in the field, are involved in the formulation of solutions and apply their knowledge, interest and intelligence to this end. The empowered involvement of citizens can in many cases of public problems bring to very effective solutions: first, grassroots operators can offer their direct experience and a more diverse and relatively open-minded knowledge to approach the issue compared to distant and narrowly trained experts; second, citizens' participation increases projects accountability and reduces the length of bureaucratic procedures. Technical experts still play an important role, facilitating popular deliberative decision-making and supporting it with their knowledge, but do not enjoy exclusive power in making important decisions.
- *Deliberative solution generation*. Deliberation is employed in the effort to solve the problems under consideration. In deliberative decision-making, participants listen to each other's positions and generate group choices after due consideration. Earnest justifications and arguments constitute the central kind of reasoning through which problem-solving happens. Deliberation involves continuous joint planning, problem-solving, and strategizing to forge strategies and solutions. Even though real-world deliberations are often characterized by heated conflicts with winners and losers, what makes a deliberation genuine is the fact that participants find solutions that they can accept in collective actions, not necessarily the ones that they completely endorse. Participants should reason on strategies that can best fit the group agenda, considering the fairness or acceptability of that option to others, rather than pursuing their self-interests.

Three design properties describe the feasible institutional structures and realistic social conditions that would advance, stabilize and deepen democratic values. They define the context in which the three principles can be put into practice (Fung & Wright, 2003).

- *Devolution*. EPG requires decision and implementation power to be devolved to local action-oriented units.
- *Centralized supervision and coordination*. Local units are not autonomous sites of decision-making. They are connected to one another and to the appropriate superordinate bodies responsible for supervision, resource allocation, innovation, and problem solving, that reinforce the quality of local democratic deliberation. Therefore, EPG proposes a form of coordinated decentralisation, going beyond state centralism and strict decentralisation approaches and rather finding arrangements where they connect and intersect.
- *State-centered, not voluntaristic*. New state institutions are generated in ways that lead to the restructuring of the administrative agencies charged with solving these problems into

deliberative groups. They try to change the central procedures of power rather than seeking to shift the vector of its exercise. The political power of these local units to implement the programmatic results of their discussions will thus come from state authorization itself.

There are several background conditions that can encourage or hinder EPG processes. For example, literacy plays an important role in facilitating participation. Power balances between the engaged actors are another fundamental aspect to consider for the purposes of deliberative decision-making. It is much more likely that participants will engage in genuine deliberation when alternatives to it, like strategic domination, are made less attractive by roughly balanced power. When individuals cannot dominate others to secure their interests, they are often more willing to deliberate.

As a consequence of the conditions stated above, the following institutional objectives should be reached by institutions following EPG principles:

- *Effective problem-solving*. Advancing public ends more effectively than alternative institutional arrangements. There are several reasons for which this outcome is expected. First, these arrangements empower citizens and officials at the street level, who possess intimate knowledge about relevant situations and may also know how best to improve them. Second, in the deliberative process all participants have the possibility to offer useful information and examine alternative solutions more deeply. Moreover, decisions taken are more legitimate than those imposed externally and participants' commitment to implement them is higher. Third, time and distance between decisions, action, effect, observation and reconsideration are shortened, making it easier and quicker to recognize and react to erroneous strategies. Finally, the combination of decentralized empowered deliberation and centralized coordination and feedback allows multiple strategies and priorities to be conducted simultaneously in order to discover and diffuse those that prove themselves to be most effective.
- *Equity*. Three features can enhance the generation of fair and equitable outcomes. First, the inclusion of those groups that are usually excluded from public decisions. Second, the delivery of effective public action to those who do not generally enjoy this good. Third, in the ideal, EPG procedures follow deliberation rules, whose procedural norms include that the generated proposals enjoy broad consensus support, though strict consensus is never a requirement. Also, participants must select strategies that upon reflection win the deepest and widest appeal.
- *Broad and deep participation*. Citizens' engagement in a sustained and meaningful participation is considered as a central productive resource and is provided by establishing additional channels for participation and by giving the real prospect of exercising state power. Expertise-based barriers to engaged participation are reduced and thus encourage participants to develop their political wisdom and capabilities.

Given EPG characteristics and principles, five critical concerns emerge when the ideal features of this theory are facing concrete reality.

First of all, the most serious potential weakness is brought by the unequal positions of power that characterise the participants, deriving from material differences, class background, knowledge and education, and personal capacities in deliberation and persuasion. Even if both strong and weak are well represented, powerful elites may use tools at their disposal, like material resources, information asymmetries and rhetorical abilities, to promote collective decisions that reward their interests. Moreover, citizens who are favoured in terms of wealth, education or membership in dominant groups, participate more frequently

and efficiently than those who are less well off, so that the outcome of the decision-making process is unlikely to be fair (Fung & Wright 2003).
Secondly, if participants cannot advance their interests in deliberative settings, they may engage in "forum-shopping" strategies and turn to more favourable venues, using deliberative institutions only when it suits them (Fung & Wright 2003).
Third, EPG devolutionary principles may balkanize the polity and political decision-making, with several empowered small groups, each addressing its narrow particular issue, incapable of dealing with large-scale concerns or developing encompassing agendas (Fung & Wright 2003).
Another criticism considers that empowered participation may demand far too unrealistic high levels of popular commitment. This especially acknowledging contemporary climates of civic and political disengagement and ignorance, where citizens are usually too consumed with private life and individual problems to engage their time, energy and commitment in deliberative processes (Fung & Wright 2003).
Finally, there is concern regarding EPG arrangements' stability over time. They may enjoy initial successes, in a burst of collective enthusiasm and goodwill, but then may be difficult to sustain over the long term. This because of different reasons, for example bureaucratic complications, or disappointed expectations that may bring disillusionment and exhaustion among the participants (Fung & Wright 2003).

The reason why EPG was chosen as analytic tool in this study is that it can perform an interesting role in linking nature conservation and community participation. In this sense, an example is given by Fung & Wright (2003), who described the attempts to balance human development and the protection of endangered species through stakeholder governance under reforms to the US Endangered Species Act. This example shows how endangered species conservation regulations in the US shifted from strict enforcement and top-down arrangements to a more participatory scheme, the Habitat Conservation Plan (HCP). HCPs are a chance for stakeholder to participate together and meet their needs, as these plans result from a deliberative process through which developers, environmentalists, and other stakeholders' groups can work together to construct large-scale, ecosystem conservation settings. This solution helps avoiding conflict among the various actors and provides a more effective species protection, thanks to the setting of goals, of measures to reach these goals, of monitoring regimes and adaptive management provisions (Fung & Wright 2003).

HCPs can be considered very similar to LMMAs: they both represent a decisional arena where different actors and groups share power and work together for a better management of natural resources and an occasion for weaker stakeholders to influence the outcome of the decision-making process. Accordingly, LMMAs are also examples of Empowered Participatory Governance applied to nature conservation and the principles of this theory provide a way to evaluate the characteristics of an LMMA in terms of participation forms, power devolution and stakeholders' interaction.

2.3.1. Linking EPG and Choguill's ladder of community participation

For the purposes of this research, it is appropriate to link EPG with the community participation ladder, to understand at which level of the ladder EPG can be collocated and how the ladder relates to participation as defined by EPG. It is clear that the characteristics of the middle rugs of the ladder (*conciliation*, *dissimulation*, *diplomacy*, *informing* and *conspiracy*), in general do not comply with the principles of EPG, like bottom-up participation and power devolution, and also do not share the same objectives regarding the generation of equitable outcomes and citizens' engagement in deep participation. On the other hand, the remaining levels, *empowerment*, *partnership* and *self-management*, are in accordance with the mentioned principles and objectives. However, an important criterion, also underlined by Choguill (1996), differentiating the upper levels of the ladder with the bottom one, is represented by governmental support. The presence of an appropriate governmental authority responsible for supervision and coordination, as well as for power

devolution to local units, is also one of the characteristics of EPG. For this reason, *self-management*, in which governmental support is lacking, cannot be considered a form of EPG. As intended by Choguill (1996), *self-management* is a consequence of "*governmental disregard*" and it "*emerges as a reaction of the poor to their situation, frequently allied to NGOs*". These are bottom-up initiatives which have the potential of solving local problems and improve community welfare, but, if not engaged with the political and governmental context, will not be able to "*transform the mechanisms of state power into permanently mobilized deliberative-democratic, grassroots forms*" (Fung & Wright 2003, p. 22). Eventually, people's initiatives may influence the process of development by shaping state outcomes and reconstituting decision processes within state institutions. *Self-management* arrangements can thus potentially, in case of change of leadership and the establishment of mechanisms of support to the communities, bring to the formation of genuine and durable empowerment practices, colonising state power and transforming formal governance institutions towards more deliberative and participative forms (Choguill 1996, Fung & Wright 2003). This is where EPG and the ladder model especially find their common ground: participation practices, to be widely accessible and enduring, are to be institutionalised, included in the reshaped and renovated central procedures of power. Indeed, *partnership* and *empowerment* are both based on high levels of participation in decision-making; however, process and outcomes of decisions in the first case are a result of power-sharing between local community and government, while in the second case they are responsibility of community members only, but with government coordination and support. Therefore, *empowerment* can be considered the ladder rung where EPG is collocated, even though also *partnership* can be associated with the theory for most of its characteristics.

3. METHODOLOGY

To develop this study, different research methods have been used in order to provide satisfying answers to the research questions, trying not to bias the study results and limit the understanding of the issue. Most of the data were collected during a month-long fieldwork in Shimoni-Vanga area, in January 2017.

3.1. Case study: Wasini and Kibuyuni

The main component of this research is a case study. The case study approach provides in-depth, multi-faceted explorations of complex issues in their natural settings (Crowe et al. 2011). A case study is an empirical enquiry that investigates and explains a contemporary event or phenomenon within the real-life context in which it occurs, recognizing its complexity, background and boundaries (Yin 2009, Punch 2013). This event or phenomenon, occurring in a bounded context, can be an individual, a community, an organization, a nation, but also a decision, a policy or a process (Punch 2013). For these reasons, the case study approach can be useful to understand and describe causal links and pathways resulting for example from a new policy initiative or service development (Yin 2009), like the establishment of LMMAs in Shimoni-Vanga area. The case study approach was therefore chosen as it can provide a better understanding of Wasini and Kibuyuni communities participation in marine resources management. At the same time, this particular case examination can be helpful in giving insights about participatory governance solutions concerning the marine environment in developing countries.

Among the seven LMMAs that were started in Shimoni-Vanga area, Wasini and Kibuyuni were chosen for this study for the following reasons. The two CCAs have similar characteristics, indeed they both have developed a management plan and are now approaching the monitoring and management phase. The closed areas are delimited by buoys, extractive activities of any kind are forbidden and access is only permitted after the payment of a fee to the BMU. The other villages are still at the initial steps of the co-management area planning: the project was started but at present no area has been closed under those BMUs' jurisdiction and no co-management plan has been adopted. Therefore, a most-similar systems design was chosen for this research as investigating Wasini and Kibuyuni, which are two cases of on-going LMMAs, will supposedly provide more insights and information on the functioning of an LMMA and on the forms of participation adopted in the LMMAs stetting. Given that the aim of this research is to investigate management, participation and decision-making frameworks of LMMAs, it is more convenient to use on-going CCAs projects as a case study, rather than researching the other villages' initiatives which have not been implemented yet. On the other hand, investigating two implemented and working LMMAs can reveal different approaches and arrangements for the same issue as well as distinct managerial and organisational problems and potentials related to the communities' characteristics. Their example could be useful for the other BMUs in the area to implement their CCAs.

Another reason for choosing Wasini and Kibuyuni as case study is the fact that these two conservation areas are very geographically close to each other, which makes the fieldwork easier to be organised and performed, given that resources and time for interviews were limited. Lastly, the geographical area of Wasini and Kibuyuni communities is also where a coral reef restoration project[3] is taking place, and the outcomes of this research may as well be helpful for the purposes of this project, which aims at involving local communities in coral restoration and conservation activities.

[3] Reefolution project was developed by a local entrepreneur in Shimoni (Pilli Pipa Dhow Safaris Ltd) with the support of REEFolution Foundation. The purpose is to actively restore damaged coral reefs and create new ones through education and conservation efforts. For more information, visit reefolution.org .

With regard to these two cases' external validity, the characteristics of Wasini and Kibuyuni LMMAs can be generalised to other LMMAs in the country that are at the same development stage, meaning that they have been implemented, the designated area has been closed, the bylaws enforced and tourism activities or particular conservation projects (with the support of donors) are taking place. A description of these aspects for the two communities will be provided in Chapter 5, giving as many details as possible to set the boundaries of generalisation for this case study. Moreover, LMMAs' establishment in Kenya is now governed by the BMU's regulation, so that it is a choice of the BMU members to close and conserve one area and it is their duty to manage it and set the rules concerning it, with the support of the County officers. This makes LMMAs management characteristics more uniform, compared to the situation before the BMU's regulations of 2007, and consequently the research case study's generalisation more valid.

An important characteristic of the case study approach according to Yin (2009) is that multiple sources of evidence are required to describe the case, as data triangulation can increase the internal validity of a study. Therefore, literature research, interviews and observations were carried out to collect the data needed for this case analysis.

3.2. Literature research

A literature research was carried out, especially to gather information about the theoretical framework and the general ecological, social and institutional context. Also, other cases similar to the one considered in this study were researched, to distil information and capture the main characteristics of previous research or projects as they might inform the current study (Hanington & Martin 2012). Academic literature, but also reports, documents and website contents from governments, institutions and organisations were made use of for this purpose. Among these documents, it is important to mention the co-management plan and the bylaws of Wasini and Kibuyuni BMUs, which are the legal papers characterising and governing the management of the respective LMMAs and were retrieved from the Kwale County Fisheries Office in Shimoni, Kenya.

3.3. Semi-structured interviews

During the fieldwork period in Shimoni-Vanga area, it was possible to conduct interviews to collect information from key stakeholders. These include local fishermen, NGOs members (for example, Kenya Wildlife Service and East African Wildlife Society), governmental actors (members from the BMUs, from the municipalities, from the Kenya Marine and Fisheries Research Institute) and members of local communities. Interviews are a qualitative method of research that provides direct contact with participants and is used to obtain first-hand personal accounts of experience, opinions, attitudes and perceptions (Macdonald & Headlam 2008). Interviews were semi-structured, as this technique allows a certain degree of flexibility for the researcher to respond to the answers of the interviewee and therefore develop the themes and issues as they arise (Macdonald & Headlam 2008). The researcher does have a set of topics to be addressed, but the questions, the structure, the terminology and also the time of the interview depend on each participant. This is especially useful when interacting with local fishermen and members of local communities, who may be not familiar with technical terms but express their knowledge in other ways. In this way, it should also be easier not to influence the interviewee answers and therefore get a not biased opinion. However, it is possible that during the interviews collection some bias may have occurred: indeed, especially with locals, conversations were very hard to be developed, for both language difficulties (in many cases, the English vocabulary was very limited) and a certain mistrust they had in talking to someone they did not know. Therefore, more inputs had to come from the interviewer to get further explanations and clarifications, and this may have produced biased answers. Another aspect that is important to mention is that a few interviews

with fishermen took place thanks to the contacts, but also through the mediation, of Wasini BMU chairman, thus those fishermen's answers may have been influenced by the presence of the chairman. To avoid this, some locals where approached in bars, shops and on the beach, and informal conversations about the study topic were started without mentioning the present research. These talks had not a conventional interview structure and are not as exhaustive on the topic, but helped in collecting further information and clarifications.
Part of the preparation of these interviews, meaning getting information about stakeholders, contacting them and setting interviews framework, was done before leaving for the fieldwork in Shimoni, but many meetings were arranged *in situ*, taking advantage of some stakeholders' contacts after the first interviews. Questions also had to be adjusted, according to the development of the case storyline. The interviewee list and the topic list that were made use of are reported in Appendix A and B respectively.
Interviews were recorded, with the speakers' approval, and responses were successively transcribed to facilitate their analysis, which has been done through a coding process. Coding is a technique to organise and sort interviews data, labelling and combining them per concepts and categories. This is useful to search the data, make comparisons and identify any patterns and relations among them that require further investigation (Taylor & Gibbs 2010). The codes are given meaningful names indicating the idea or concept that characterises the theme or category and any part of the data that relate to a code topic is marked with the appropriate label. Each category has its own symbolic label or code, which may be an abbreviation, a number, a letter, a colour or anything else useful to the process of summarizing, analysing, storing, or retrieving interviews results (Gorden 1992). In this case, interviews were first divided according to the speaker category (government, BMU, community or NGO member), as for this research purpose is important to identify different stakeholders' points of view. Then the data were indeed coded following the main themes and concepts, to compare various opinions about a topic, see how they relate to each other and understand the context defining them.

3.4. Observations

Including observations as a method for data collection can further aid in collecting information from as many different sources as possible. Observation consist of a mix of techniques: direct observation, participation in the life of the group, collective discussions, life histories (Macdonald & Headlam 2008).

During the fieldwork period in Shimoni, it was possible to attend a one-day long meeting organised by the local NGO COMRED bringing together the Executive Committees of the seven BMUs of Shimoni-Vanga area with some governmental officials. The aim of the meeting was the development of bylaws for a future joint co-managed area including the seven communities' fishing grounds. Even though the meeting was held in Swahili language and some translation was needed to get the main contents of the discussion, it was interesting to observe group dynamics and stakeholders' interaction with one another, as well as the decision-making process: this indeed definitely helped in the understanding of the participation and decisional mechanisms adopted for marine resources management at a community level. This will also be further analysed and explained in Chapter Five.
Another observation that provides additionally valuable information for the study occurred during the interview with the chairman of Wasini BMU, which took place in the BMU office. In this occasion, it was possible to quickly review registers (of patrol shifts, workshops participation, payments) and posters illustrating facts about the BMU, as well as observing the structure that is the centre of the BMU management and the resources available.

3.5. Stakeholder analysis

The last method used for the purposes of this research is Stakeholder Analysis (SA). "*SA is a powerful tool for policy analysis and formulation, and has considerable potential in natural resource policy and programme development. It is an approach for understanding a system, and changes in it, by identifying key actors or stakeholders and assessing their respective interests in that system*" (Grimble & Wellard 1997: 173). SA aims at identifying stakeholders' interests and perspectives to better understand and analyse their interactions which shape the characteristics and the evolutions of environmental problems. Therefore, it can be very useful to search for efficient, equitable and environmentally sustainable development strategies, when multiple interests and objectives are involved. (Grimble & Wellard 1997). For the purpose of this study, it is important to identify the actors involved in LMMAs management, their roles, their perspectives and interests, as well as how they relate with each other. This contributes to the description of Wasini and Kibuyuni LMMAs management structure, especially of the degree of co-management, for the depiction of which it is significant to analyse government and local communities' position and duties in the context of decision-making and power devolution for coastal resources management.

In this research, SA is articulated in three phases: identifying stakeholders, differentiating and categorising stakeholders, and investigating relationships between them (Reed et al. 2009).

3.5.1. Identifying stakeholders

As Reed et al. (2009) affirms, identifying stakeholders is usually an iterative process, since further stakeholders can be added as the analysis develops. However, for this research most of the stakeholders were identified in the initial phase, before the fieldwork took place, through a brainstorming process based on literature reading as well as information collection from relevant websites and reports. Stakeholders' identification went through answering to questions like "*Who are the groups and institutions interested in Wasini and Kibuyuni LMMAs? Who is involved in their development and management? Who are the potential beneficiaries? Who is opposed to these projects?*". Since resources and time for the analysis were limited, the list of stakeholders to be interviewed was prioritized. Priority was given to those groups whose involvement is mandated by law (County Government, BMUs), to the ones that are mostly affected by the LMMA projects (fishermen and community members) and to groups that supported and can still enhance those initiatives (like NGOs). Then, during the fieldwork, the results of the first interviews revealed a few other interesting stakeholders to be included in the research. Stakeholders' identification was then reflected in the interviewees' selection. A list of potential interviewees was identified among the different stakeholders' categories. Interviewees were selected because of their area of expertise, their being representative of groups, and their geographical location (even though a few interviews were done through email and Skype). Particular attention was given to make sure that each category was represented by at least one interviewee and that different points of view were heard, applying triangulation to avoid biased results.

