PV NATURE

PROJECT IDEA NOTE

Vanga Seagrass Project

Vanga Bay, Kenya

Version 3.0
30th January 2025

Developed by:

Association for Coastal Ecosystem Services (ACES)

https://aces-org.co.uk/

Vanga Seagrass Project Committee

https://www.aces-org.co.uk/our-projects/vanga-seagrass-project/

Other organisations include:

Vanga Blue Forest (VBF)

https://aces-org.co.uk/our-projects/vanga-blue-forest/

Kenya Marine and Fisheries Research Institute (KMFRI)

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Contents

Overview

Project Title:	Vanga Seagrass Project
Location:	Kenya, Kwale County, Lungalunga Sub–county, Vanga, Jimbo, Jasini and Kiwegu villages, Vanga Bay. The project region is located in the transboundary conservation area between Southern Kenya and Northern Tanzania.
Project description:	This project aims to protect the biodiversity within important seagrass meadows in Vanga Bay. Vanga Bay supports various species of culturally and commercially important fish and other marine animals (including IUCN Red List endangered species). Vanga Bay contains 9 seagrass species and supports around 14% of all seagrasses in Kenya (Harcourt et al., 2018). While research on African seagrass ecosystems remains limited, existing studies largely indicate a declining trend. However, countries like Kenya have conducted more extensive research on the subject and provide useful insights, which. show losses of 1.6% yr-1 and demonstrate that seine netting is a major threat (Harcourt et al., 2018; Mwikamba et al., 2024). This project will implement seasonal access to the project areas and gear restrictions removing damaging fishing practices and regulating fishing in the project areas, to allow protection and restoration of the biodiversity and seagrass.
Project Area:	The total project area is 225ha of intertidal and subtidal seagrasses located in Mwarembo-Spaki (168ha) and Jibweni-Bazo (56.5ha) Co-Management Areas (CMA) in Vanga Bay. Vanga Bay (4°25'S, 39°17'E) is located at the Southernmost tip of Kenya approximately 23km North of the Tanzanian border and 118km South of Mombasa Island. Jibweni-Bazo site is adjacent to the extensive mangrove forest along the waterline, 6.0km from the mouth of River Umba and approximately 4 km from Mwarembo-Spaki site. Mwarembo-Spaki site is further out from the shore with mangroves between the site and the shoreline located

	approximately 2.5km from the mouth of River Umba and 6.0km to the mouth of River Mwena. Plans for expansion: There is the possibility of expanding this to a total of 337ha within surrounding CMAs co-managed by Vanga and Jimbo Beach Management Units (BMUs), which will be explored if the initial project is successful.
Project Coordinator:	In UK: Association for Coastal Ecosystem Services • Amber Baker, amber@aces-org.co.uk • Amelia Allerton amelia@aces-org.co.uk • Robyn Morland, robyn@aces-org.co.uk In Kenya: Vanga Seagrass Project • Amy Mumo • Mwinyi Hassan Mohamed, mwinyi.vangaseagrassproject@gmail.com
Project Participants:	Proposed project participants: Vanga Blue Forest (VBF) Community-Based Organisation (CBO) employees (3); The community of Vanga (with a population of ~11,000 people), the community of Jimbo (891 people) the community of Jasini (130), and the community of Kiwegu (6,503); the BMUs that represents the fishing community. Plans for expansion: Currently there are no plans to expand the project participants.
Project Intervention(s):	The proposed project interventions are: 1. Seasonal closure (Improved management): Seasonal closure of the project areas: no access for 10 months of the year (April - January). Limited access for 2 months (February and March) in the mornings from 8:00 am till 11:00 am using gear restrictions. 2. Gear restriction (Protection): Only legal, artisanal fishing gear allowed and the prohibition of certain activities in the project area e.g. gleaning, harvesting of seagrass and seaweeds, anchoring, speargun, poison, dynamite, reef seine, gill nets with mesh size < 6”, aquarium fishing, scoop nets and monofilament nets. 3. Enforcement of restrictions and closures (Protection): Boat patrols will take place 4 times a month, with a record of all patrols kept. Two surveillance scouts will also be employed to monitor the Seagrass Locally