3.5.2. Differentiating and categorising stakeholders

In this study, stakeholders are classified through a popular method which considers the interest they carry for the resource or issue at hand as well as the power they have to affect the development and the future of that resource or issue (Eden & Ackermann 1998, Bryson et al. 2011). These two aspects are combined in a power versus interest grid which array stakeholders on a two-by-two matrix, where the dimensions are indeed stakeholders' power and interest (Figure 4). Each of the dimensions should be thought of as a range, from low to high interest and from low to high power. This results in stakeholders generally falling into four categories (Eden & Ackermann 1998, Bryson et al. 2011):

- *Players*, who have both strong interest and significant power, with high potential to be primary intended users of a resource, including both using it themselves or affecting how others use it.
- *Context setters*, who have power but little direct interest. It may be important to increase their interest, as they may pose barriers through their disinterest.
- *Subjects*, who have an interest but little power and therefore might be affected by other groups decisions without being involved in decision making.
- *Crowd*, meaning those *stakeholders with little interest and power over desired outcomes and there is little need to consider them in much detail or to engage with them.*

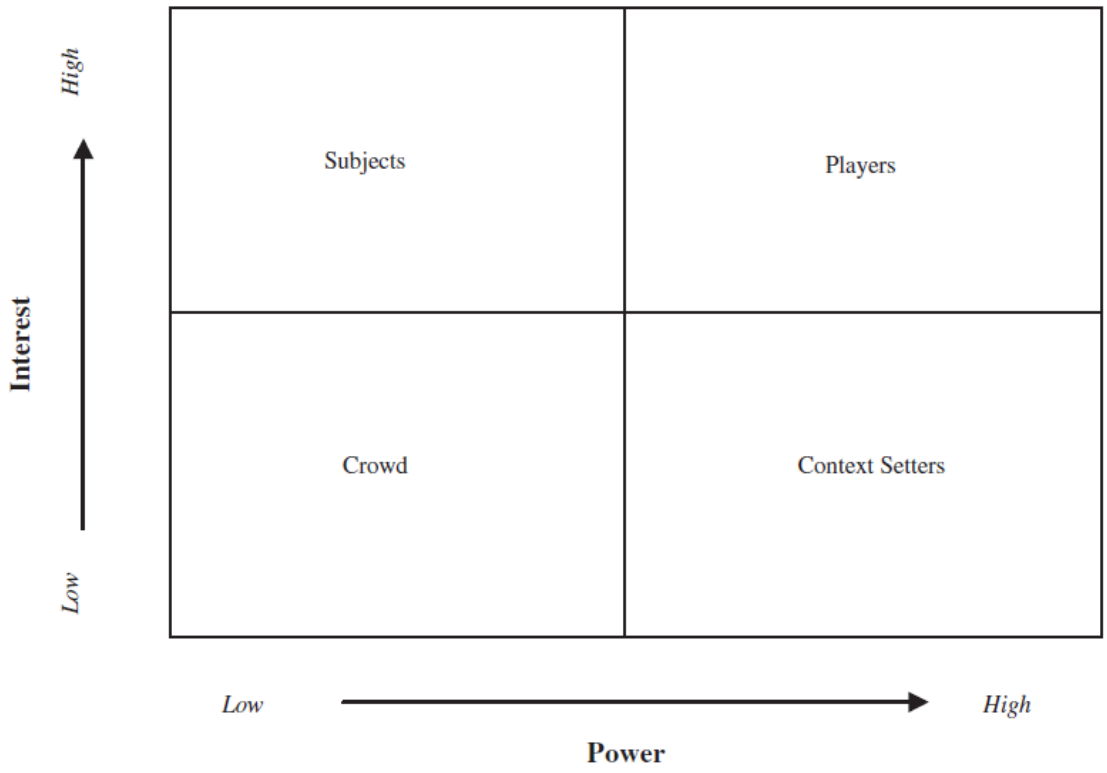

Figure 4: Power versus interest grid (Eden & Ackermann 1998: 122)

3.5.3. Investigating relationships between stakeholders

Using the information obtained by the power versus interest grid, it is possible to build an actor-linkage matrix indicating how the different stakeholders interact with each other and describing the relationships between them, determining especially whether these are of conflict, complementary, or cooperation. This method requires stakeholders to be listed in the rows and columns of a table creating a matrix so that the interrelations between the actors can be described using key words (Reed et al. 2009). Understanding relationships between stakeholders is particularly relevant to this research, since to evaluate co-management it is important to investigate whether and how cooperation is happening between stakeholders.

4. GOVERNANCE OF LMMAs AND LEGAL FRAMEWORK

This chapter will first describe the governance shift from top-down management to co-management that interested natural resources in Kenya, explaining why and how it happened. Then, in a second part the most relevant laws and regulations related to fisheries co-management, community participation and locally protected areas will be outlined and explained. Overall, the aim of this chapter is to provide an insight on the institutional and legal context in which the case study is set, which is quite complex and important to be understood for analysing the co-management scheme characterising LMMAs.

4.1. The governance shift: from MPAs to LMMAs

One of the most useful tools for fisheries management, biodiversity conservation, habitat restoration and tourism development is through the establishment and proper management of Marine Protected Areas (MPAs) (Christie & White 2007, IUCN 2010, Jones et al. 2011). According to the IUCN, an MPA is defined as "*Any area of intertidal or subtidal terrain, together with its overlying water and associated flora, fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment*" (Kelleher 1999). MPAs protect all species and habitats in specific areas from all kind of extractive activities, through a holistic, ecosystem-based management approach, and provide ecological, social, cultural and economic benefits (Lester et al. 2009, Di Franco et al. 2014, Ocean Sanctuary Alliance 2016). Indeed, MPAs can help recovering exploited fish populations and enhance fishing, supporting more sustainable fishing practices; they promote local economies and sustainable development and preserve cultural, social and historical values; and they can be used for education and research, as well as for tourism and recreational purposes. Therefore, MPAs can be considered as an important management intervention to achieve conservation aims, promote fisheries sustainability and improve socio-economic welfare of coastal communities (Christie & White 2007, Di Franco et al. 2014, Ocean Sanctuary Alliance 2016).

MPAs are characterized by a great variety of terminology and nomenclature to define and categorize them, depending on the country, on the size of the protected area, on the management model or the governance arrangements. Sometimes different definitions are just synonyms for similar policies and names are not used consistently. For example, the term "marine reserve" can be used in one country to indicate an area where any kind of extractive activity is forbidden, while in another country non-destructive fishing methods are allowed. Many MPAs include a "buffer-zone", where some activities are permitted, surrounding a "no-take zone". Other definitions, to name a few, are "marine sanctuary", "marine national park", "fishery closure", "Natura 2000", "Ramsar site" etc., indeed depending on the level of protection and the kind of activities permitted in the area (FAO 2011, Di Franco et al. 2014).

MPAs can be implemented through various governance models, from top-down to bottom-up on the basis of who holds authority and responsibility and is accountable for key decisions. Until recently, it was largely believed that resource users would never self-organize to manage natural resources long term and that government had to impose their solutions and regulations to preserve them (Ostrom 2009, Di Franco et al. 2014). However, local coastal communities in the Southeast Asian region and in the WIO area are increasingly assuming responsibility for marine resources and improving their efforts towards sustainability, in a governance shift from government-led top-down, towards more decentralized and collaborative management arrangements (Cinner et al. 2009, Di Franco et al. 2014, Rocliffe et al. 2014, McClanahan et al. 2016). Indeed, top-down approaches based on centralized government interventions, like the institution of marine national parks, have proven to be ineffective and inadequate in achieving marine conservation aims. This lack of effectiveness is mainly the result of the alienation and exclusion of adjacent communities and key

stakeholders from the decision-making process: externally imposed rules and restrictions, such as top-down conservation strategies, can produce limited acceptance and support and therefore poor compliance, especially when enforcement is weak, as it is often the case in fisheries in developing countries (Beger et al. 2004, Cinner et al. 2009, Rocliffe et al. 2014, Mahajan & Daw 2016, McClanahan et al. 2016). The need for governments to implement programs that reflect development goals, such as good governance, poverty reduction and equity drove the shift to more participative management methods. Community and stakeholders' participation in collaborative management with governments or non-state actors has been recognized as a very important aspect in marine resources management, as it makes conservation initiatives more reflective on local conditions and more legitimate, creating incentives to a better compliance, providing indigenous knowledge to support scientific information and improving enforcement (Pomeroy 1995, Cinner et al. 2009, Di Franco et al 2014, Rocliffe et al. 2014, McClanahan et al. 2016).

MPAs following this community-based governance model first developed in the Philippines in the mid-1980s, then spread in the Southeast Pacific, where areas in which marine resources are at least partly under local communities control are usually named "locally managed marine areas" (LMMAs), and has seen his popularity growing in many parts of the world, in the last decade especially in the WIO (Christie et al. 2002, Rocliffe et al. 2014, Mahajan & Daw 2016). Tropical Eastern African countries like Tanzania, Kenya and Madagascar are indeed experiencing several initiatives empowering local communities to largely or wholly govern the use of their marine and coastal resources (Westerman 2012, Rocliffe et al. 2014). In this case, various terms are used beside LMMA, for example Collaborative Fisheries Management Area, Community Conservation Area, Voluntary Marine Conservation Area and Community Fisheries Closure (Rocliffe et al. 2014, McClanahan et al. 2016). Even though the level of community participation, the type of external technical support (which could be from local government agencies, private stakeholders or NGOs) and the general management model is context-specific, the encompassing key element is local control, resource users themselves making most of the management decisions (Rocliffe et al. 2014). These initiatives succeed by considering local social, economic, and environmental conditions as well as community values. They can create a sense of local ownership of issues and solutions, as decisions are developed collectively by community members. Communities are motivated by the benefits they can get from such efforts, especially livelihood benefits and poverty alleviation (Odote et al. 2015, Mahajan & Daw 2016).

LMMAs establishment generally goes through five phases, which were described already in Chapter 1 and that are briefly explained in Figure 5. These steps can be further organized in two blocks, one regarding the LMMA establishment, from phase 1 to 3, the other concerning the LMMA management once it is in operation, including phase 4 and 5 (Kawaka et al. 2017). The designation process can vary depending on the different actors involved in the different sites, but it generally includes sharing information at informal gatherings, stakeholders' analysis, consultative meetings, biophysical and socioeconomic profiling, mapping, demarcation of the area, feedback to members and management plan development (Mahajan and Daw 2016, Kawaka et al. 2017). LMMAs can also be administrated in different ways, including by individual owners of the land, by the entire community due to communal ownership of land or by various communities who have rights over the same land. Therefore, the regulations and management systems are shaped according to the various levels of ownership and control of these resources (Odote et al. 2015).

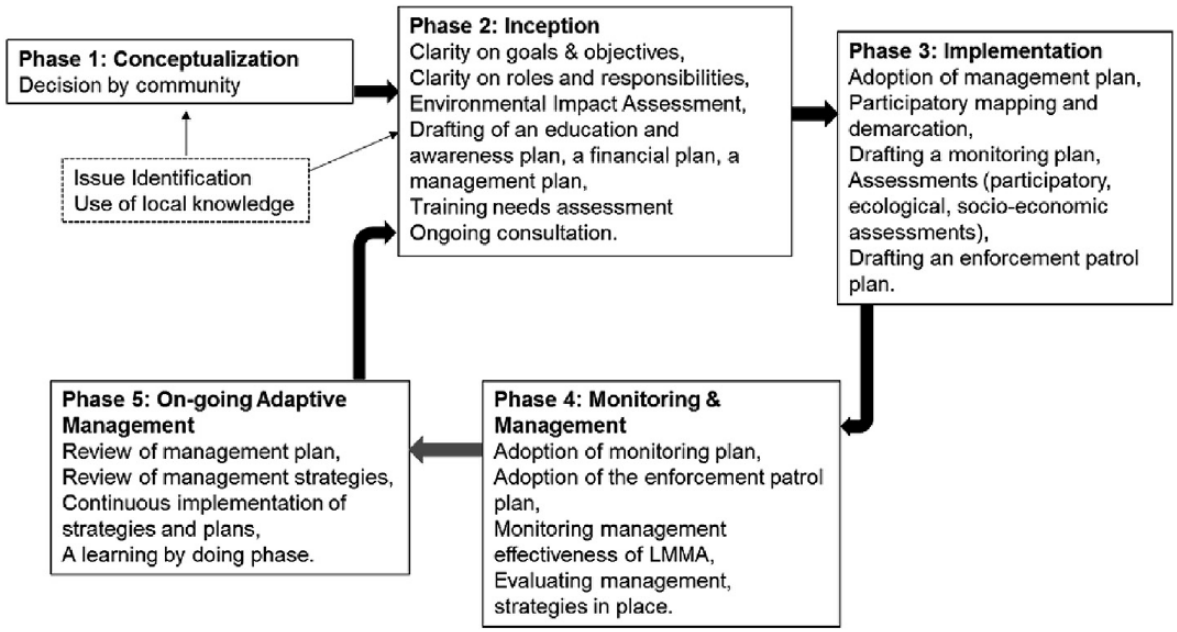

Figure 5: Phases of LMMAs establishment (Kawaka et al. 2017)

4.2. LMMAs development in Kenya

Recognizing the importance of its coastal and marine environment and the threats (mainly due to over-exploitation and unregulated use of the resources) affecting it, between 1968 and 1995 the Kenyan government adopted MPAs as one of the management strategies to preserve the marine environment, promote a sustainable use of marine resources and encourage research, education and awareness (Samoilys & Obura 2011, Tuda & Omar 2012, Morara et al. 2015). In total, nine MPAs were established being both marine parks, no-take zones where only tourism and research are allowed, and marine reserves, where traditional harvesting of resources is permitted, mostly acting as buffer zones surrounding the no-take zones (Table 1). The implementation of these MPAs was characterized by several controversies with local communities, as these protected areas were top-down initiatives taken by the government, also pushed by the tourism industry, with little or no consultation with local stakeholders. Artisanal fishermen especially felt excluded from the management of an area that had always been their traditional fishing ground (McClanahan et al. 2005, Evans 2009, Mahajan & Daw 2016). As reported by Evans (2009) and Mahajan & Daw (2016), *t*he most contested case was the Diani-Chale Management Area: this area had been designated as an MPA by the Kenyan Wildlife Service (KWS) in 1995, but local communities strongly fought the idea, leading to intense conflict. Since, following the trend that started in the Pacific, Kenya has been characterised by a period of change and structural adjustments in governance, embracing more participatory and collaborative methods in natural resources management (McClanahan et al. 2016, Mahajan & Daw 2016). This has happened as a result of developments across other parts of the world, local advocacy efforts and the need to comply with international commitments, like the Rio Declaration of 1992, urging for public participation in environmental governance and management (Odote et al. 2015). In this sense, the significant legal document concerning fisheries is the Fisheries Act of 2007, through which power is devolved to Beach Management Units (BMUs) for managing marine resources locally.

Site	IUCN Category	Size (Km2)	Date established	Management type
Malindi	II	6.3	1968	Park
Watamu	II	10	1968	Park
Malindi-Watamu	VI	245	1968	Reserve
Kisite	II	28	1978	Park
Mpunguti	VI	11	1978	Reserve
Kiunga	VI	250	1979	Reserve
Mombasa	VI	200	1986	Park
Mombasa	II	10	1986	Reserve
Diani-Chale	VI	75	1995	Reserve

Table 1: MPAs in Kenya (IUCN 2004)

This Act will be further explained in the following paragraph. Before the establishment of this legislation, communities also started showing an interest in setting up their own community managed areas, driven by the potential for improved fisheries and alternative livelihoods and under the guidance and the supervision of NGOs (especially East African Wildlife Society, Flora and Fauna International and Wildlife Conservation Society) increasing their efforts in community management approaches on the Kenyan coast (McClanahan et al. 2016). The first LMMAs were mangrove board walks, established in the 1990s in association with mangrove re-planting projects. Kuruwitu was the first coral reef based LMMA, started in 2006. Since then, 24 community conservation areas have formed along the Kenyan coast (Maina et al. 2011, Kawaka et al. 2017).

LMMA	Year formed	Year of management plan	Size km^2	Management Type	Lead group	Other partners	Legislation
Mida Creek MBW	1995	–	–	MR	A-Rocha Kenya	KEFRI	Forest Act
Gazi Women MBW	1999	–	–	MR	Gazi Women	KMFRI, KEFRI	Forest Act
Wasini Women MBW	2000	–	–	MR	Wasini Women	KWS, KEFRI	Forest Act
Majaoni Youth MBW	2003	–	–	MR	Majaoni Youth	Kwetu Training Centre, KEFRI	Forest Act
Dabaso MBW	2006	–	–	MR	Mida creek Community Conservation	KEFRI	Forest Act
Kuruwitu CR	2006	2010	0.29	NTZ	Local residents & fishers, KCWA	EAWLS, WCS, SDF, KWS, IUCN, AFEW, Safaricom, WWF	Fisheries Act
Wasini CR	2008	2013	0.50	NTZ	EAWLS/FFI	WCS, ANO, SDF, KWS KMFRI	Fisheries Act
Nyari-Kikadini CR	2009		0.13	NTZ	WCS	SDF	Fisheries Act
Tradewinds CR	2009	No	0.12		WCS	WCS, SDF.	Fisheries Act
Jimbo	2009	No	–	GR	EAWLS/FFI	EAWLS SDF, KWS	Fisheries Act
Vanga CR	2010	2011	–	GR	EAWLS/FFI	SDF, EAWLS	Fisheries Act
Shimoni CR	2010	No	0.11	GR	EAWLS/FFI	WCS, SDF.KWS WCS, SDF.KWS	Fisheries Act
Majoreni CR	2010	No	–	GR	EAWLS/FFI	WCS, SDF, KWS, KMFRI	Fisheries Act
Kibuyuni CR	2010	2011	0.28	NTZ	EAWLS/FFI	WCS, SDF, KWS, KMFRI, Pact-Ke	Fisheries Act
Kiweni CR	2010	No	3	NTZ	LamCOT	SDF, Peponi hotel, Manda Bay Resort Lamu, BMUs, WWF, TNC, NRT-Coast, PMCC	Fisheries Act
Kanamai-Mradi CR	2011	2012	0.22	NTZ	WCS	SDF	Fisheries Act
Bureni CR	2013	No	0.52	NTZ	Bureni Turtle Watch	WCS, SDF, KWS	Fisheries Act
Mkwiro CR	2014	No	0.16	GR	EAWLS/FFI	WCS, SDF, KWS, KMFRI	Fisheries Act
Mwaembe CR	2014	No	0.46	NTZ	WCS	SDF, County government	Fisheries Act
Munje CR	2015	2015	0.7	N	COMRED	SDF, County government	Fisheries Act
Mkunguni CR	2015	2015	0.27	N	CORDIO EA	SDF, County government	Fisheries Act
Rewa CR&M	2015	No	9.69	N	TNC/NRT-Coast	PMCC, SDF, FFI	Fisheries Act
Majunguni CR&M	2015	No	10.7	N	TNC/NRT-Coast	PMCC, SDF, FFI	Fisheries Act
Chipopo CR&M	2015	No	17.3	N	TNC/NRT-Coast	PMCC, SDF, FFI	Fisheries Act

Table 2: LMMAs in Kenya (Kawaka et al. 2017)

What is likely to have given the initial input to create coral reef based LMMAs in Kenya is a cross visit to Tanzania in 2004: indeed, during the early stages of the founding of Kuruwitu, the NGO East African Wildlife Society (EAWLS) organisd an exchange visit for Kuruwitu fishermen to go to Tanga in Northern Tanzania, to see the Collaborative Management Areas, established through the Tanga Coastal Zone Conservation and Development Programme. In this way, Kuruwitu fishermen who had expressed interest in establishing a LMMA were given the chance of a first-hand experience and of discussing and learning from Tanzanian fishermen (McClanahan et al. 2016, Kawaka et al. 2017). Moreover, in 1995, an international NGO, the Wildlife Conservation Society (WCS), initiated a series of meetings that involved the NGO, fisheries leaders, and Fisheries Department officials that became informally known as ''Fisheries Forum''. These started to share the results of fish catch data from multiple landing sites and discuss their causes and possible rectification (Cinner et al. 2012, McClanahan et al. 2016). This annual discussion group evolved as a platform to raise awareness about coral reefs conservation, shaping debates about resource use and management options, like community-based closures. The Forum contributed to increase the dialogue and communication between coastal stakeholders and managers and between WCS and fishing communities. Local communities also gradually became interested in establishing their own locally managed fisheries closures, called *tengefu*, meaning "to set aside" in Swahili, a term that also influenced the understanding of the concept as it lacked the negative implication of government ownership and control (McClanahan et al. 2016).

Other common factors driving the establishment and the implementation of LMMAs in Kenya include (Mahajan & Daw 2016, Kawaka et al. 2017):

- informed, committed and empowered community members trained in marine resources management and conservation by NGOs and by the government;
- the presence of strong community leaders who support the initiative and act like the link between community members, institutional authorities and NGOs, having the trust and the support of most of the local community;
- a supportive legal framework, which gives formalisation to power devolution and to community's conservation initiatives, described in paragraph 4.3;
- the existence of initial donor funding and external organisations who also provided technical support and training; moreover, a long-term sustainable funding mechanism is needed to run the LMMA.

Considering the five phases of LMMAs establishment, both Mahajan & Daw (2016) and Kawaka et al. (2017) highlight the importance of the "Conceptualisation Phase", the step-zero in the dynamics of inception and planning, in influencing the long-term success of the community managed area. Indeed, this phase is critical for the community to endorse the idea that an LMMA is desirable, so that its success relies not only on its implementation, but as well on the way in which the management scheme is perceived and on the conditions, processes and drivers that characterise the community before the inception of the LMMA (Mahajan & Daw 2016, Kawaka et al. 2017). It is a step in which politics and power dynamics perform an important role to get the whole community involved and committed, to influence the perceptions of benefits from LMMAs and to help recognise problems at the community level. If participation and commitment are not stimulated and raised during this phase, the next steps of establishment will stall or move very slowly (Mahajan & Daw 2016, Kawaka et al. 2017).

4.3. Legal framework regarding LMMAs

The legal framework governing the management of marine and coastal environments in Kenya is quite fragmented and involves several legislations. In a recent study from Samoilys et al. (2011), forty-eight pieces of legislation, produced by fourteen different Ministries and further nine Authorities, were found to be

relevant to marine resources. Consequently, this causes lack of synergy, harmony and clarity across the different sectors and Ministries, as well as jurisdiction overlaps and duplication of responsibilities, hindering the effectivity of regulations and measures: marine and coastal resources management is "*a secondary responsibility in most jurisdictions and a primary responsibility of none*" (NEMA 2010). However, after the 2013 elections in which the previous forty-four ministries have been reduced to eighteen larger ministries, the jurisdiction of marine habitat management is now a feature of three ministries (MCCN 2013):

- The Ministry of Agriculture, Livestock and Fisheries (MALF), and in particular the State Department for Fisheries and the Blue Economy. The State Department's mission is to "*facilitate sustainable management and development of fishery resources and products for accelerated socio- economic development*", with the mandate to "*facilitate the exploration, exploitation, utilization, management, development and conservation of fisheries resources as well as aquaculture development and to undertake research in marine and fresh water fisheries*" (MALF 2016). Among the core functions of the Department, there are: fisheries policy formulation and review; fisheries licensing; management and development of marine and fresh water fisheries; promotion of fish quality assurance, value addition and marketing; development of aquaculture; and marine research (MALF 2016). Under the State Department of Fisheries, the Kenyan Marine and Fisheries Research Institute (KMFRI) is a semi-autonomous national research institution mandated to undertake research in marine and freshwater fisheries, aquaculture, environmental and ecological studies to provide scientific data and advisory information for sustainable exploitation, management and conservation of Kenya's marine resources (KMFRI 2017).
- The Ministry of Environment and Natural Resources (MENR), whose mandate is to "protect, conserve and manage the environment and natural resources for socio-economic development" (MENR 2016). Under the Ministry, there are some semi-autonomous governmental agencies, among which:
    - Kenya Forestry Service (KFS), with responsibility over forestry, including mangroves;
    - Kenya Wildlife Service (KWS) responsible for wildlife and protected areas, including marine parks;
    - The National Environmental Management Authority (NEMA), coordinating all environmental issues across the entire government.
- The Ministry of Tourism (MT), which is responsible for tourism policy, management and product development, with the mission of developing, marketing and managing sustainable tourism in Kenya (MT 2016).

Given the division of responsibility over fisheries and related natural resource management issues between different ministries, regulations enforcement and responsibility for management can be challenging: an example of overlapping mandates concerns Marine Protected Areas, where there is lack of harmonisation between KWS and State Department of Fisheries concerning fisheries and marine protection; between KWS and KFS for mangrove protection; and between MT, KWS, KFS and the Fisheries Department with respect to tourism activities (MCCN 2013).

Moreover, even though LMMAs are increasingly spreading and being accepted in the coastal region of Kenya, their status in law is still not clear. Indeed, their process of creation has been supported by the State Department of Fisheries, but they still have not been mentioned explicitly in a specific legislation and lack of an official and legal recognition, resulting in confusion concerning their legal base (Odote et al. 2015, Kawaka et al. 2017). On the other hand, since 2007 new national policies have been enacted which promote and support power devolution and a more participatory approach in marine resources management, giving communities the opportunity to establish territorial jurisdiction over fisheries resources and habitats. The

following sub-paragraphs will describe the most relevant to this study, ordered according to the legislation's importance for LMMAs.

4.3.1. Fisheries Act and Fisheries (Beach Management Unit) Regulations of 2007 (rev. 2012)

The Fisheries Act of 1991 (rev. 2012) provides for the development, management, exploitation, utilization and conservation of fisheries and for connected purposes. This general legislation is implemented by subsidiary regulations that address specific issues such as endangered fish species, prohibited gear, permitted fishing methods etc. These are the Fisheries (General) Regulations of 1991, the Fisheries (Safety of Fish, and the Fishery Products and Fish Feed) Regulations of 2007 and the Fisheries (Beach Management Unit) Regulations of 2007 (from here referred as "the Regulations"). The latter are particularly relevant to LMMAs as they establish BMUs and outline their objectives, administrative structure, area of jurisdiction and mandate in co-management. The Regulations promote the co-operation amongst local stakeholders and their participation in the overall management of marine resources through giving them co-management rights, enshrined in by-laws, which must be approved by the County Director of Fisheries (MCCN 2013). The Director is also responsible for creating BMUs (in general one per fish landing station) following a consultative process that includes surveying and demarcating the extent of a BMU jurisdiction area, "*in which the Beach Management Unit shall undertake fisheries management activities jointly with the Director*" (Fisheries (Beach Management Units) Regulations, 2007: 7 (1)). The BMU regulation is therefore an important governance tool, as it is the expression of a bottom-up approach to fisheries management through which local stakeholders effectively become the stewards of the resources they exploit and are involved in the decision making, implementation, and monitoring processes (Japp 2011).

4.3.1.1. Beach Management Units

According to the Regulations, a BMU is "*an organization of fishers, fish traders, boat owners, fish processors and other beach stakeholders who traditionally depend on fisheries activities for their livelihoods*".

BMUs' objectives are to:

- strengthen the management of fish landing stations, fishery resources and the aquatic environment;
- support the sustainable development of the fisheries sector;
- help alleviate poverty and improve the health, welfare and livelihoods of the members through improved planning and resource management, good governance, democratic participation and self-reliance;
- recognise the various roles played by different sections of the community, including women, in the fisheries sector;
- ensure the achievement of high quality standards with regard to fish and fishery products;
- build capacity of the members for the effective management of fisheries in collaboration with other stakeholders;
- prevent or reduce conflicts in the fisheries sector.

BMUs are required to protect the aquatic environment and cooperate with authorities to that effect. To this purpose, BMUs may develop a co-management plan, to be approved by the County Director, outlining the management measures to be undertaken within the co-management area to ensure sustainable fisheries. Measures to be undertaken include: the designation of closed areas in which all fishing activities or specified fishing activities are prohibited; the designation of closed seasons either throughout the co-management area or in respect of specified areas; the marking of fishing vessels; restrictions on the type of fishing gears that may be used and on the number of fishing vessel licences or fishing licences that may be issued. The

plan should give effect to applicable national and regional policies and comply with existing fisheries legislation, and specify the roles and responsibilities of the concerned BMU and County Director with regard to its implementation and enforcement through the bylaws. To assure compliance, a patrol sub-committee should be created to undertake regular patrols of the area, in partnership with the County Authority. According to the Regulations, the establishment of a co-managed area and related management plan must go through a consultative process with the members of the community.

Another task of BMUs is to improve welfare and economic situation of its members, for example promoting and facilitating investments in the fish landing station and in fishing activities or supporting the development of sustainable alternative livelihood strategies (for example sustainable tourism solutions). They also assist and contribute for data collection for catch monitoring and socio-economic investigations.

For what concerns the administrative structure, each BMU consists of an Executive Committee, an Assembly and may include subcommittees if specified in the bylaws.
The Executive Committee can be composed by minimum nine and maximum fifteen representatives, elected by the members of the BMU. It consists of a chairperson, a vice-chairperson, a secretary, a treasurer and ordinary committee members, who shall meet at least once a month. Membership should be distributed as follows: 30% of boat owners, 30% of crews (persons who work on a boat but do not owe it), 10% of traders and 30% of other categories. At least three of the Executive Committee members shall be women. Members' mandate in the committee lasts four years, after that it is possible for a member to stand for re-elections, but after a second four-years term, four years need to pass again before he can candidate again. The duties of the Executive Committee consist of: supervising the general management of the BMU's activities and the implementation of its bylaws and co-management plan; convening and preparing for the Assembly; submitting the draft co-management plan and the draft budget to the Assembly; maintaining accounts and registers; formulating funding proposals, making financial reports and presenting them to the Assembly for approval; and supervising the financial management of the beach management unit.
Sub-committees are established depending on the bylaws requirements. Ordinary members of the Executive Committee shall be elected by the Executive Committee to head the sub-committees so created. Members to serve in the sub-committees are elected by the BMU Assembly and chaired by one of the ordinary members of the Executive Committee, who is designated to one of them through an internal election of the Executive Committee.
The Assembly is constituted by all the members of the BMU, who should meet at least every three months, but additional meetings may be called by the Executive Committee when necessary. On the decision of the Assembly chairperson, persons who are not BMU members may be invited to address the Assembly, but are not entitled to vote like members do. Voting can happen through hands raising or a secret ballot. Usually, a proposal to the Assembly is deemed to have been accepted it if is approved by more than half of those present. An Assembly where quorum is not achieved shall be adjourned for a period of not more than ten days. The authorized fisheries officer or any person delegated by him is entitled to attend the Assembly. Assembly's responsibilities include: approve any management plan for the BMU; adopt the BMU annual report and accounts; approve the level of any fees or charges payable by the members; adopt new by-laws and amend existing by-laws; remove from office the members of the Executive Committee.

To defray the costs of their operations, BMUs can receive funding from the Ministry of Fisheries and generate their own income through membership fees, taxing migrant fishers, or vessel registration fees, for example. Other sources of income may include grants and donations from private persons, NGOs or other donor bodies.

4.3.2. Constitution of 2010

The Constitution adopted in August 2010 has robust provisions on environmental conservation as well as on involving local communities in the process. Until 2010, Kenya's constitutional architecture had paid very little attention to these topics and LMMAs' establishment and operations had happened in spite of it (Odote et al. 2015).

Over time, however, courts in Kenya argued to consider the right to a clean and healthy environment as a key component of the right to life. Indeed, Article 42, in Chapter Four containing the Bill of Rights, gives "*every person the right to a clean and healthy environment, which includes the right to have the environment protected for the benefit of present and future generations through legislative and other measures*". Chapter Five, Part 2 covers environmental and natural resources matters and elevates the importance of environmental protection: Article 69 obligates the State to "*ensure sustainable exploitation, utilisation, management and conservation of the environment and natural resources, and ensure the equitable sharing of the accruing benefits*". The word *marine* appears in Article 260 of the Constitution in the following manner: "*Land includes marine waters in the territorial sea and the exclusive economic zone*". As Article 60 explains, it is a Constitutional requirement that using, holding and managing land is undertaken in a sustainable, equitable and efficient manner. This underscores the need for the management of land to be undertaken through sound conservation and protection of ecologically sensitive areas, which are relevant as justification for the implementation of LMMAs, which focus on conservation and sustainable utilisation of marine resources (Odote et al. 2015).

For what concerns the need for local communities to be involved in the management of marine resources, which is indeed a characterising rationale for LMMAs, the Constitution of 2010 recognises public participation as a key aspect of governance in Kenya. Article 10 lists participation and power devolution as national values and principles of governance to be applied and incorporated in every sector and governance process. Moreover, the need for increased public involvement in governance is one of the key imperatives for the adoption of a devolved system of government, whose objectives and principles are stated in Chapter Eleven, where County Governments are established. Among the objectives of devolution are: "*to give powers of self-governance to the people and enhance their participation in the exercise of the powers of the State and in making decisions affecting them; to recognize the right of communities to manage their own affairs and to further their development; and to facilitate the decentralization of State organs, their functions and services, from the capital of Kenya*" (Constitution of Kenya 2010: Article 174). Additionally, in the process of conservation and management of natural resources, Article 69 of the Constitution obligates the State to "*encourage public participation in the management, protection and conservation of the environment*". Therefore, as LMMAs provide avenues that encourage community participation in the management of the marine environment, they can be seen within the overall Constitutional provisions for public participation, conservation of natural resources and equitable sharing of the benefits that derive from them (Odote et al. 2015).

4.3.3. County Government Act (2012)

The County Government Act of 2012 provides for the operationalisation of Chapter Eleven of the Constitution of 2010 concerning government devolution and delineates powers, functions and responsibilities of County Governments. As enumerated in the Fourth Schedule of the Constitution, counties have fourteen functions. Number 10 concerns the "*implementation of specific national government policies on natural resources and environmental conservation*". Moreover, they have the responsibility of ensuring and coordinating the participation of communities in governance at the local level, as well as of assisting them in the development of their administrative capacity. Every County has a Governor, an Assembly and an Executive Committee, the

latter with one member in charge for environment and natural resources management. County fisheries officers are responsible for fisheries in territorial waters (offshore fisheries management is a Ministry duty) and report to the County Executive (MCCN 2013, Odote et al. 2015).
Thus, the Act has provisions that can link LMMAs to County Governments, as LMMAs provide a setting that enables local communities to participate in the co-management of natural resources, supporting one of the objectives of devolution.

4.3.4. Fisheries Management and Development Act (2016)

This Act repeals the Fisheries Act and provides for the conservation, management and development of fisheries and other aquatic resources to enhance the livelihood of communities that depend on fishing and ensure equitable use of marine resources. Concerning the principles that shall guide the implementation of this Act, Section 5 (1) (g) express the importance of "encouraging the participation of users of the fisheries resources, and the general community, in the management of fisheries". The Act establishes the Kenya Fisheries Advisory Council, that should advise the national Government on fisheries policies and the management of the resource (access, allocation, management plans, agreements, research etc.) and that is composed by Cabinet Secretaries and representatives of research institutions, consumer federation and fisheries. The Kenya Fisheries Service is also established, with the aim of conserving, managing and developing fisheries resources, monitoring the implementation of relevant policies and setting standards and guidelines for fisheries management. Its members are the Principals Secretaries of the Ministries responsible for fisheries, defence and finance, together with *five members, not being public officers, openly appointed by the fisheries Cabinet Secretary for their long-term knowledge and experience in the sustainable use of fisheries resources.*
Section 37 regards the establishment of BMUs, stating that: "the Cabinet Secretary (responsible for fisheries) may for purposes of ensuring structured community participation in fisheries management, make regulations setting out standards for the management of beach management units established by the County Governments". These regulations may include objectives, structure, areas of jurisdiction and mandate in co-management; standards to be adopted in the general administration of the BMUs, in levies and charges imposition and in the management of these funds; and measures for the protection of vulnerable groups and their involvement in the BMU administration and decision making.

4.3.5. Environmental Management and Coordination Act (1999)

The Environmental Management and Collaboration Act (EMCA) establishes the National Environmental Management Authority (NEMA), which supervises and coordinates all aspects of environmental matters, acting as the principal agency for implementing all government policies on the environment. According to the Act, the NEMA has the mandate of preparing a survey of the coastal zone and produce an Integrated Coastal Zone Management (ICZM) plan. The first ICZM Plan for Kenya was prepared in 2011 for the period 2011-2015. The Plan and the ICZM Policy supports the involvement of communities in managing coastal resources: indeed, in the ICZM draft Policy of 2014, it is stated that the government shall "*strengthen mechanisms for co-management, rehabilitation of coastal ecosystems, and sharing of benefits*".
Even though the EMCA considers public participation an important principle of sustainable development, some challenges to LMMAs have arisen from it (Odote et al. 2015). Indeed, Section 55 (1) and (6) of the Act empowers the Minister of the Environment to declare an area to be a protected coastal zone and formulate appropriate regulations and management arrangements to avoid environmental degradation in that area. However, it is not mandatory for the Minister to involve local communities in the designation, management and conservation of the coastal area.

4.3.6. Wildlife Conservation and Management Act (2013)

The Wildlife Conservation and Management Act was passed in 2013 and came into operation in 2014, replacing the previous wildlife regulation and aligning to the Constitution of 2010, with strong provisions for public participation in the management and conservation of wildlife resources outside protected areas (MCCN 2013, Odote et al. 2015). The Act establishes the Kenya Wildlife Service (KWS) to manage national parks and reserves, providing for overall protection and sustainable management of wildlife in Kenya. Among the key objectives of wildlife management, there is also the development by KWS of mechanisms of benefits sharing with the communities living in the areas where wildlife resources are found (MCCN 2013, Otode et al. 2015). The Act recognises community conservancies among the different forms of wildlife protection and defines them as "*land set aside by [an individual landowner, body corporate, group of owners or] a community for purposes of wildlife conservation*" (Wildlife Act 2013: Art 3). Another relevant provision is represented by Article 40, which empowers communities to create and register Community Wildlife Associations. These associations can be involved in co-management of wildlife resources through their participation in the County Wildlife Conservation and Compensation Committee of the area (see Article 18, 19 and 40 of the Wildlife Act 2013). Although this regulation mostly relates to wildlife issues in land-based parks and conservancies, with little mention on fisheries and marine environment, there is nothing to suggest that the Act could not equally apply to a coastal-marine area when a community is able to establish its right of access to and tenure over that area (MCCN 2013).