	Managed Marine Area (LMMA). Violators will have actions taken against them with more detail provided in Table 1: Project Interventions below. 4. Education (Improved management/Protection): Raising awareness on seagrass as an ecosystem and how it generates co-benefits. 5. Protection of seagrass and biodiversity for natural regeneration (Passive restoration): Monitoring of seagrass cover, species composition and distribution, as well as macrofauna bi-annually.
Expected Benefits:	• Biodiversity benefits: Compensation for reducing fishing pressure by limiting the accessibility of the project areas and by providing a sustainable funding stream through the sale of the Plan Vivo Biodiversity Certificates (PVBCs); prevention of seagrass destruction, leading to improved ecosystem provisional services such as fish nursery habitat supporting an increase in fish biomass and stocks, as well as overall habitat biodiversity in the surrounding areas which will bring a balance within the trophic levels and potentially lead to a 'spillover' effect for local fisheries. These interventions are expected to allow natural recovery and spread of the seagrass meadows. • The recent study by Ngisiange et al. (2024) demonstrates (i) the presence of fish larvae in seagrass beds is an indicator of strong recovery of fish population; (ii) high larvae concentration with low fish populations is indicative of overfishing of juvenile-adult sizes. These findings support that the project area through protection and effective management should also experience improved resilience and adaptation. Biodiverse environments support more complex ecosystems, which improves overall resilience. As the number of species and communities grow, there is a higher chance of enhanced adaptive capacity to a changing environment. This is especially important for seagrass ecosystems as the climate crisis is impacting ocean temperatures and causing sea-level rise across the globe, which can negatively impact seagrass. Productive, healthy and biodiverse assemblages are best placed to try to adapt to changing ocean conditions. • Socio-economic benefits: The sale of the PVBCs will include the establishment of secure and sustainable funding for community development. The project interventions will support the livelihoods of the fisherfolk as the project is designed to improve the local ecosystem health and replenish the important fish stocks upon which these communities rely and improve the ecosystem

	services provided by this habitat and mangroves forests protected by the adjacent Vanga Blue Forest (VBF) project (e.g. coastal protection and carbon sequestration). • No negative environmental (including climate) impacts: This project focuses on the protection and enhancement of an existing valuable ecosystem. This project will not involve the introduction of species but will implement sustainable management of the seagrass meadows. Management interventions include routine monitoring and surveillance, prohibiting destructive fishing methods, limiting fishing access and promoting the use of non-destructive fishing methods within the project areas at stipulated times of year. Seagrass conservation not only promotes natural ecosystem recovery but also significantly enhances carbon sequestration, a crucial component of climate change mitigation. Healthy seagrass habitats with dense vegetation are also effective at reducing coastal erosion, improving water quality through filtration, and attenuating wave energy during storms. In our project region, Vanga Blue Forest is protecting mangroves, so both these projects will work in synergy to further enhance coastline protection and community benefits.
Methodology Design:	This project is focusing on 'Conservation credits' but will also consider selling 'Restoration credits' in the future if the data allows for this.
PIN Version:	3.0
Date Approved:	08th October 2024

1 General Information

1.1 Project Rationale

The proposed project areas cover seagrass meadows in Jibweni-Bazo and Mwarembo-Spaki that are important wildlife habitats and serve as important fishing sites in Vanga Bay for the local artisanal villages. These fishing grounds are part of Co-Management Areas (CMAs) jointly managed by the Beach Management Units (BMUs) and Kenya Fisheries Service (KeFS) through shared responsibility and authority. The project areas are also part of the Transboundary Conservation Area (TBCA) between Southern Kenya and Northern Tanzania and are adjacent to the already established mangrove carbon-offsetting project Vanga Blue Forest (VBF). These project areas are of conservation interest as the project region contains seagrass species (Zostera capensis) and several animal species (green and hawksbill turtles) listed on the International Union for Conservation of Nature (IUCN) Red List of Species. Other adjacent areas of conservation interest include VBF, Kisite-Mpunguti Marine National Park and Reserve, and (gazetted but not operational due to limited enforcement of restrictions) Diani-Chale Marine Reserve in Kwale County which are located further up North from Vanga.

The project areas were proposed by the Vanga and Jimbo BMUs in agreement with the fisher community to protect the fishery resources from further decline by imposing limits on fishing activity. The local communities involved in this project understand that fish are present in seagrass areas, but not necessarily aware of the other ecosystem co-benefits that protecting this marine ecosystem also provides., such as protection from coastal erosion and storms, increased resilience and adaptation to a changing climate and ocean conditions, as well as carbon storage. These co-benefits are enhanced especially when the seagrass works in synergy with nearby mangroves and coral reefs. Seagrass is important for local culture and livelihoods. Local communities including women and youth, predominantly rely on fishing and fish trade for sustenance and income.