4.3.7. Forests Act (2005)

This legislation can be relevant to LMMAs in mainly two points. The first is Section 40 (1) (h), where mangrove forests are mentioned as habitats for fisheries to be managed on a sustainable way, which links mangroves to marine resources and brings them within the range of LMMAs' management objectives (Odote et al. 2015). Secondly, with this Act, the government embraces the concept of participatory forestry management, giving particular consideration to the formation of Community Forest Associations, which are recognized as partners in management of forest areas, including mangrove coastal areas (Forests Act 2005: Article 45). Additionally, for communities that desire to engage in the management of forest resources, the Kenya Forest Service (KFS) issued the Participatory Forest Management Guidelines, which are useful not only for co-managing mangrove areas, but also as a best-practice guide to the process of creating LMMAs guidelines (Odote et al. 2015).

4.4. Overall marine governance structure in Kenya

With the Constitution of 2010, marine resources governance has thus been decentralised from the national level to the county level, more specifically to fisheries officers of the county administrations. County fisheries officers report to the County Executive and liaise through their line management with the central government authority: indeed, county administration and planning is carried out within policy frameworks established at the national level, through National Development Plans (MCCN 2013).

BMUs are primarily a county function with the County fisheries officers supporting and coordinating BMU's activities and reporting. Their government-established mandate, which makes them a government extension at community level, BMUs are currently the most viable structure for coastal resources management in terms

of legality. However, there are other community-based organisations (CBOs) involved in marine resources use and conservation: community self-help groups, initiated by local community members; donor/NGO-initiated organisations, which can help improving coastal management outcomes; and umbrella groups, for

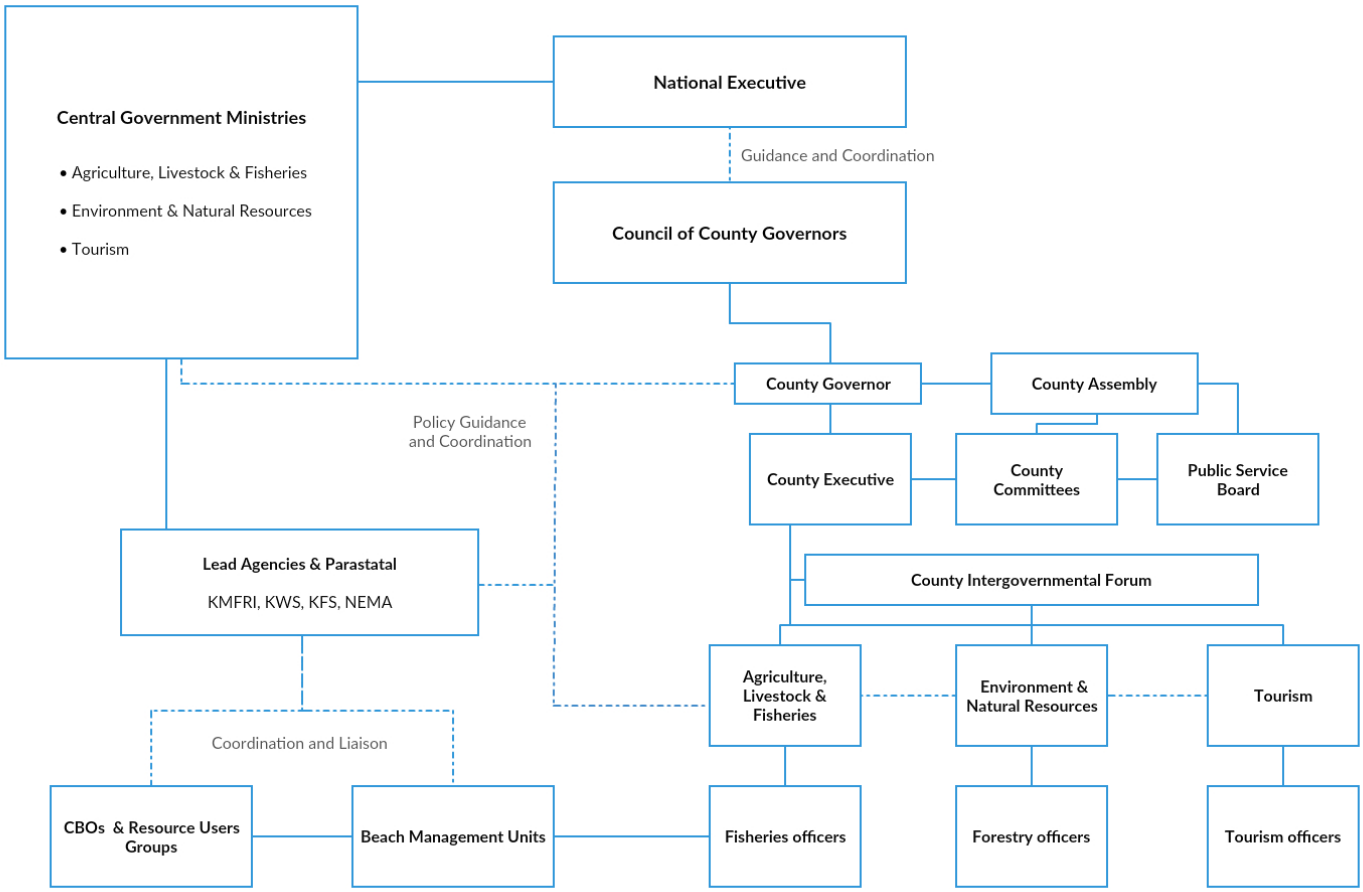

Figure 6: The new County Government structure in relation to community fisheries management (MCCN 2013)

better coordinating the activities of different CBOs and engaging in advocacy. What differs these groups from BMUs is that, even though they are recognised by the government, they lack a legal mandate and thus are not able to make binding decisions on behalf of the community (MCCN 2013).

Other important actors in marine governance in Kenya are state agencies involved in marine research and conservation, like the KMFRI and the KWS. These bodies can perform an advisory role, supporting and coordinating BMUs and other CBOs' activities.

Lastly, an extensive number of NGOs play funds and supports poor coastal communities in managing natural resources to preserve the environment and improve their livelihoods. This is done especially through attempts of community empowerment, mobilizing local communities and representatives of civil society in all matters of participatory planning and implementation of sustainable socio-economic programmes at grassroots level (MCCN 2013).

5. RESULTS

This Chapter presents the results of the data collection, with the description of the Wasini and Kibuyuni LMMAs management structure and characteristics. The general aspects common to the two LMMAs management are outlined in paragraph 5.2, then sub-paragraphs 5.2.1 and 5.2.2 will consider the particular features characterising marine resources management in the two communities. A comparison between the two LMMAs will also be given to highlight their similarities and differences. Moreover, a further paragraph provides the stakeholder analysis relative to the mentioned LMMAs. But first, this section starts with an introduction concerning the project for the establishment of the seven CCAs in Shimoni-Vanga.

5.1. How it started

As already mentioned in the Introduction (Chapter One), the two CCAs are the result of a community conservation project started in 2009 by EAWLS and FFI, founded by the Darwin Initiative[4] and Seacology[5], located in the Shimoni-Vanga area. The aim of the project was to conserve biodiversity and improve coastal communities' livelihoods through a sustainable management of marine and coastal resources in the area. The objectives were to increase the percentage of marine protected areas in Kenya, support government measures providing for more community driven initiatives for coastal resources management (the BMU Regulations), and community capacity-building for these purposes. The project development involved, besides the communities, also stakeholders from the Government and the private sector, with the Fisheries Department being the main partner, for an efficient delivery of its outputs (Darwin Initiative 2011).
The project was articulated through different activities. First of all, biodiversity and socio-economic surveys were performed in the project area with the consultancy of a local NGO, CORDIO. Then, a total of 60 participants from the Executive Committees of the seven villages BMUs underwent training covering fisheries management, BMU roles and responsibilities, bylaws development, monitoring and surveillance (with the assistance of Kenya Wildlife Service), conflict resolution and financial management. The training was facilitated by the Fisheries Department. Next, CCAs sites were identified and mapped together with the seven BMUs, each of which established different management measures, including the prohibition of certain fishing gears and permanent and seasonal closures. An Environmental Impact Assessment was undertaken with consultancy from CORDIO to implement and operationalise the co-management areas. Moreover, draft co-management plans for the seven villages CCAs, to be included in the BMUs' by-laws, were developed in a participatory and consultative manner: after more than a month-long consultation with the communities, as well as with the other partners, the process was concluded by a workshop held in Shimoni, where feedbacks on the co-management plans were given to the communities and the partners. Due to time and financial limitations, two comprehensive management plans were produced for Wasini and Majoreni, while for the other five communities it was possible to deliver summary management plans. Finally, various educational materials like posters, information boards, pamphlets and newsletters were produced and distributed to raise awareness among the communities, describing the project development, processes and achievements. This aims at facilitating and stimulating the replication of the initiative along the Kenyan coast (Darwin Initiative 2011, BMU.W.1).
The project ended in 2012 and, according to the Darwin Initiative Final Report (2012), the main accomplishment of the project regards the establishment and the strengthening of the seven BMUs,

[4] The Darwin Initiative is a grants scheme from the United Kingdom government helping to protect biodiversity and ecosystems through locally based projects worldwide: www.darwininitiative.org.uk

[5] Seacology is a NGO from the USA, whose mission is to work with islanders around the world to protect threatened ecosystems and help their local communities: www.seacology.org

empowering also marginalised groups such as women and youth to participate in fisheries management. The establishment of a BMU is formalised through the institution of by-laws, agreed by the community and the Fisheries Department, which lacked resources to develop a suitable methodology for the by-laws. Moreover, the co-management plans realized under this initiative were the first of their kind in the Kenyan coast (Darwin Initiative 2012).
For what concerns the creation of the protected area, the initiative accomplished the establishment of two LMMAs in Wasini and Kibuyuni, with the other communities having identified, mapped and by-laws developed for their CCAs. The project illustrated the LMMA approach to fisheries management to the communities also by supporting the development of alternative livelihoods like ecotourism or mariculture, which are now taking place in Wasini and Kibuyuni. However, it is believed that it is necessary to structure and focus future awareness and training projects on the BMUs' assemblies and not only on the Executive Committees, ensuring thus a proper oversight role of the former in the BMU management. Lastly, it is also mentioned the importance of communities to fully understand the relevance of well managed ecosystems, without only focusing on the potential financial benefits (Darwin Initiative 2012).

5.2. Wasini and Kibuyuni LMMAs management

This section is dedicated to a description of the two LMMAs main features, in terms of the way they are managed, of decision making mechanisms and of the activities related to their functioning. Before presenting the two cases and their specific traits separately, an explanation of the characteristics the two LMMAs have in common is provided.

In Kenya, since the establishment of BMUs and the adoption of a co-management approach in marine resources management, LMMAs have been officialised as a fisheries management measure implemented under a BMU jurisdiction and authority. The BMU is therefore the main agency involved in CCAs implementation and administration as a representor of the community, in collaboration with the County Fisheries Department, who delegates the "*authority for the responsible and sustainable management and conservation*" (Appendix D). LMMAs are thus considered by law as co-management areas, in which different management efforts can be undertaken, for example the designation of a closed area or the prohibition of specific fishing techniques. The establishment of a BMU co-management area is linked to the preparation and the implementation of the BMUs bylaws and co-management plan. For both Wasini and Kibuyuni the preparation of the co-management plan and of the bylaws involved especially the two main co-management stakeholders, the County Fisheries Department and the BMUs' members, with the advice of the supporting NGOs (NGO.3, NGO.4, BMU.K.1). It is a participatory process, involving community consultation through feedback meetings, focus groups and participatory mapping (Figure 7).
As specified in the endorsement section of both Wasini and Kibuyuni co-management plans, a co-management plan is a "*plan specifying the fisheries management measures that are to be taken to ensure the sustainable utilization of fisheries within the BMU co-management area*" (Appendix D and F). It contains a short description of the co-management area and of the fishery, a brief stakeholder analysis and of course a management programme, indicating the management and operational objectives and the relative activities, actions and indicators to their fulfilment.
The bylaws "*shall bind the BMU and the members therefore to the same extent as if they were signed by each member and contained covenants on the part of each member to observe all the provisions of the bylaws*" (Appendix C and E). They regard the whole BMU administration, considering, beside the fisheries management measures, its composition, structure, roles, financial management and fines scheme.

The functioning of both Wasini and Kibuyuni BMUs follows what stated by the Fisheries regulations of 2007. The Assembly is the supreme decision-making organ, discussing the proposals of the Executive Committee, which is responsible for implementing the decisions of the Assembly (FISH.K.1, CBO.1, BMU.W.1, BOAT.W). The main topics of discussion include activities to be organized, issues raised by the members, meetings with stakeholders outside the community or budgetary subjects. Usually these matters are discussed and decisions are taken through votes taking place until the Assembly reaches consensus or at least until the majority agrees (BMU.W.1, BMU.W.2).

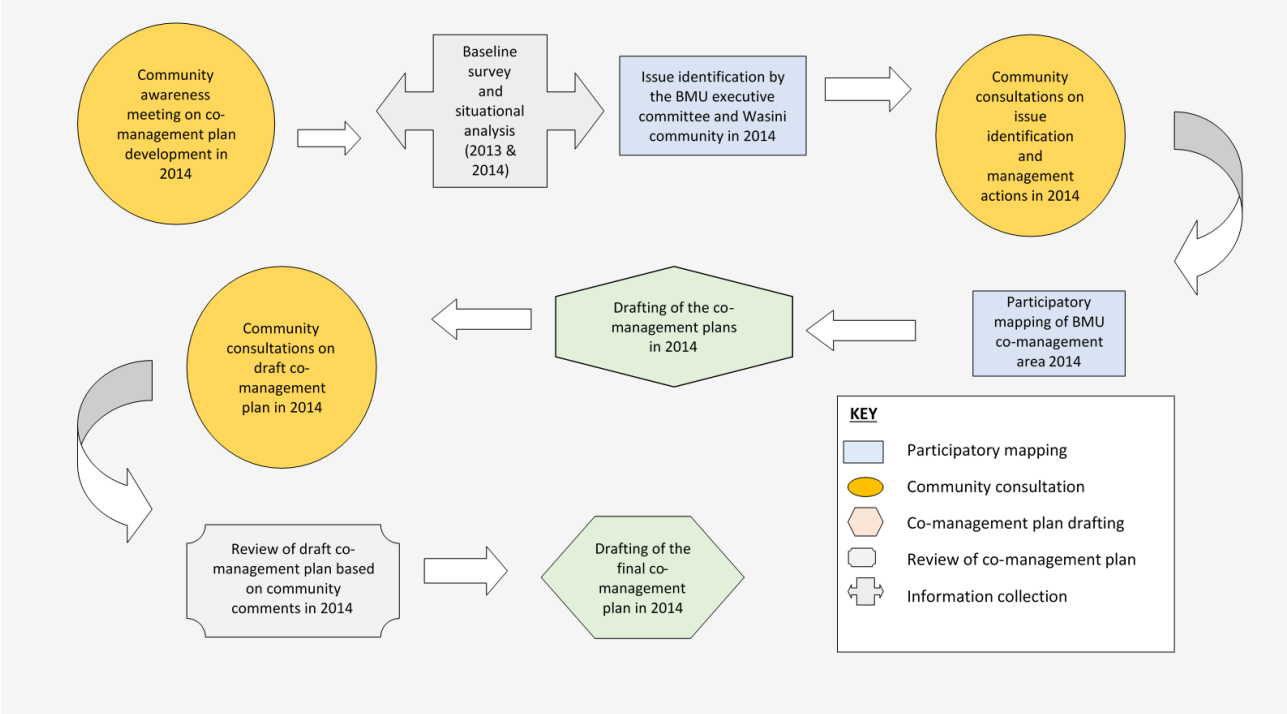

Figure 7: Wasini co-management plan development process (Appendix D)

Assembly members exercise their authority in the Assembly meetings, taking place every three months. Beside the quarterly BMU Assembly meetings held pursuant to the regulations, special general Assembly meetings shall be held when convened by the chairperson or on request of at least one third of the Assembly (FISH.K.2, BMU.W.1, BMU.W.2, FISH.W.1, FISH.W.2). As there is no fixed calendar, to notify the Assembly members about the meetings, the news is spread through letters, posters and through word of mouth a few weeks before the programmed date (BMU.W.1, BMU.W.2). Members of the Assembly participating at the meetings receive a financial contribution for their presence (BMU.K.1, BMU.W.1).

BMU members must be stakeholders in the fishing sector and dealing with fishing activities, but both in Wasini and Kibuyuni meetings are open to whoever is interested in attending them (BMU.K.1, BMU.W.1).

The Executive Committee is democratically elected by the Assembly every five years through a secret ballot. It meets once per month and is organised in sub-committees. The committee oversees meetings organization, finances management, conflict resolution, bylaws or co-management plans preparation, *etc*. (BMU.K.1, BMU.W.1, FISH.K.2, NGO.3).

Both Wasini and Kibuyuni bylaws mention that the BMU shall have the following employees:

- A watchman, guarding BMU assets and equipment
- A cleaner, cleaning the office and its compound
- A clerk, weighing and recording fishermen daily catch

The BMU funds are drawn from the membership fee, the annual membership registration fee, the annual vessel registration fee and the daily fish landing fee (BMU.K.1, BMU.W.1, NGO.1, NGO.4). Financial resources can also come from tourism activities, like snorkelling and diving inside the protected areas. BMUs are allowed to ask for the payment of an entry fee and can eventually also provide tourists some basic equipment like masks and snorkels. Tourists are often brought by KWS or by tour operators and hoteliers from Shimoni and other touristic locations nearby (FISH.K.2, BMU.K.1, BOAT.W). Funds are kept in a bank account, who signatories must be the chairman, the treasures and one member of the Assembly. The BMU should keep books and registers (the complete list can be found in Appendix C and E), including a register of members, of vessels and of charges owed and payed (BMU.K.1, BMU.W.1, BMU.W.2). Funds are used for patrols, office administration, salaries, travelling and beach cleaning. With part of the available funds, Wasini and Kibuyuni BMUs are supporting their communities' social welfare, financing teachers and sending children to school, fixing community infrastructures and financing community activities (FISH.K.2, BMU.W.1, FISH.W.2, FISH.W.1, BOAT.W, NGO.2).

Funding can also come from donors, like the World Bank, UNDP, Seacology and the Darwin Initiative, especially for projects developing and community training. However, funds from donors are usually available only for a limited period, for example for the duration of a particular project. It is then a BMU task to find again a donor and prepare projects proposals to get funding (GOV.1, GOV.2, BMU.W.1, NGO.1, NGO.2, NGO.4). BMUs are often supported by NGOs in connecting with donors (like EAWLS with the Darwin Initiative) and preparing proposals. In general, NGOs contribute to raise awareness among communities, through education and capacity building activities for a more responsible fishing and better conservation efforts. They collaborate with governmental agencies and with BMUs in the preparation of co-management fisheries plans, collecting data and providing scientific and technical knowledge. They also support communities in developing alternative livelihoods and occasionally attend BMU meetings (BMU.K, BMU.W.1, FISH.K.2, GOV.3, NGO.1, NGO.2, NGO.3, NGO.4).

The bylaws enforcement is a duty of the BMU, in collaboration with the County Fisheries Department and other governmental agencies, often the KWS, managing the nearby Kisite MPA (BMU.K.1, GOV.2, NGO.4, GOV.3). For what concerns especially the enforcement of fisheries measures, a patrol sub-committee is supposed to monitor the co-management area. A list of fines and penalties for different offences is presented in the bylaws of both Wasini and Kibuyuni BMU (Appendix C and E). They include fishing in the closed areas, use of illegal fishing methods and coral collection. The collection of these fines also contributes to the BMU funds. Both BMUs rarely apply fines and penalties on their own, but report the illegal fishing to KWS or more often to the County Fisheries Department. The latter enforces the bylaws and, if the illegal fishermen is caught and pays the fees, pays back the interested BMU (GOV.2, GOV.3, BMU.K.1, BOAT.W). A big challenge in enforcing the co-managed areas is the presence of fishermen from Tanzania or other nearby Kenyan villages, fishing illegally in Shimoni-Vanga area (GOV.2, BMU.K). "*They sometimes come at night time and fish in the closed area and with unsustainable methods. Our boat is small and most of the time not enough to catch them*" (BMU.K). Migrant fishers have a long tradition in the community, visiting especially from Pemba and Zanzibar (Tanzania): some marry locals but still migrate, others stay for periods from three to eleven months (MCCN 2013). They can access the same fishing ground as local fishermen, but often have better gears (including illegal ring nets and spear guns) and larger boats. According to the BMUs bylaws, they are supposed to land their catch at the market and pay the corresponding levy, but almost no enforcement is in place and not enough data on the scale of catch is available to exactly determine their impact (MCCN 2013). According to some interviewees (NGO.1, NGO.2, NGO.4, BMU.W.1, GOV.3), more operational and financial support is needed from the government to improve BMUs monitoring and surveillance capacities and strengthen bylaws enforcement, especially when dealing with foreign fishermen.

5.2.1. Wasini

Wasini is one of the three villages situated on Wasini Island and is home to about 1,500 inhabitants. The whole island is seven kilometres long and three kilometres wide, separated from the mainland by a two-kilometres large channel in the north, and in the very proximity of Kisite Marine Park and Mungputi Marine Reserve, which lays about two kilometres on the southern side. Most of Wasini inhabitants depend on fishing (carried out in nearshore waters and lagoons) and ecotourism as means of livelihood (MCCN 2013, Murage & Mwaura 2015).

The Wasini co-management area is located around the western half of the island and covers approximately 352 ha. In this area, fishing with seine nets (*buruta*), spear guns (*midete*) and ring nets is prohibited. The closed area has a size of 30 ha and is situated the nearshore waters in front of the village and the BMU office (Appendix D).

This LMMA has had an unusual history of development, meaning that a small group of individuals initiated the process of a *tengefu* in 2003, several years prior to the BMU (MCCN 2013, BMU.W.1). Indeed, fourteen fishermen from Wasini had participated to a cycle of seminars organised by the NGO Pact Kenya which aimed at setting up LMMAs in the area. These seminars lasted for one year and a half, with one week-long sessions every month. However, many fishermen gradually quitted this project, as they could not afford to lose days of work. Only three fishermen stayed (among which the current BMU chairman) and were trained (MCCN 2013, BMU.W.1).
The NGO was supposed to finance the establishment of closed areas but in the end the promised funding did not arrive. The three fishermen decided to start the LMMA in Wasini anyway, as they thought they had the knowledge they needed, the area to be closed would have been quite small and it could have been possible to earn revenue from tourism. Indeed, Wasini island was already interested by tourism thanks to the nearby Kisite Marine Park, attracting visitors both from Kenya and outside the country. Many boat tours in the Park are organised by people from Wasini and restaurants and hotels developed in the island thanks to the tourist flow characterising the MPA (MCCN 2013, BMU.W.1, BOAT.W., GOV.3). "*The LMMA could be a cheaper alternative to the Marine Park for tourist who wanted to snorkel or to dive; the place is small but with a lot of fish and with nice corals, that is why they decided to close it*" (Wasini Boat Operator, BOAT.W).
The main challenge was to convince fishermen not to fish in the area. "*At that time, there was no document to enforce it, no bylaws, no management plan, no national regulation. It was a sort of 'illegal' LMMA*" (Wasini BMU chairman, BMU.W.1). There was some success after holding different meetings with religious leaders, elders and fishermen to explain the benefits of the closed area both in terms of conservation, tourism and income. Seven people joined the group, they demarked the area with buoys, patrolled it and began to charge tourists. However, hoteliers in the area refused to accept the charges, saying the village had no authority to close an area and collect fees. With the establishment of the BMU in 2009, the declaration of by-laws enabled the village to legitimate the LMMA and the fees, with the support of the Fisheries Department (MCCN 2013, BMU.W.1, BOAT.W).
Therefore, when EAWLS started its CCAs project, the local community of Wasini was already familiar with having a protected area and aware of the benefits that this could bring to the village, which is most likely one of the main reasons why this LMMA has developed and been implemented.

5.2.1.1. Wasini BMU

As stated in the Wasini co-management plan 2014-2018 (Appendix D), "*the overall purpose of the BMU is to collaboratively manage the Wasini village fish landing station, local fishery resources and the marine*

environment with the State Department of Fisheries". Through its approved bylaws and the co-management plan, the BMU has identified as its main management objectives (Appendix D):

- To build capacity of the BMU to sustainably manage Wasini marine resources, supporting sensitization programmes, strengthening BMU administration and providing adequate infrastructure and services at the Wasini landing site.
- To support the conservation and rehabilitation of sensitive and degraded habitats, through the elimination of illegal fishing methods, the implementation of community-led recovery projects, and community sensitization.
- To have successful environmentally and socially sustainable alternative income generating activities, promoting ecotourism in the village and identifying other alternative livelihoods than fishing.

In January 2017, there were 240 registered members in Wasini BMU, 13 of which constitute the Executive Committee (BMU.W.1, BOAT.W). The bylaws (Appendix C) then state that the BMU should have eight sub-committees regarding:

- Patrol, to prevent illegal fishing, enforce the protected area and rescue fishermen
- Hygiene and sanitation, ensuring proper handling of fish and proper cleaning of the landing site and the village
- Conflict resolution among stakeholders
- Finance, keeping financial records and assisting in budget preparation
- Eco-tourism, to ensure that tourists are accompanied by a trained guide and that entry fees are payed
- Environmental conservation and resource utilization, enforcing bylaws that prohibit coral extraction, mangrove cutting and sand collection
- Security and enforcement of National Laws
- Gender, HIV/AIDs and community welfare, raising awareness about diseases, sensitizing the community about the role of the BMU and managing and coordinating the various activities that utilise the BMU fund for the community.

For this LMMA, the main source of funding, beside the financial support from donors, comes from tourism in the closed area: tourists can snorkel and dive in the *tengefu* by paying a small fee to the BMU, which amounts to five USD for non-residents, while residents are allowed for a cheaper entrance fee. Moreover, Wasini bylaws present a detailed charges list per type of catch for traders and for fishermen, as well as a list of fines and penalties for illegal activities (Appendix C). However, enforcement of fees payment and of the bylaws in general is still a big challenge for Wasini BMU. Even though the presence of patrol sub-committee is considered in the bylaws, there is no designated patrol boat. Proper patrols of the co-management area happen only a few times per month and the closed area is monitored just during the day by fishermen working in the nearby waters (BMU.W.1, BOAT.W).

5.2.1.2. Wasini mangrove boardwalk

The LMMA was not the first community project to be implemented by the inhabitants of Wasini village: the Wasini Women Group (WWG) has been preserving mangroves since 1978 (CBO.1).
The Group is made of women from Wasini (in January 2017 they were 63 members) and since 2001 has been managing a 500 meters long boardwalk (a raised looped wooden platform) stretching within the island fossilised coral reef gardens and pristine mangrove forest. During high-tide the seawater covers these coral gardens, above which visitors are guided along the boardwalk. Along various points on the boardwalk the visitors can enjoy the very particular scenery and are also educated by the local guide on the various

mangrove species and other significant formations and ecosystem functions. Beside this ecotourism activity, the Group also seasonally harvests mangrove crabs. Several donors supported the project both with funding and training in business management and governance and leadership for the group (among them, the Netherlands Wetland Program, IUCN, USAID and the European Union) (CBO.1).
The Group's Executive Committee is made of 9 components and has the function of making proposals to the Assembly, which is meeting every month and takes the final decisions. To participate and work in the Group, members have to pay a small entry fee and renew their inscription every few years. Revenues from the activities are dispensed not only among the members' salary and the boardwalk maintenance, but are also destined to a fund for supporting the community, especially for children education (for school fees and teachers' salaries) and for medicine supplies for the local dispensary (CBO.1).
The development of this project, beside improving mangrove protection, represents a demonstration of how a group of locals can manage their own natural resources engaging in non-extractive activities like ecotourism, from which the community can benefit in terms of livelihood enhancement. The beneficial effects of the initiative include as well increased goodwill in the local community to protect its natural resources. However, it also stresses the importance of having donors supporting the project, as the ecotourism activity was initiated and sustained by external funds.

5.2.1.3. Coral restoration project

"It is something that has never been done anywhere else in East Africa, we are the first and the only community planting and restoring corals successfully". Wasini BMU chairman (BMU.W.1).

"We've seen that what we have planted is growing and we are proud of it, especially because we did it, people from Wasini are doing it". Wasini BMU Vice Secretary (BMU.W.2).

A very important and distinctive characteristic of Wasini LMMA is the ongoing coral reef restoration project taking place in the closed area, with the aim of protecting corals and fish spawning grounds, as well as attract ecotourism opportunities.
The coral culturing and replanting activity was initiated in 2013 through small funding support from the United Nations Development Programme Global Environment Facility Small Grants Project (UNDP GEF SGP) and then upscaled through the GEF grant of the Kenya Coastal Development Project (KCDP), a World Bank/Government of Kenya project[6]. It is a participatory community-driven initiative with technical and scientific support from KMFRI, in partnership with the Africa Nature Organization (a local NGO) and the State Department of Fisheries (Murage & Mwaura 2015, BMU.W.1, BMU.W.2, BOAT.W). The programme focuses not only on improving coral cover and biodiversity, but also on developing restoration low-technology techniques appropriate for community-based efforts and on increasing community awareness on the importance of a healthy reef habitat (Murage & Mwaura 2015).
The project included an initial training of 40 participating community members about the biology of coral, the challenges coral reefs are facing and the importance of active management. They were also educated in the restoration methods currently available, including mapping and coral transplantation techniques on selected degraded areas. Moreover, community meetings were held to reach a consensus on the need for active reef restoration, where issues of coral degradation, its causes and remedies were discussed (Murage & Mwaura 2015, BMU.W.1, BMU.W.2, BOAT.W).

[6] The KCDP is a multi-sectoral development programme financed by the World Bank and UNDP and hosted by the KMFRI. The Project's objective is to improve management effectiveness and enhance revenue generation from Kenya's coastal and marine resources. It focuses on the marine, inshore and coastal environment and promotes policy, legislative and institutional reform geared at increasing revenue, productivity, incomes and quality of life for the poor (KCDP 2015).

The main phases of the coral culturing and replanting activity included (Murage & Mwaura 2015):

- Identification and baseline survey of degraded reefs areas in Wasini
- Identification of coral fragments donor sites
- Construction of nursery beds and concrete blocks
- Collection and translocation of coral fragments from donor sites to nursery beds
- Transplanting coral fragments into nursery beds
- Transplanting nursery grown corals onto concrete blocks[7] in degraded areas.
- Regular monitoring and maintenance of transplanted corals

Figure 8: Billboard in Shimoni advertising Wasini coral restoration project. Source: author's archive.

The community was actively involved in these tasks and currently more members have been trained not only on transplanting techniques, but also on monitoring and maintenance methods. Participants are receiving remuneration for their work from the BMU, which also keeps employees and payments information, recorded in official registers. These registers are used by the BMU to keep track of the presence of employees, to maintain a rotation within the group, as a work session may not need the involvement of all of them. In this way, every trained community member has the chance to participate in the activities (BMU.W.1, BOAT.W, FISH.W.1, FISH.W.2).

Tourism activities in the *tengefu*, such as snorkelling and diving are picking up in the area, enhancing income generation for the BMU members and livelihoods for the community (Murage & Mwaura 2015, BMU.W.1, FISH.W.2).

Through this project, at least 1 hectare of degraded coral reef has been restored, and through awareness and community capacity building, there is increased appreciation and understanding of the ecological value of

[7] Most of the degraded areas comprise mainly unstable coral rubble, therefore concrete blocks were used to build typical pyramid reefs. The pyramid frame was selected to provide a strong footing to which the corals could be attached. The surface is used to anchor the coral fragments, while the block also acts as an artificial reef to attract fish.

reefs and transplanting techniques. In the long term, through joint monitoring by the KMFRI technical team and the trained community members, it is expected that the programme can be upscaled, expanded and replicated to cover more areas along Kenyan coast and elsewhere in East Africa (Murage & Mwaura 2015, BMU.W.1). Indeed, up-to-date news from the KCDP inform about a BMU exchange visit in May 2017, hosted by Wasini BMU, with thirty fishermen coming from thirteen BMUs from Kwale and Kilifi Counties. Some Wasini BMU members explained the main features of the coral restoration project, while researchers from KMFRI were assisting the training, providing the technical expertise. The exchange visit consisted of a three days-long workshop, involving theory and practical learning sessions, including a demonstration of coral transplantation at sea from a donor site to a recipient degraded site.

5.2.2. Kibuyuni

Kibuyuni is a village of less than 1,000 inhabitants and, like the other communities in the area, it is predominantly a fishing community. Other activities include cultivating maize and rice and farming seaweed (MCCN 2013). Tourism has not particularly developed yet, probably also because of the isolated position of the village, which also lacks the facilities to welcome tourists for more than a daily stay.

Kibuyuni CCA is situated in the sea in front of the village, bordering with the areas of jurisdiction of Wasini, Shimoni and Majoreni BMUs. The co-management area covers a surface of 2561 ha and is divided into two zones: 28 ha constitute the closed protected area, delimited by buoys, in which only tourism activities are taking place, while the rest is a gear restricted fishing zone. The *tengefu* covers the area close to the shore in front of the village and is situated close to Kibuyuni seaweed farming site. According to Kibuyuni Management Plan (2014), the permitted gears are basket traps, hand line and gillnets.

5.2.2.1. Kibuyuni BMU

The BMU in Kibuyuni was registered in 2008 and has about 200 members, while its Executive Committee is formed by 15 members (BMU.K.1, FISH.K.2).
A few years after the BMU establishment, the Executive Committee was overturned because of corruption. Fifty members of the community signed a petition which was taken to the Fisheries Department. They were supported and another election was held in 2010, when the current BMU chief was elected for the first time (MCCN 2013, BMU.K.1).
The main management objectives of Kibuyuni BMU include (Appenidx F):

- To effectively enforce gear restrictions in the co-management area
- To enhance awareness of sustainable management of marine resources, developing income generating activities in the co-managed area in collaboration with stakeholders
- To enhance access to information and education regarding the marine environment, holding regular public meetings
- To create mechanisms for scientific research development and establish a socio-economic and ecological monitoring programme of the co-management area

According to Kibuyuni bylaws of 2011, the BMU structure should be articulated into six sub-committees (Appendix E):

- Patrol, preventing illegal fishing and enforcing the bylaws in the co-management area
- Hygene and sanitation, for proper handling and storage of the fish
- Finance and administration, to ensure proper use of BMU funds and keep financial records

- Data collection, statistics and information technology, keeping records of the collected data and disseminating the information
- Ecotourism, environmental conservation and resource utilization, promoting tourism activities and preventing mangrove poachers or land grabbers
- Conflict resolution among members, social welfare and HIV/AIDs awareness, sensitizing and informing the community about communicable diseases and soliciting funds for community development

Kibuyuni BMU appears to be committed to fight illegal fishing practices. A patrol boat is available and night patrols have been organised to enforce the closed area, however during the day the area is controlled by the village fishermen while fishing and the seaweed farmers (Paragraph 5.2.2.2.), without any organised scheme (BMU.K.1, FISH.K.1, FISH.K.2). Moreover, their bylaws report a detailed list of offences with the relative fines and penalties to be payed (Appendix E). Another interesting point to consider is the mention for a landing fee to be asked to immigrant fishermen specifically, but the absence of any tourism fee officially reported by the bylaws. The village is indeed rarely receiving tourists, mainly because of its isolated location and the lack of infrastructures to welcome tourists.

5.2.2.2. Seaweed farming

Seaweed farming has been identified as a good opportunity for social and economic development of coastal areas. This activity represents an alternative livelihood for poor fishing communities whose sustenance and employment have been put at serious risk by diminished capture fisheries. Depending on the type of seaweed, there are many and different purposes to its use, including its application as thickener and homogeniser in pharmaceutical, cosmetic and food products (Msuya 2006, Wakibia et al 2006, KCDP 2015).
Seaweed farming was introduced in Kibuyuni in 2001 by KMFRI. The project first started as a trial, carried out until 2003, researching the activity feasibility in the area. After being abandoned for a few years, the initiative was revised in 2010 and officially launched in 2011, involving a group of 60 seaweed farmers, 90% of which are women. The project first started with a training period, during which the farmers received the technical support from KMFRI. Then, KCDP developed the project by setting up the farming structures and drying racks, supplying the group with seaweed seeds (the harvested species are *Euchema denticulatum* and *Kapphycus alverzezii*), working materials and tools. Lastly, a seaweed buyer was engaged, so that the dry product is now exported to Indonesia, Ireland, Malesia and China. In 2015, farmers have produce 10 tons of dried seaweeds in February worth 450,000 ksh and in April a further 14 tons was sold at approximately 500,000 ksh (KCDP 2015, Ochieng 2015, FISH.K.2).
The initiative has been improving the standards of living for the community of Kibuyuni: with the income generated by the selling of the seaweed, farmers have been able to bring their children to school, build better houses and buy medicines. It is especially important when considering the fact that men are representing only a small percentage of the farmers: indeed, the project has involved Kibuyuni women, providing employment and knowledge to a group that is usually considered marginalised when considering the active management of natural resources (KCDP 2015, FISH.K.2).
Seaweed farming in Kibuyuni is related to the village LMMA in three ways. First of all, the seaweed growing zone is meant to be a no-fishing area and an attractive environment for fish, promoting environmental conservation (KCPD 2015, Ochieng 2015). Secondly, the farms are situated close to the *tengefu*, so that during the day illegal fishermen can potentially be spotted by the farmers (FISH.K.1, FISH.K.2, GOV.2). Lastly, the presence and the development of the seaweed farms constitutes a good example of alternative livelihood, with a lot of potential for growing, bringing improvements to the community (Msuya 2006, Wakibia et al 2006, KCDP 2015).

5.2.3. A comparison between Wasini and Kibuyuni LMMAs

Wasini and Kibuyuni LMMAs share many similarities especially in the way they are administrated, since in both cases the BMU is the body in charge for managing the co-management area. This implies that the decision-making process, involving the Assembly and the Executive Committee, is characterised by the same procedures. The two BMUs' responsibilities, duties, structure and membership requirements comply with the characteristics described in the Regulations of 2007. In both cases, the BMU chose to establish a closed area, where no extractive activity is allowed, inside their co-management area, where instead only certain types of fishing methods are permitted. The two LMMAs are defined legally by the bylaws and the co-management plan adopted by the respective BMUs in accordance with the County Fisheries Director. The bylaws also contain lists of fees, fines and penalties which are to be enforced by the BMU. Yet, a first difference may be found with regard to this matter. It is interesting to notice that membership fees, including annual registration fees for members and vessels, are higher in Kibuyuni than in Wasini. Furthermore, Wasini bylaws report a more specific list of fees to be payed according to the type of fishing product, making distinctions between fishermen and traders. On the other hand, Kibuyuni bylaws contain a more detailed catalogue of fines and penalties to be adopted for possible violations. Still, BMU's revenues are in both cases destined to similar purposes, such as salaries, meetings allowances, patrols and social welfare. For what concerns the enforcement of the LMMAs and of the BMU's bylaws, this is quite weak both in Wasini and Kibuyuni. Only the latter has organised night patrols regularly, but in general patrols are carried out on a rather informal way by members, while fishing or farming seaweed.