This project will be in collaboration with the team behind the successful Plan Vivo (PV) Climate certified VBF project and stands to benefit from the community awareness and support which has already been generated. As one of the first PV Nature projects to be developed, and one of the first within a marine ecosystem, we anticipate this launch project will offer a co-learning experience and demonstration for other similar projects. VBF's experience in communicating blue carbon conservation benefits to a wide audience will assist in bringing visibility to the project. Key project benefits include a sustainable finance stream for the community through a certified credit-generating framework that is highly replicable, and protection and restoration of a critical coastal habitat that has yet to be formally included in credit-generating projects.

1.1.1 Conservation Projects Justification

This project is eligible to be a PV Nature conservation project under the following two Important Plant Area (IPA) criteria but will also consider selling 'Restoration credits' in the future if the data allows for this.

Table 1.2.1 IPA criteria and proof of the proposed project's eligibility from published research papers

Criteria and Sub criterion	**Description**	**Proof of eligibility**
B - Botanical richness (iii) Site contains an exceptional number of socially, economically or culturally valuable species.	Site known to contain ≥ 3% of the selected national list of socially, economically or culturally valuable species OR the 15 richest sites nationally, whichever is most appropriate	Vanga Bay contains around 14% (~32km²) of all seagrass in Kenya (317.1 ± 27.2 km²). (Harcourt et al., 2018). "continuous areas of seagrass correlated better with fish abundance. Fishing is the major economic activity with fishing grounds being a complex of mangroves, seagrass and coral reef ecosystems. The fishery in Vanga is mostly artisanal, multigear and multispecies" (Wanjiru et al., 2023). "Most artisanal fishing activities take place within seagrasses. About 80% of the 10 most caught fish species are associated with seagrasses." (Mwikamba et al., 2024).
C - Threatened habitat (iii) Site contains nationally threatened or restricted habitat/vegetation type, AND/OR habitats that have severely declined in extent nationally	Site known, thought or inferred to contain ≥10% of the national resource (area)	Vanga Bay contains around 14% (~32km²) of all seagrass in Kenya (317.1 ± 27.2 km²). (Harcourt et al., 2018). Project region contains *Zostera capensis,* classified as a vulnerable seagrass species under the IUCN Red List: "*Zostera capensis* cover in Vanga" Awadh et al., 2024. Furthermore, seagrasses in Kenya are rapidly declining at a rate of 1.59% annually (Harcourt et al., 2018).

1.2 Project Interventions

Table 1 – Project Interventions

Intervention Type	Project Intervention	Expected Benefits
Improved management	Seasonal closure of the project areas: no access for 10 months of the year (April - January). Limited access for 2 months (February and March) in the mornings from 8:00 am till 11:00 am for illegal/destructive gear-restricted fishing activities. To optimise seagrass restoration and recovery, project areas will be closed to fishing activities for ten months annually, spanning April to January, coinciding with the rough seas of the Southeast and early Northeast monsoon seasons. This period aligns with peak nearshore fishing activity. The subsequent two months, February and March, will allow limited access as the seas begin to calm and fishing shifts towards offshore areas. The availability of alternative fishing grounds within the BMUs' CMA and the JCMA mitigates potential disruptions to fishing activities during the closure period. During the open season of February-March, fishing will be restricted to 8-11am only. This is so even when the fishing grounds are open, impact will be kept to a minimum. These management interventions were decided during a series of community consultations discussed in more detail in the PIN.	1. From Improved resource management a. Reduction in fishing pressure b. Enforcement of illegal/destructive gear restrictions c. Establishment of a refugia for fish and other fauna 2. From conservation efforts a. Long-term sustainability of fish stocks b. Reduction of fishing effort for local fishers c. Increased fish stocks and biomass 3. Environmental impacts a. Enhanced shoreline protection, water quality, sediment stabilisation, carbon storage and sequestration These interventions will provide long-term benefits and the subsequent increases in biodiversity will transcend beyond the project lifetime by increasing awareness on more sustainable fishing methods and on how the sustainable management of seagrass can be beneficial for livelihoods and environment. Although seine netting is illegal in Kenya, this activity is common within Vanga Bay and elsewhere on the coast