Tourism activities have been developing in both Wasini and Kibuyuni LMMAs, however the former appears to be more organised and successful than the latter. Indeed, Wasini Island, being very close to Kisite Marine Park, is often hosting visitors after their excursions in the Park, mainly for lunch in the restaurants of the island. Local tour operators and restaurant owners, in accordance with the BMU, can therefore propose snorkelling and diving activities in the conservation area, village excursions and visits to the WWG mangrove boardwalk (BMU.W.1). These visitors rarely spend more than half a day on the island, as they participate in day trips organised by tour operators coming mainly from Diani, a coastal locality further north which is very popular for tourism. However, even if it still regards a small-scale kind of tourism, the flow of tourism for Wasini LMMA is increasing year by year (BMU.W.1, BMU.W.2). Kibuyuni LMMA is also open for tourists to snorkel and dive in its waters but the number of visitors is definitely smaller compared to the one in Wasini (GOV.2, GOV.3). This is probably due to the fact that the village is more isolated and not in the common touristic itinerary to the Marine Park. However, sometimes the KWS brings visitors to the LMMA or Kibuyuni boat operators and other community members promote this activity while working in Shimoni, the biggest village in Shimoni-Vanga area from where tours to the Marine Park depart (GOV.3, FISH.K.2). On the other hand, in Kibuyuni seaweed farming has been developing as an interesting and relevant source of alternative livelihood, as explained in the previous paragraph. An impressive aspect of this project is that it has been carried on by a group of women, who in this way got the chance to empower themselves and earn a salary. Since they constitute an important organisation in the marine resources sector in Kibuyuni, these women are also members of the BMU (FISH.K.2). Wasini women are also organised in a group, managing a mangrove area and trying to develop an ecotourism activity, even though revenues are quite low lately (CBO.1).

An element of difference between the two LMMAs that is worthy of attention is the fact that Wasini LMMA is the location of a coral restoration project, which engages the BMU members, some NGOs and a few donors. The initiative is considered a big success by the BMU members (BMU.W.1, BMU.W.2, BOAT.1) and is definitely the element that positively marks the LMMA when other stakeholders speak about it (GOV.2, GOV.3, NGO.2, NGO.3, NGO.4). The project attracted donors and Wasini BMU members got involved in workshops and project activities, developing their knowledge, awareness and sense of ownership of the

initiative (FISH.W.1, FISH.W.2). These are elements that in turn can intensify interest and participation in the management of the LMMA. In Kibuyuni, even though the community is characterised by the seaweed farming activity, which is also quite a peculiar and innovative project in Kenya, it is something external to the BMU work. However, this research was not able to verify if this element brings substantial differences in the participation level between the two LMMAs.

5.3. Stakeholder analysis

A stakeholder analysis of the actors involved in the management of Wasini and Kibuyuni LMMAs will now be presented. It is organised in three steps: identification, categorisation and relationships investigation.

5.3.1. Stakeholder identification

Eight groups of stakeholders were identified in this case study. The first is the BMU, an organisation that comprehends boat owners, crews, traders and input suppliers (mainly boat and gears builders and repairers), boat operators, teachers, *mama karanga*[8], etc. In Wasini, where the tourism activity is more developed than Kibuyuni, also some hoteliers and restaurant owners are members of the BMU. The second group to be considered is the one representing the government authority, including the State Department of Fisheries, the County Department of Fisheries, and the two governmental agencies KWS and KMFRI. Then, several Kenyan NGOs are or were involved in assisting the creation and implementation of the two LMMAs: EAWLS, COMRED, CORDIO, Pact Kenya and ANO. Additionally, a number of donors has been supporting Wasini and Kibuyuni communities first in implementing the BMUs and then in financing their projects, such as the LMMAs. They are Seacology, the Darwin Initiative, the World Bank and the UNDP. The last two in particular are funding the coral restoration project in Wasini and the seaweed farming in Kibuyuni. Seaweed farmers from Kibuyuni constitute, together with the Wasini Women Group, another relevant stakeholder group to consider: the community-based organisations (CBOs). These organisations, besides characterising the identities of the two communities, are in close relationship with the LMMAs, as they also manage marine resources and their activities represent an example of alternative livelihood to fishing.

The remaining three groups of stakeholders include those actors who do not participate in the decision-making and management of Wasini and Kibuyuni LMMAs. These are:

- Touristic operators from outside the communities' area, who usually bring tourists to Wasini Island to eat and rest after visiting Kisite Marine Park;
- Migrant fishermen from other villages in Kenya or from Tanzania, coming to fish in Shimoni-Vanga;
- Wasini and Kibuyuni community members not registered in the BMU.

5.3.2. Stakeholder categorisation

Categorisation is done through the intersection of two dimensions: stakeholders' power and their interest in the case in point, as already explained in Chapter 3. For the two cases of Wasini and Kibuyuni LMMAs, power and interest of stakeholders are defined as follows. Power is the capacity a stakeholder has to affect the development and the outcomes of the decision-making processes related to the management of an LMMA. The concept also includes the power of a stakeholder to influence the implementation of measures and plans to be adopted, as results of the decision-making process, for the running of the LMMA. Next, the interest dimension expresses the concern a stakeholder carries for the LMMA, for the way it is managed, for the

[8] Female fish traders, known as *mama karanga*, are responsible for the processing and sale of small fish in the local markets, while male traders buy and sell higher value fish (BMU.W.1, Mahajan & Daw 2016).

related activities and outcomes. Interest in LMMAs can arouse from different motivations and needs, which can eventually combine, for example the willingness to preserve the marine environment and the urgency of improving coastal communities' livelihoods.

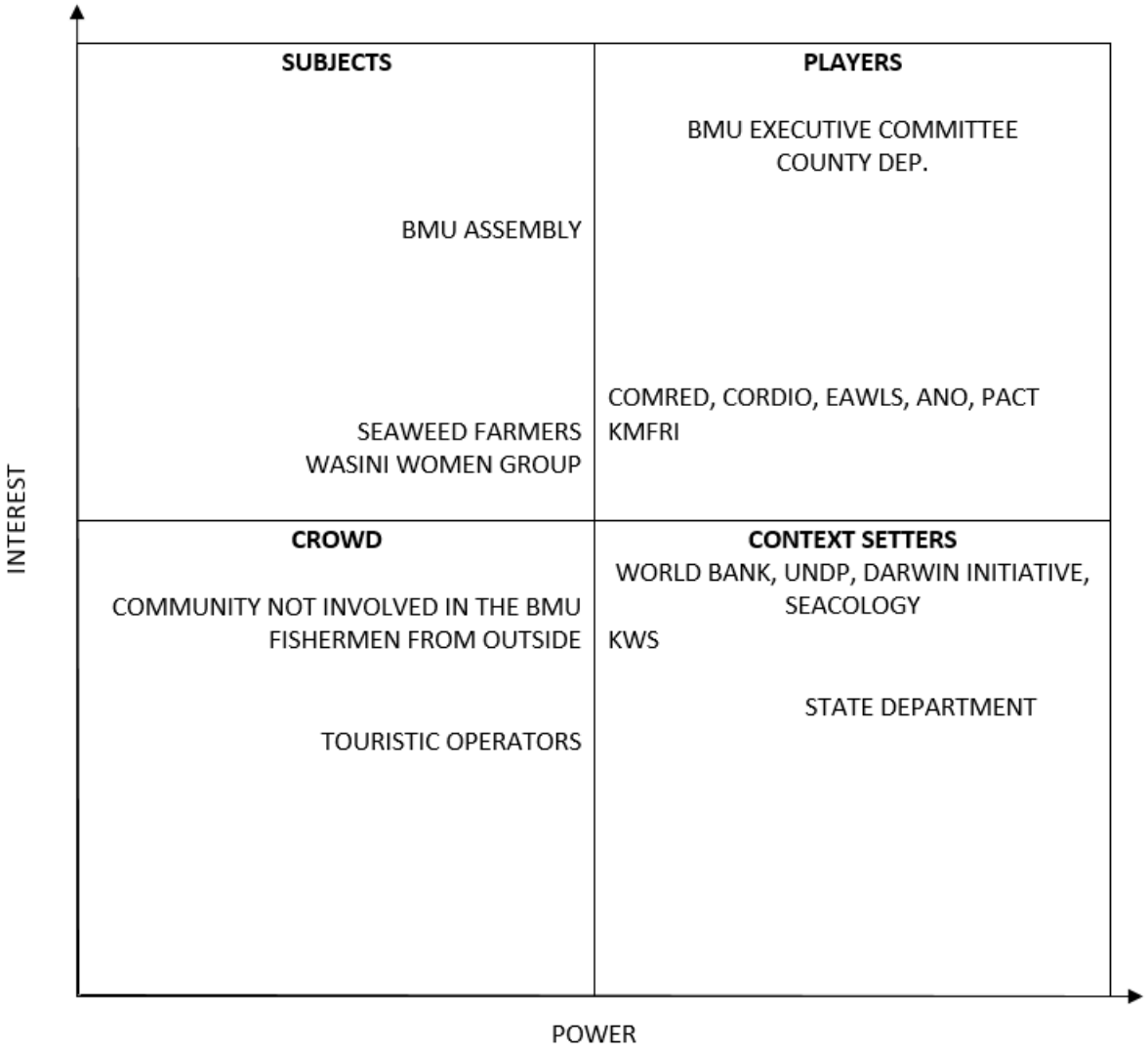

Figure 9: Power versus interest grid for Wasini and Kibuyuni LMMAs stakeholders

- *Players*

  The key players involved in the management of LMMAs are the County Department and the BMUs. Of the latter, the Executive Committee especially organises the management activities, takes care of the operational and financial aspects and is responsible for implementing and enforcing the co-management area. The County supervises and advises the BMU in its conduct and decisions, supports it with technical assistance and is involved in the preparation of the by-laws and co-management plan together with the Executive Committee.

  Local NGOs and KMFRI are also included among the players, but in a position close to the context setters' area. This because they both have been very important players in the establishment and implementation of the LMMAs and are still supporting and advising the BMUs with their knowledge, but do not have any decisional power concerning the management of these areas. Moreover, these

actors' interest, even though quite high, is slightly less strong if compared to the one of the BMUs or of the County, whose first task is to manage marine resources in that area with which they deal daily.

- *Context Setters*

  One of the main context setters is the State Fisheries Department, who sets fisheries policies and regulations but has delegated its power on marine resources management to Counties and BMUs. The Department does not deal directly with LMMAs, but is the one designing the boundaries and the structure of Counties and BMUs jurisdictions. The Department encourages and supports local conservation initiatives, especially through capacity building and training programmes. However, there is no financial aid to BMUs from the Department and this can hamper the development of current or future LMMAs projects, as BMUs' finances may not be enough to enforce their bylaws.

  Donors are in a position between context setters and players. They are clearly important actors in the management of LMMAs, as it has been especially through their funding that BMUs have developed themselves and their co-management areas. On the other hand, funds are available only for a limited period of time (until the donor project is completed) and the BMU needs then to look for other funding on its own.

  KWS, as the governmental agency involved in the management of Kisite marine park, is also interested in collaborating with local communities for a better implementation of the protected area. It does not have any decision-making power concerning LMMAs management, but is an important BMUs ally, as it helps with LMMAs enforcement and with raising awareness and education among the communities. It also performs an advisory and dispute solving role.

- *Subjects*

  The BMU Assembly occupies a position between subjects and players categories. The group has final decision-making power on the Executive Committee proposals, can submit issues to be discussed and is the authority who elects the members of the committee. On the other hand, Assembly meetings are not always attended by all the members, but decisions are taken anyway. Moreover, it can happen that some individuals do not agree with the resolutions approved by the majority of the Assembly. This means that some members may be subject to arrangements they did not vote for or they do not know about. Consequently, they may feel left out the decisional arena and their commitment to conservation could be affected, hampering the functioning of the co-managed area. Some members from the Seaweed Farmers in Kibuyuni and the Wasini Women Group are also members of the respective BMUs (some also in the Executive Committee) and are thus involved in the management of LMMAs. However, their interest is more focused on their activities. The two groups are moreover under the authority of the BMU and have to respect the BMU bylaws (for example, seaweed farmers have to pay 1 Ksh to the BMU per kilo of seaweed produced). These local organizations represent important groups in Wasini and Kibuyuni communities and their involvement in the BMU is relevant for a broad community participation: indeed, these organizations' member are mostly women, which tend to be excluded from natural resources management.

- *Crowd*

  The crowd consists of those actors who have low interest and low power in managing LMMAs and includes especially groups from outside the communities. They are fishermen coming from the nearby Tanzania or other villages in Kenya, who may not know or respect legal fishing methods and closed areas, and touristic operators, from Shimoni area or from localities more in the north, bringing

clients mainly first to the marine park and later to Wasini island restaurants. It is important to raise awareness about LMMAs as well as their enforcement when considering these actors. Informing and controlling foreign fishermen by authorities like the County Government, the police or the BMUs patrol groups may avoid their illegal fishing activities in the co-managed areas. On the other hand, improving contacts and arrangements with tour operators would promote Wasini and Kibuyuni LMMAs also outside the Shimoni-Vanga area and foster their tourism.

Another group to be considered are community members who are not part of the BMU. Assigning them to only one of this four categories would be very simplistic and not representative of the heterogeneity characterising them. What the members of this group have in common is the lack of decisional power over decisions concerning fisheries matters, which are prerogative of BMU affiliates. Even though in some cases Assembly meetings are open to non-members as well, they are not allowed the right to vote over LMMAs management decisions. However, they benefit from the BMU funds when these are used for community activities. Taking into account the interest these individuals may have regarding marine resources management, the fact they are not part of the BMU does not mean they all have no stake. BMU membership is given to stakeholders in the fisheries sector, as reported in the Regulations of 2007, meaning fishing vessels owners, crew members, fish traders and input suppliers. Other individuals whose livelihood still depend on fisheries, even if indirectly, can be represented by a few members in the Executive Committee. These include especially villagers dealing with tourism activities, whose interest in the LMMA could be very high. It is important for the BMU to engage with these actors, as their collaboration and compliance with the BMU bylaws, concerning in particular touristic fees for snorkelling and diving in the protected areas, would be beneficial to a successful management of the LMMA.

5.3.3. Stakeholder relationships

In the matrix under, stakeholders' relationships are categorised by frequency and intensity of contact and by the type of connection with one another.

It is a complementary relationship when two actors work very closely together and are necessary to each other to implement their projects. One of the best examples is of course the relation between the BMU and the County Government, but also context setters and subjects can be complementary for each other, like donors and community-based organisations, or donors and NGOs. Then, cooperation defines a relationship in which the two stakeholders can occasionally collaborate, but are not essential to each other. The KMFRI for example can give scientific support to NGOs if asked, or non-BMU members can sometimes be involved in BMU activities or donors' projects. Finally, in a few cases involving foreign fishermen, there are conflictual relationships, as these fishermen come to Shimoni-Vanga area, do not pay catch levies and fish illegally.

The relations illustrated by the matrix, besides being characterised by different levels and type of linkage, are also defined by various kinds of relevance and roles, when referring to LMMAs management. Clearly, one of the most important relationship for the functioning of the LMMAs is the one between BMUs and County Department, whose collaboration is the foundation of the co-management structure for marine resources, as provided for by the law. Being the key stakeholders when dealing with LMMAs management, these two actors undertake relations with all the other stakeholders involved in the management of local marine resources. Indeed, BMUs' activity is substantially supported by the technical and scientific assistance provided by KMFRI and the NGOs, which regularly collaborate with them, and by the funding coming from donors. Without the participation and backing of these stakeholders, BMUs and County Government would have hardly established and developed LMMAs. In turn, the KMFRI, the NGOs and the donors also have quite a complementary relationship between them as well.

Stakeholders	BMU	State Dep.	County Dep.	KWS	KMFRI	NGOs	Donors	Seaweed Farmers	WWG	Touristic Operators	Foreign fishermen	Non-BMU members
BMU		3B	1A	2A	2A	2A	3A	1A	1A	3B	3C	1B
State Dep.	3B		1A	1A	1A	2B	2B	3B	3B	3B	\	3B
County Dep.	1A	1A		1B	1A	2B	2B	2B	2B	3B	3C	2B
KWS	2A	1A	1B		1B	2B	\	\	2B	1A	3C	3B
KMFRI	2A	1A	1A	1B		1B	1B	1A	2A	\	\	\
NGOs	2A	2B	2B	2B	1B		1A	1A	1A	\	\	3B
Donors	3A	2B	2B	\	1B	1A		2A	2A	\	\	3B
Seaweed Farmers	1A	3B	2B	\	1A	1A	2A		\	\	\	1A
WWG	1A	3B	2B	2B	2A	1A	2A	\		2A	\	1A
Touristic Operators	3B	3B	3B	1A	\	\	\	\	2A		\	2A
Foreign fishermen	3C	\	3C	3C	\	\	\	\	\	\		\
Non-BMU members	1B	3B	2B	3B	\	3B	3B	1A	1A	2A	\	

Table 3: Wasini and Kibuyuni LMMAs stakeholder linkage matrix. Based on frequency and intensity of contact. 1: strong linkage, 2: moderate linkage, 3: weak linkage, \: no linkage. Based on the type of relationship. A: complementary; B: cooperation; C: conflict.

One of the clearest examples is their collaboration for the establishment of LMMAs in Shimoni-Vanga area. In general, these stakeholders work together, exchanging their knowledge and joining their resources to develop and support community projects, like in the case of Wasini and Kibuyuni LMMAs, seaweed farmers and WWG.

BMU members also have close relationships with other local organisations, namely the seaweed farmers in Kibuyuni and the women group in Wasini. These groups' activities are also dealing with the use of coastal resources and, in both cases, represent a significative part of the community, therefore collaborating with them is a very crucial point for the BMUs of the respective villages. Community members who are not part

of the BMU are also actors to be considered, as they are the ones benefitting or being affected indirectly by the decisions taken by the BMU. If these people feel neglected or do not approve the conduct of the BMU, the relationship between them and the BMU could eventually develop into a conflictual one, jeopardising the implementation of the LMMA.

The State Department of Fisheries is rarely directly involved in the management of the LMMAs and in the matters of the BMUs. Its contacts are anyway quite strong with the County Department, which is indeed the state delegate on the territory, and with the KWS and the KMFRI, as state agencies. Therefore, LMMAs' activities orientation can also be influenced by the decisions of the State Department.

Relationships between Wasini and Kibuyuni BMUs, as well as for the CBOs, and the touristic operators, especially with the ones coming from outside the Shimoni-Vanga area, are still quite weak. If nurtured, these relations could improve tourism in the LMMAs and thus help build financial sustainability for their management. Tourist operators have a better connection with the KWS, the authority managing national parks in Kenya. The KWS is also one of the main partners of Wasini and Kibuyuni BMUs and could thus play an important role in promoting the relations between them.

For what concerns migrant fishermen, their relationship with other actors such as the BMUs, the County Department and the KWS are conflictual and should be improved for a better enforcement of the LMMAs. Representatives of foreign fishermen regularly coming to Shimoni-Vanga could, for example, be invited to BMU meetings, get in touch with local NGOs and become more aware about the co-management areas and their purposes. On the other hand, it is also crucial that they recognize and respect the BMU authority.

6. EVALUATION

In this chapter, the research results will be compared with the chosen conceptual framework. First of all, Wasini and Kibuyuni LMMAs cases will be analysed and evaluated through the principles of EPG. Then, the evaluation findings will be compared with Choguill's ladder of community participation, allocating the two cases on the corresponding rung, depending on their characteristics. This will indicate the level of participation defining the studied LMMAs, explaining the roles and the opportunities for community members in the decision-making process as well as the main threats to LMMAs management. Finally, a paragraph will be dedicated to what could be learned from EPG for managing LMMAs.

6.1. Wasini and Kibuyuni LMMAs as examples of Empowered Participatory Governance?

As explained in Chapter Two, EPG theory is characterised by three guiding principles, three design properties and ideally leads to the achievement of three institutional objectives, which will all be discussed in comparison with the features of the considered LMMAs.

6.1.1. Guiding Principles

Practical orientation of the developed governance structure, which must focus on tangible and specific problems (Fung & Wright 2003). LMMAs were established with the precise aim of manage fisheries and preserve the marine environment, while improving local communities' livelihoods. The Kenyan Government enacted BMUs and County Government to enhance the quality of marine resources administration. When stakeholders' meetings occur, deliberation considers concrete matters, like the fishing gears to be used or to be prohibited, the BMU budget allocation or the organisation of patrol groups. Even though values and principles of marine conservation and fisheries sustainability can sometimes also be topics of discussion, the final objective is to find real solutions for a wise management of a resource which is vital to coastal communities' subsistence.

Bottom-up participation, or rather the involvement of individuals most directly affected by targeted problems, typically ordinary citizens and officials in the field, in the formulation of solutions to these issues (Fung and Wright 2003). This is indeed the case of BMUs, representing the local community, and the County officers, who apply their knowledge, commitment and resources to this end. Technical experts still play a key role when facilitating popular deliberative decision-making and supporting it with their expertise. They can be members of NGOs involved in marine conservation and community development, for example EAWLS or COMRED, and employees of scientific institutions, like KMFRI. However, they do not enjoy exclusive power in decision-making, but the final say is up to BMU members, with the support and the approval of County Fisheries Department.

Deliberative solution generation. In deliberative decision-making, participants listen to each other's opinions and generate group choices through thoughtful considerations and argumentations. Deliberation kind of reasoning involves continuous joint planning, problem-solving, and strategizing to develop strategies and resolutions (Fung & Wright 2003). In LMMAs case, stakeholder meetings are characterised by the presence of facilitators (either the BMU chairman, NGOs members or state officers) who coordinate and organise the discussion. First, participants are given one by one the opportunity to express their position, then all the group deliberates considering the presented ideas. However, these discussions are almost never very smooth or easy, as many diverse interests and groups are involved. Clearly, initially fishermen were not willing to establish a closed area or stricter regulations on fishing methods. At the same time, conflicts can arise concerning the use of BMU finances. Nevertheless, even though almost every deliberation process generates winners and losers (there are still fishermen in Wasini and Kibuyuni opposing to the closed areas),

participants usually accept the resulting solution when they see their potential for the whole community benefit. In LMMAs case, this is especially the income generated by tourism and donors financing.

6.1.2. Design Properties

EPG's design properties include *devolution*, *centralized supervision and coordination*, and *state-centered (not voluntaristic)* institutions. These properties consider the relationship between central agencies and local groups and power distribution between them. EPG requires decision and implementation power to be devolved from central State to local action-oriented units. The latter however are not completely autonomous, but supervised by appropriate state bodies, responsible for resource allocation, problem solving and innovation. Moreover, new local administrative agencies need to be created, and therefore their power legitimised, by the central authorities. In EPG, decentralisation is rather coordinated than strict (Fung & Wright 2003).

LMMAs in Kenya share the same design properties. These co-management areas are administrated by the BMUs, which are indeed local organisations in representation of local communities whose decisional and implementation power is legitimised through the Fisheries Act, the piece of legislation through which the central government established them and devolved its authority for managing coastal fisheries. Additionally, governmental devolution also instituted County Governments, with the purpose of coordinating and assisting local communities in the implementation of national laws and in the development of their administrative capacity. The County Fisheries Department role fits with the "*superordinate body*" described by EPG, being the main partner with BMUs in the management of local marine resources and providing them with administrative support, education and awareness campaigns, resources (buoys, gears, boats) and assistance with enforcement and conflict-resolution issues.

Results from the interviews evidenced the relevance of County Government especially in the establishment and initial empowerment of BMUs. However, it is opinion of quite some stakeholders (especially NGOs and BMUs members) that enforcement support from fisheries officials is still sporadic and, in terms of financial assistance, funds to cover enforcement costs are not available. This consequently reflects on BMUs' capacities of properly implement and manage their co-managed areas. Devolution may have transferred enforcement costs from government to communities that cannot afford it. Lack of enforcement capacity can also combine with the lack of recognition and respect of BMU's authority and bylaws from neighbouring communities and migrant fishermen, resulting in poaching episodes, especially in the protected areas. To cope with this challenge, some authors (Kawaka et al. 2017, Odote et al. 2015, Maina et al. 2011) suggest the establishment and legal formalisation of national guidelines for LMMAs in Kenya, regarding their establishment and operationalisation. This would allow for fees and levies standardisation and harmonisation, together with legal, stronger and broader acceptance and recognition of LMMAs. A governmental intervention should also consider the fees (for the landing or the trading of fish, for the anchoring of a vessels in the BMU waters, etc.) a BMU has the authority to demand. As showed by a comparison between Wasini and Kibuyuni bylaws, these fees can vary a lot from BMU to BMU, even if the two villages and fishing grounds are very close to one another. Making the amounts of these payments uniform among the BMUs would facilitate their collection and would regulate BMUs revenues.

6.1.3. Institutional Objectives

These are the three outcomes that should be reached when applying EPG principles and properties. For what concerns Wasini and Kibuyuni LMMAs they were established less than a decade ago and are not yet completely implemented (especially when considering their enforcement and monitoring). Moreover, there is lack of data series about fish abundance or coral cover in the co-managed areas as well as surveys on local

community livelihoods status. The information collected through the performed interviews provides opinions and perceptions from diverse stakeholders, but, among members of local communities, it was only possible to question BMU affiliates, whose opinion may potentially describe only one side of the story. Therefore, more data is needed to better understand whether and how *effective problem-solving*, *equity* and *broad and deep participation* are actually characterising these LMMAs governance structure.

Effective problem-solving consists in reaching public aims more effectively than alternative institutional arrangements. As already explained in the previous Chapters of this study, there are several reasons for which this outcome is expected from participatory governance arrangements, including LMMAs. These comprise citizens know-hows and commitment, perceived legitimacy of decisions taken, and easier and quicker reactions to erroneous strategies (Fung & Wright 2003). In general, results from the interviews highlight a shared positive opinion concerning LMMAs. Some fishermen (FISH.W.1, FISH.W.2, FISH.K.1) declared a perception of improvement of the ecological conditions of the reef environment in their fishing grounds. Mostly, locals see LMMAs as a way to improve their life quality through tourism and donors financing, while NGOs and governmental agencies are in favour of conservation efforts coming from the communities. However, indeed because of the short time frame since their establishment and because of the lack of data, effectiveness of problem-solving related to LMMAs is hard to analyse in depth. An insight can be provided by interviewees' opinions, who especially point out two main weaknesses: enforcement and financing. Wasini and Kibuyuni are both characterised by the lack of bylaws enforcement, in particular the prohibition of illegal gears. Communities lack the means to patrol effectively and do not have enough funds to do it. Even though the bylaws state the presence of a patrol sub-committee, there are no routine patrols as no boat is available and informal patrols are carried out by BMU members while fishing or working at the seaweed farms. Enforcement issues are in fact related to BMU funding problems and lack of resources. Even though tourism has been developing (particularly in Wasini) and catches landing should be subject to levies (according to MCCN report of 2013 lack of enforcement also involves this aspect), the main source of financing comes from donors. Consequently, funds availability often varies depending on donors' involvement. This financial instability has a substantial influence on BMU operations and therefore on LMMA management.

Lack of awareness emerged as another challenge for LMMAs according to a few interviewees. The main concern involves the presence of community members who still do not endorse the closed areas or the gears restriction. Even though these do not represent the majority of the community, they can still represent an issue, as they may engage in illegal fishing.

Enforcement and financing would most likely not be such considerable issues in the case of a national marine park, funded and supported by the government. However, co-managed areas like the ones in Wasini and Kibuyuni are achieving quite a significant success as a fisheries management tool among both local communities, NGOs and the Kenyan Government. This is proved by the recent development of a joint co-management plan, promoted by the NGO COMRED, involving all the seven BMUs in Shimoni-Vanga area. The aim is to harmonise and improve marine resources management in the area. To this end, in January 2017 members from the seven BMUs gathered in a meeting in Shimoni, together with experts from COMRED and KMFRI, as well as with Fisheries Department officials, to discuss and decide on the bylaws to be implemented in the joint co-management area. As final expected outcome, the whole marine and coastal area from Shimoni to Vanga will be manged consistently and include both closed areas and fishing areas (with specific fishing measures and regulations). The involvement and collaboration of the seven BMUs in the area could potentially improve the management of marine resources, especially in terms of regulations enforcement and awareness. The project is still at an initial phase, many significant details still need to be discussed (spatial planning, finances management, etc.) and its final implementation is most likely to take a long time, as the considered communities are characterised by different levels of awareness and commitment towards marine

conservation and sustainable fisheries management. Nevertheless, the idea of locally managed marine resources seems now well established among those communities, probably also thanks to the experiences of Wasini and Kibuyuni, and perceived as a potentially effective and successful solution for local development. Wasini BMU in particular, with the coral restoration project, has been an example for many other communities, which are now visiting the LMMA and getting trained by the BMU together with the KMFRI, of how conservation efforts can produce tangible benefits. This especially in relation to the possibility to attract donors, who can provide immediate reimbursement after the fisheries closure and alternative livelihoods training (Mahajan & Daw 2016). However, careful attention must be payed to the expectations of external financial support (this last aspect will be further discussed in the next paragraph).

Equity and *broad and deep participation* are two strongly related conditions. Fair and equitable outcomes are generated through the inclusion of usually marginalised groups and with the delivery of effective public action to those who do not generally experience it. This implies the establishment of new participation channels, where participants can develop and exercise their political power and capacities (Fung & Wright 2003). In the case of LMMAs, decision-making happens in the frame of BMUs, which indeed are the entities representing local communities, involving especially fishermen, traders and boat builders. The establishment of BMUs definitely provided an alternative space of participation and discussion, where participants can engage without almost no expertise-barriers (except for the fact that they need to be involved in fisheries activities) hampering the expression of their ideas. Through the BMUs, local stakeholders who were before excluded from decisional arenas are actively involved and deliberation outcomes are consequently giving importance to their needs and opinions, selecting strategies that upon discussion win the deepest and widest approval. Still, the BMU Assembly does not include the whole community and its majority consists of those individuals whose occupation is strictly related to the use of marine resources. The remaining community members are represented by a few individuals in the Executive Committee. This is for example the case of women. In both Wasini and Kibuyuni, women are not excluded from marine resources management activities, on the contrary they are important groups in the community as seaweed farmers, fish traders and mangrove conservers. However, even though collaborating with the BMU, these local organisations only have a few spokespersons at the BMU. Moreover, BMU assemblies are rarely attended by the entirety of the members, therefore decisions are most of the time still taken by a restricted group of people. In the case of Wasini, it was opinion of one interviewee that BMU decisions favour certain families or groups. On one hand, no similar statement was made by the other interviewees. However, a few respondents also affirmed that equity of decision-making really depends on the BMU interest and effort in involving the community and taking care of common good. More research is needed to clarify these aspects.

6.2. Lessons learnt from EPG theory

EPG is a model of radical democracy which aims at using deliberative action to solve practical public problems and offers an attractive guide for feasible institutional innovation (Fung & Wright 2003). However, critical dimensions and concerns may emerge when theory applies to concrete cases, like the one of LMMAs. Seeing how these flaws may relate to the research case study could be helpful to prevent them and would suggest further areas of research.

The first potential weakness related to LMMAs case concerns deliberation and the degree to which decision-making processes are genuinely deliberative. Participants usually face each other from unequal positions of power, deriving from material differences and class backgrounds characterising them, as well as from knowledge and personal deliberative capabilities, linked to educational and occupational levels (Fung & Wright 2003). These differences disclose not only between government officials or NGO members and

community members, but among the latter too. For example, part of BMU members may not be literate, or some may be wealthier than others. The BMU Assembly may be characterised by the presence of dominant groups, whose members are those favoured in terms of wealth and education and are also those participating more frequently and efficiently to the meetings to defend their interests. At the same time, Executive Committee members may favour specific groups and interests inside the Assembly, because of friendship or family relationships, as well as for gaining support for elections. It is of great importance that the Executive Committee engages in facilitative leadership, empowering and representing also weaker participants, with skills that promote broad and active participation, facilitate productive group dynamics and ensure broad-based influence and control (Ansell & Gash 2008). Power imbalances among stakeholders represent a considerable barrier to meaningful engagement and could provoke distrust or weak commitment among participants: it is therefore necessary to consider how inequalities in age, gender and background can be overcome to enable participants to be involved on a level playing field (Ansell & Gash 2008, Reed 2008). In this context, the presence of NGOs and governmental authorities (who indeed have the legal mandate to oversee BMUs) is fundamental for both educating participants, especially when decisions are highly technical, so that participants are given the knowledge and confidence to meaningfully engage in the process, and supervising the decision-making process (Reed 2008). It is also critical that education and awareness activities reach the majority of the community (Kawaka et al. 2017).

Secondly, EPG demands high levels of participation and commitment from ordinary citizens who, especially when politically disengaged and ignorant, are generally too consumed with everyday life issues to spend their time and energy for deliberative purposes and decision-making events (Fung & Wright). "*Consultation fatigue may develop as stakeholders are increasingly asked to take part in participatory processes that are not always well run, and as they perceive that their involvement gains them little reward or capacity to influence decisions that affect them*" (Reed 2008). This could consequently bring to cynicism and declining levels of engagement, putting participation credibility at risk. Inhabitants of Wasini and Kibuyuni are keener to spend their time fishing or farming seaweed than engaging in meetings, especially if they feel left out from the discussion, as their first need and priority is to make a living for them and their families. For this reason, participants are usually paid by the BMU Executive Committee to attend the meetings or workshops, using BMU finances. In general, stakeholder expectations about whether the participatory processes will generate valid outcomes, particularly against the balance of time and energy required, can influence the willingness to participate. "*Incentives increase as stakeholders see a direct relationship between their participation and concrete, tangible, effectual policy outcomes. But they decline if stakeholders perceive their own input to be merely advisory or largely ceremonial*" (Ansell & Gash 2008). Moreover, EPG deliberative channels provide for citizens to generate public goods which are broadly shared, so that many will be tempted to free-ride on others' efforts (Fung & Wright 2003). In the case of LMMAs, some fishermen could still fish illegally affecting the environment, while benefitting from the sustainable efforts of other fishermen. If enforcement is not effectively implemented, this unfair behaviour could potentially cause and spread conflicts among stakeholders.

Consequently, another concern focuses on EPG arrangements' stability over time. They may enjoy initial successes, in a burst of collective enthusiasm and goodwill, but then may be difficult to develop over the long term into stable forms of sustained participation. This because of various reasons, for example bureaucratic complications, or disappointed expectations that may bring disillusionment and exhaustion among the participants (Fung & Wright 2003). Wasini and Kibuyni LMMAs and BMUs were officially established roughly a decade ago and the related decisional processes seem to be quite embedded in the community structure. Critical conditions to their Conceptualisation and Establishment phases were the presence of committed

community leaders, who acted as the link between the community and the government and the NGOs, as well as the capacity building efforts from the latter. The BMUs have especially gained quite a lot of popularity among the community members, especially because of the general perception that community living conditions and welfare improved since their establishment, thanks to the income generated by tourism and the initial availability of external donors. However, as already mentioned above in this Chapter, both LMMAs are facing substantial challenges like lack of enforcement and donor dependence, which make the whole arrangement still fragile and not completely stable. According to Kawaka et al. (2017), from the beginning communities lacked full understanding of the cost of establishing and managing LMMAs, relying heavily on donors, NGOs and the government for financial and technical resources. Therefore, when the donor funded project ended, the LMMAs struggled due to lack of finances, as they did not have access to the budgets used by donors and NGOs on establishing their LMMA and were therefore unaware of the costs. On the other hand, also nonmonetary resources, such as time, labour, land, donated materials and technical expertise by national institutions and NGOs are important contributions to LMMA activities, but their relevance is often underestimated. It is then fundamental that communities acknowledge the costs of establishing an LMMA, allowing them to take into account available finances and efforts required to obtain additional funds, as well as to plan a marketing strategy and a benefit sharing mechanism, to enable LMMA to function independently of external donors (Kawaka et al. 2017). However, for what concerns Wasini and Kibuyuni, effective management will require especially substantial investments by governments, donors, and civil society in key areas such as enforcement capacity and alternative livelihoods improvement (including marketing and structures for tourism, as well as marketing for seaweed production), to achieve financial sustainability of LMMAs on the long term. Both LMMAs, beside adopting and enforcing a patrol plan, should also endorse a monitoring plan and perform ecologic and socio-economic assessment activities. The resulting information is fundamental for an ongoing adaptive management of these LMMAs, involving continuous review of their functioning and implementation of up to date strategies for their improvement, focusing on the long-term sustainability (Kawaka et al. 2017).

6.3. Wasini and Kibuyuni LMMAs on Choguill's Ladder of Community Participation

In Chapter 2, where the conceptual framework was presented, it was discussed how to place EPG on Choguill's Ladder, in order to consequently determine the position of Wasini and Kibuyuni LMMA on the ladder's steps and categorise their participation level.

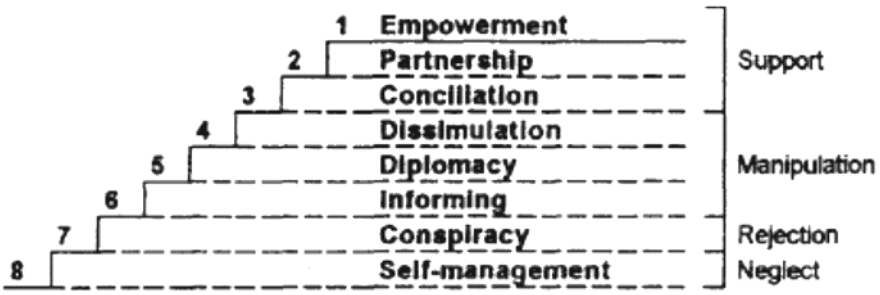

Figure 10: Ladder of community participation for underdeveloped countries (Choguill 1996)

Wasini LMMA (like others along the Kenyan coast) started as an example of *self-management*: the idea of closing part of the community fishing ground was introduced and developed by a small group of fishermen, supported and educated by an NGO, but without any involvement or interest from the government. With the establishment of BMUs and of the County Governments, LMMAs (or co-management areas as referred

to in the legislation) became object of joint administration and management of these two new local authorities. Notably, what stated in the concerning legislation describes the BMU as the agency representing the community and holding planning and decisional power with reference to marine and coastal resources, with the County involved in an advisory and facilitating function. Interviews respondents pointed out that indeed when LMMAs decision-making organs (BMU Executive Committee and Assembly) meet and discuss on projects development, external agencies or experts can participate and give suggestions and recommendations. However, final decisions and outcomes are a responsibility of BMU members, as they are the only ones entitled with the voting right. It cannot therefore be considered as a *partnership* arrangement, in which resolutions' accountability is shared by community members and external planners, since the Government only sets the limits determining legitimacy of actions and decisions and monitors that BMUs do not violate them. The most suitable rung for placing Wasini and Kibuyuni LMMAs (actually this is applicable to all LMMAs administrated by a BMU) is thus the *empowerment* one: as written by Choguill (1996), "*community members are expected to initiate their own improvements, possibly with the assistance of outside organisations, such as NGOs or other allies, demonstrating actual control of the situation and influence the processes and outcomes of development. These possibilities of actually controlling the situation and making allies, with governmental support, constitute the main characteristics of empowerment*". This statement describes exactly what is ideally expected from the decentralised governance arrangement concerning marine resources management in Kenya. The *empowerment* step is also the one that can be better associated to EPG theory characteristics. A case or arrangement analysed through EPG principles and complying with them will consequently also coincide with *empowerment* rung's aspects. With respect to the previous paragraph, where indeed Wasini and Kibuyuni were evaluated through EPG, it is clear that both Wasini and Kibuyuni LMMAs are facing some challenges and that the respective BMUs still do not have the necessary resources to manage properly their co-management areas. Communities are very much depending on the assistance from external donors to be able to finance and successfully develop their projects. For example, BMU offices are still very simple structures with no electricity, there is no designated boat for patrol and tourism marketing is still very low if not absent. Sources of funds like tourism and levies and fines collection at the moment are not enough to sustain the LMMAs on their own. The lack of resources then inevitably reflects on LMMAs management, especially on their enforcement. Therefore, even if now the main actor involved in decision making, the community in both Wasini and Kibuyuni cases is still not able to control and influence the practical development and the success of the decision process outcomes on its own.

7. CONCLUSION

The aim of this thesis was to have a better understanding of the forms of community participation characterising LMMAs in Kenya, using a case study approach that focus on two implemented co-managed areas in Wasini and Kibuyuni. More specifically, the research intended to provide an insight on the stakeholders involved and on the decision-making process, to explain how power devolution and participatory governance have been realised for the management of marine resources. Moreover, the study included a reflection on the conditions and circumstances empowering and restraining communities in achieving LMMAs functioning and sustainability over time.

The research aim resulted in the formulation of one central research question and three sub questions which will be answered in this Chapter. The central research question that was addressed through this case study is:

What forms of community participation have been developed and implemented in Wasini and Kibuyuni LMMAs and in what way are they successful?

This question will be answered by means of the following sub questions:

- *What is community participation and how can it be conceptualised?*
- *Who are the stakeholders involved in the management of Wasini and Kibuyuni LMMAs?*
- *Which are the enabling and constraining conditions for a successful management of the considered LMMAs?*

What is community participation and how can it be conceptualised?

For the purposes of this research, it was meaningful to define and conceptualise community participation, as one of the central notions through which the study develops. Community participation refers to an educational and empowering process in which people, in partnership with those able to support them, identify problems and needs and increasingly assume responsibility themselves to plan, manage, control and assess the needed collective actions (Tosun 2000). In this sense, community participation is associated to a shift of power, from those actors who have had major decision-making roles to groups who were traditionally excluded from the political process. "*Intended beneficiaries are encouraged to take matters into their own hands, to participate in their own development through mobilising their own resources, defining their own needs, and making their own decisions about how to meet them*" (Stone 1989, p. 207). This is especially valid when considering communities in developing countries, where community participation is seen as a means to obtain the basic needs which would not otherwise be available to citizens (Choguill 1996). Community participation can as well be a powerful tool to educate the community in rights, laws and political good sense (Tosun 2000).

The concepts of power devolution and shared responsibility, when linked to common pool resources managements, lead to co-management arrangements, which consist of the collaboration between local resource users and usually governmental bodies (Pomeroy & Riviera-Guieb 2005, Berkes 2009). Since in developing countries the need to manage natural resources goes side by side with the need for the community to develop and empower, community participation is linked to the presence and the type of support from external sources, both governmental or non-governmental. Therefore, the extent to which communities are participating and thus getting empowered directly depends on the degree of power delegation and on the grade of assistance they receive. These aspects of community participation and co-management in developing countries are described by Choguill's ladder of community participation, whose

highest rung describes an empowered community, determining its own development outcomes and decisions with the support of government and NGOs, while the lowest step shows a complete disinterest from the government, with the community left on its own (Choguill 1996).

Overall, the two case studies examined in this research also demonstrate that community participation is an instrument of community empowerment, but this depending on the presence or the lack of specific conditions, which will be further explained by answering the third research sub question later in this Chapter.

Who are the stakeholders involved in the management of Wasini and Kibuyuni LMMAs?

The Fisheries Regulation of 2007 devolves management and decisional power from the central government to local units, the BMUs. These units are meant to represent those persons who depend, directly or indirectly, on fisheries activities for their livelihood, including therefore fishermen (both boat owners and crew members), fish traders (including those engaged in processing) and boat and gears builders and repairers. Their main mandate is to ensure the orderly, safe and effective use, management and operation of the fish landing station over which it has jurisdiction, provide the safety of those of its members engaged in fishing, and arrange training to its members in matter such as fishing techniques, the marketing and processing of fish and personal financial management. With the approval and the support of the County Fisheries Director, a co-management area (or LMMA) can be designated, where fisheries management activities are undertaken by the BMU jointly with the Director. The measures to be taken to ensure the sustainable utilisation of fisheries in that area need to be specified in a co-management plan, as well drafted by the BMU in collaboration with the Director, to be implemented through the BMU bylaws.

Wasini and Kibuyuni LMMAs were established in 2009, especially thanks to the effort of Kenyan NGOs like EAWLS and CORDIO and funding availability from the donors Darwin Initiative and Seacology. Their assistance, in partnership with the County Fisheries Department, was critical in providing education and training to communities concerning marine resources management, monitoring and surveillance, bylaws and co-management plan development and financial administration. Moreover, donors funding allowed also for the supply of important materials and infrastructures, like the BMU office in Wasini, fishing gears and buoys to demarcate the protected areas inside the LMMAs. This external assistance comprised the development and support of alternative livelihoods, like the seaweed farming in Kibuyuni, and of community-based conservation projects, such as the coral restoration project in Wasini, both funded by the World Bank and the UNDP. Other NGOs collaborated with the communities in the area, namely COMRED, currently facilitating the process of the establishment of a joint co-management area involving all the seven BMUs from Shimoni to Vanga, and ANO, supporting the coral restoration project.

Governmental agencies such as KMFRI and KWS are also relevant stakeholders to be considered and have been engaging with the BMUs and their co-management areas since their establishment. The first is a research institute mandated to undertake research in marine and freshwater fisheries and provides scientific and advisory information for sustainable management of marine resources. It has been giving technical support to communities, helping for example with the realisation of the Wasini coral project and with the implementation of seaweed farming in Kibuyuni. The second is responsible for managing protected areas, including marine parks and reserves, like the Kisite-Mungputi MPA offshore Wasini island. KWS has been an important partner with the BMUs especially with collaborations regarding the enforcement of protected areas and as facilitator in cases of dispute resolution.

The BMU is however the entity holding decisional power concerning LMMAs. To be more accurate, the BMU is composed of an Executive Committee and an Assembly, with different sub committees dedicated to

activities such as patrol, bookkeeping, ecotourism, hygiene and sanitation, etc. Wasini and Kibuyuni BMUs are constituted by 240 and 200 members respectively. Of these, 13 (Wasini) and 15 (Kibuyuni) form the Executive Committee, whose main role is to supervise the general management of the BMU's activities and the implementation of its by-laws. It has the duty to prepare proposals, concerning budget allocation, projects implementation or fees establishment, which are then discussed within the Assembly. The members of the latter can deliberate and have voting power over the presented proposals. Beside those individuals whose profession is directly or indirectly related to fisheries, other members of the community can be elected as representatives at the Executive Committee. These can include teachers, hoteliers and restaurant holders, and members from the two community-based organisations in Wasini and Kibuyuni, the Wasini Women Group and the seaweed farmers respectively.

Which are the enabling and constraining conditions for a successful management of the considered LMMAs?

To identify the factors associated to an effective management of the studies LMMAs, EPG theory was adopted, as a model relying on citizen meaningfully engaging with state actors in shaping decisions and achieving better solutions compared to the ones produced through a top-down approach (Fung & Wright). EPG concrete experiences comply with three guiding principles, three design properties and three institutional objectives. Analysing Wasini and Kibuyuni through EPG allowed for a reflection on what enables or constrains participation and empowerment of the two communities and consequently their capacity to implement and manage LMMAs.

Table 4 gives a summary of the results from the analysis performed through EPG theory. A positive evaluation was given for more than the half of the parameters. However, Wasini and Kibuyuni LMMAs lack full compliance with the model in respect to "*centralised supervision and coordination*". Moreover, "*effective problem-solving*" has also not completely been achieved. The reasons justifying this outcome are several and interrelated.

EPG model	Wasini and Kibuyuni LMMAs
Practical orientation	+
Bottom-up participation	+
Deliberative solution generation	+
Devolution	+
Centralised supervision and coordination	-
State-centred, not voluntaristic	+
Effective problem-solving	+/-
Equity	+?
Broad and deep participation	+?

Table 4: Wasini and Kibuyuni LMMAs versus EPG model

Even though Wasini initially engaged voluntarily in community-based marine resources management, through the establishment of a *tengefu*, it was through the creation of new administrative agencies, the BMUs, by the Kenyan government, that LMMAs developed and got implemented in Kibuyuni and Wasini. They are the result of a power devolution initiative, from central state authorities, which restructured marine

governance in Kenya. This reorganization towards participatory arrangements implies the involvement of local resource users in the decisional process and in the formulation of solutions in deliberative spaces, provided by the institution of BMUs. Deliberation and participation are applied to deal with tangible problems, such as the sustainable management of fisheries resources and the improvement of community livelihoods. Local units have the technical support of experts and are supervised by the County Fisheries Department, which operates as the link between communities and the central state.

Effective problem-solving is however hindered by two main challenges to LMMAs management, which especially regard weak enforcement and financing. Enforcement issues involve both the patrolling of the LMMA, which in both cases is performed on a voluntary basis without any organised plan, and the collection of catch levies, which is also linked to the lack of regular tracking and recording of catch data. According to many interviewees (BMU.W.1, BMU.W.2, NGO.2, NGO.3, NGO.4) and to the available literature (MCCN 2013, Mahajan & Daw 2016), this is principally caused by the lack of funds to cover enforcement costs and by the sporadic assistance of fisheries officials. Moreover, the absence of legally formalised guidelines for the establishment and implementation of LMMAs contributes to the extent of poaching episodes and illegal fishing, as neighbouring communities and migrant fishermen do not recognise and respect BMU's authority and bylaws. For this reason, it is recommended that the government engages in the drafting of national guidelines, which would allow for standardisation and harmonisation of bylaws. To this regard, the project of a joint co-management area, taking place with the involvement of all seven Shimoni-Vanga communities, represents an important initiative that could encourage similar solutions in other localities.

Wasini and Kibuyuni BMUs are both affected by financial issues, which indeed obstruct the implementation of their LMMAs especially in terms of enforcement, as explained before. Tourism activities have been developing in the two co-management areas, but the revenues are still not enough to completely sustain BMUs projects. BMUs finances are heavily depending on the presence of donors and investors, whose support has usually a limited time frame, depending on the sponsored project. Therefore, it is fundamental that a long-term funding mechanism for LMMAs is created and adopted, not only for Wasini and Kibuyuni, but for the future establishment of co-management areas. In particular, Wasini and Kibuyuni BMUs, with the assistance of the County Government and of KWS, should engage in agreements with touristic operators to improve tourism activities in their conservation areas. Moreover, the two villages, especially Kibuyuni, should improve their infrastructures, such as restaurants or diving centres, to host visitors, possibly with governmental support and resources.

Donor funding was critical for the inception and the advancement of important community-based activities, namely the coral restoration project in Wasini and the seaweed farming in Kibuyuni. They both constitute a source of alternative livelihoods to fishing. In Wasini, BMU members actively participate to coral replantation activities and get payed (thanks to the donor funds) for their work; moreover, the project is now being replied by other communities along the Kenyan coast and thus constitutes a source of pride for Wasini community. In Kibuyuni, the seaweed farming activity employs mainly women, empowering a group which is usually excluded from the management of natural resources. The group has found a few buyers, but at the moment does not manage to sell all the product.

In general, perceptions collected from interviews respondents highlighted a collective positive opinion about LMMAs and BMUs, underlining especially the fact that community livelihood standards have been improving since their establishment. This thanks to the efforts from the BMUs to allocate their budget, comprising of donor funding and tourism revenues, for infrastructural improvements in their villages or for children education.

For what concerns equity and participation, there is no doubt that, with the institution of BMUs, local stakeholders who were before excluded from decisional arenas can be actively involved in public action. However, the BMU Assembly does not include the whole community and its majority consists of those individuals whose occupation is strictly related to the use of marine resources. The remaining community members are represented by a few individuals in the Executive Committee. This is for example the case of women. Further research is needed to investigate if all participants actually have the same power and influence in decision-making, or if outcomes are influenced by some elites inside the group. Additionally, Assembly meetings are rarely attended by the totality of the members. This may be caused by lack of awareness and interest, cynicism and disappointed expectations with regard to the usefulness and efficiency of participation mechanisms. It is thus fundamental that education and awareness campaigns reach the majority of the community. Also, it is needed that deliberation produces concrete and fair results, improving community livelihoods, to demonstrate the worthiness of engaging in participatory arrangements.

Overall, the conditions that can enable (or, if they lack, constraint) the effective management of Wasini and Kibuyuni LMMAs include: education, awareness and training in community-based marine resources management; a supportive legal framework; the effective development of alternative livelihoods; long term sustainable funding mechanisms; and equity and fairness in decision-making.

To conclude this report, a brief reflection on the theories and research methods used in this study will now be provided.

The theoretical models adopted for analysing participation mechanisms in Wasini and Kibuyuni LMMAs were Choguill's ladder of community participation for underdeveloped countries (1996) and EPG theory from Fung & Wright (2003). These models were both very useful in determining the boundaries of the concept of participation to be applied in the research. As already explained in Chapter 2, both the theories conceptualise participation as means for people empowerment and stress the importance of the capacity of participatory arrangements to influence the existing governance structure, modifying its decisional processes and structure towards more deliberative and inclusive policy patterns. Moreover, the ladder consists in a model to categorise participation in developing countries, and is therefore considering specific parameters which make the theory well-fitting for the Kenyan context. On the other hand, LMMAs, for their main features and purposes, can be undoubtedly associated to EPG principles and have quite a great similarity with the EPG experiences described by Fung & Wright (2003). Thus, the two models both allowed for a comprehensive evaluation of the case study and, especially EPG, for a stimulating analysis and reflection on the collected data, which greatly helped in the understanding of the topic under research.

For what concerns data collection methodology, different techniques were made use of in this research, including literature review, semi-structured interviews and observations. The first was undoubtedly necessary especially in the first stages of the study development, to get a first general insight on LMMAs, prepare for the fieldwork and start identifying the stakeholders to interview. Moreover, a desk research was conducted to investigate and understand the legal framework concerning LMMAs in Kenya. Interviews and observations were both performed during the fieldwork (except for two interviews, which were done via Skype for lack of opportunity to meet with the interviewees). The data collected on field constituted a rich source of information, crucial to develop this research, especially because it was possible to gather knowledge from many different points of view, clarifying and enriching several points in the available literature. However, more detailed surveys concerning in particular members participation in the life of the two BMUs, as well as on communities' livelihoods and on the ecological conditions characterising the two LMMAs, are needed for a deeper understanding of the case. Unfortunately, these investigations need more time and resources than the ones available for the fieldwork that was performed to conduct this thesis

research. Additionally, the data collection process was characterised by several difficulties, mainly caused by a language barrier and by a certain level of some interviewees' initial mistrust in speaking with an unknown listener. As already explained in this report, it is also likely that in a few cases some bias occurred during the interviews. Repeating the interviews a second time or increasing the number of opinions collected could have helped solving this problem. Still, the adoption of semi-structured interviews facilitated the dialogues and encouraged the informants to express their views in their own terms. This kind of interviews also allowed the interviewer to follow topical trajectories in the conversation that strayed from the set topic list, when appropriate, favouring the discovery of further subjects of interest. In turn, observations, which were recorded through pictures and written descriptions, provided interesting insights further clarifying the information collected from the interviews. Overall, the data collection process in the fieldwork was characterised by a continuous development and improvement of the case understanding.

Once data were gathered, a significant part of results elaboration was represented by a stakeholder analysis. Stakeholder identification was actually started before the fieldwork, to select the interviewees. It constituted a very useful means to improve the results analysis by helping to clarify and define the several power dynamics characterising Wasini and Kibuyuni LMMAs management.

Lastly, choosing as a case study two LMMAs in the same geographic area and which developed from the same project, sharing the support of the same NGOs, donors and governmental agencies, favoured an interesting comparison between them. Their similarities and differences enlarge the current information on LMMAs in Kenya, providing further and diverse experience from which other communities could draw lessons and knowledge for more LMMAs to be established and implemented in the country.

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APPENDIX A: LIST OF INTERVIEWEES AND CODING

CODE	INTERVIEWEE
BMU.K.1	Chairman of Kibuyuni BMU
BMU.W.1	Chairman of Wasini BMU
BMU.W.2	Vice Secretary of Wasini BMU
NGO.1	EAWLS Marine Program Manager
NGO.2	COMRED Technical Advisor for Marine Projects
NGO.3	CORDIO Research Scientist
NGO.4	ANO Marine Coordinator
GOV.1	Fisheries Officer State Fisheries Department
GOV.2	Director County Fisheries Department
GOV.3	KWS Assistant Warden
FISH.W.1	Wasini Fisherman
FISH.W.2	Wasini Fishermen
FISH.K.1	Kibuyuni Fisherman
FISH.K.2	Kibuyuni Fishermen and Seaweed Farmers
CBO.W	Member from Wasini Women Group
BOAT.W	Boat Owner Wasini

APPENDIX B: TOPIC LIST

BMU members and locals (including fishermen, Wasini Women Group, seaweed farmers and boat operator):

- What is your job? Are you a member of the BMU? Which role?
- How many people are in the village? How many in the BMU?
- How do you manage marine resources?
- When and how was the LMMA established?
- How is it managed? How are decisions taken?
- Who is part of the BMU? If the BMU meets, who participates? How often do you meet? Are women included?
- How do you enforce the BMU bylaws?
- Are there activities allowed inside the LMMA? If yes, which ones?
- How are BMU activities financed?
- Do you have any partners? If yes, who are they? Which kind of partnership is it?
- What is your opinion about the LMMA? And about the BMU?

For especially the Wasini Women Group and the seaweed farmers:

- When and how the Wasini Women Group/seaweed farms was/were established?
- Who is involved in the Wasini Women Group/seaweed farming?
- How is your activity managed? Who takes decisions?
- How is your activity funded? Do you have any partners?
- Which is the relationship between your group and the BMU?

Government officials and NGOs' members

- What is the role of the department/institution/organisation you are working for?
- How are marine resources managed in Kenya? Which is the governance structure? Who is involved?
- Could you please explain the role of BMUs? Who are their members?
- How do BMUs manage marine resources? How are decisions taken?
- Is there any funding or support programme for BMUs? By whom and how?
- Do you think BMUs are representing the willing of the community in their decisions?
- Do you know anything about Wasini and Kibuyuni BMUs and corresponding LMMAs? If yes, please explain.
- Has your department/institution/organisation any relationship with the BMUs of Wasini and Kibuyuni? If yes, please explain its features.
- What is your opinion about the two BMUs? What do you think about their co-management areas?
- Are there any challenges coastal communities are facing in managing their marine resources? If yes, which ones and why?
- Which do you think are the characteristics of a successful management of marine resources?

APPENDIX C: WASINI BMU BYLAWS 2011