	As a result, we do not foresee any concerns surrounding the closures as all interventions have been decided and agreed upon by the fishing community.	(Mwikamba et al., 2024; JCMA plan 2017). Seasonal closure and patrols of the project areas will offer the opportunity to fully enforce gear restrictions and assure the use of sustainable, legal, artisanal fishing methods by the local fisherfolk. By enacting these interventions initially on a small scale (within the project areas), this should act as a trial and incentive for expanding restrictions on illegal gear across Vanga Bay in the future. Enforcement of these interventions are required to ensure their implementation. Although the community members of the participating communities have been part of the project design from the very beginning and are keen to protect their seagrass - and through the BMUs they have been monitoring areas of seagrass as part of ACES' carbon-plus model - it cannot be assured that people would not fish in these areas consistently. Moreover, in the two project sites there were previous coral closures different project developers that failed - to the best of our knowledge this was due to limited funding. In addition, there are other user groups such as non-local fishers who fish illegally in Vanga Bay and we cannot directly engage with them for this project. Enforcement will ensure they do not fish within the project areas - see the mention of illegal stakeholders in Section 2.
	Enforcement of restrictions; boat patrols to be carried out four times a month and records of patrols kept, surveillance by two employed scouts and the following actions to be taken for local and non-local violators: 1st offence will be issued a warning; 2nd offence, the violator will be reported to the local fisheries office (KeFS), fishing gear and/or vessel confiscated to be released upon payment of fine issued; 3rd offence, violator will be handed over to KeFS and action taken in line with the Kenya Fisheries Act (2016) and BMU by laws and regulations. Potential action against violators of the Fisheries Act (2016) could include fines, forfeiting property and profits to the state (e.g. their vessel and gear), or for repeat offences, a complete ban on being aboard fisheries vessels in Kenyan waters for up to five years.	
Protection	Gear restriction; only legal and artisanal fishing gear allowed (e.g. Hook and line, handline, basket traps, fence traps). The	Reduction of pressure on and destruction of the seagrass beds due to destructive fishing methods. Carbon benefit,

	restriction of destructive fishing practices within these areas such as anchoring, spearguns, poison, dynamite, reef seine nets, gill nets, aquarium fishing, scoop nets, and monofilament nets. The project plans to delineate site boundaries with buoys for ease of identification by the fisherfolk, as well as conducting routine patrols with the local KeFS office to enforce management interventions. Penalties for violators have been stipulated within the interventions and communicated to the fisherfolk.	enhanced carbon sequestration in the sediment and biomass of the seagrass. This intervention will provide long-term benefits and increases in biodiversity will transcend beyond the project lifetime by increasing awareness on the accessibility to more sustainable fishing methods and raising awareness on how the sustainable management of seagrass can be beneficial for, and increase, fish stocks. Protection of project areas will enforce management interventions. Routine patrols will assure that the local and non-local fisher community adhere to the rules and regulations. This will also enhance general compliance to national policies. Anticipated long-term impacts include a perception shift of local fisherfolk to more sustainable fishing practices once they're able to experience the direct impacts of enhanced fishery resources. Decreased disturbance of project areas will result in increased colonisation of seagrass species which in turn will lead to enhanced ecosystem services and the potential expansion of the seagrass meadow within the project area. Recognizing the significant role of women in coastal livelihoods, particularly in seaweed farming, the project prioritises their involvement. While seaweed farming activities in Jimbo have been dormant, the project engaged gleaners and seaweed farmers in focus groups to gather their perspectives on proposed management measures. To
	Prohibition of certain activities; gleaning and harvesting of seagrass and seaweeds.	

		ensure equitable representation, the Vanga Seagrass Project Committee (VSPC) includes both female and fisher community members. These groups will actively participate in decision-making processes, including benefit-sharing mechanisms. Restrictions are only imposed within the project areas, which is proportionately a small area within Vanga Bay and other grounds for activities such as fishing and gleaning are available. Furthermore, the project is likely to address the overfishing and depletion of commercial stocks in the area and it is hoped that a 'spillover effect' from the project areas will increase long-term food security as populations recover.
Education	Raising awareness; education on the seagrass ecosystem and the biodiversity found within, co-benefits generated, and the importance of seagrass conservation for humans, biodiversity and climate. Awareness campaigns will stem from the project itself, such as the focus on the conservation of the seagrass meadow to showcase the importance of this ecosystem. Awareness on the carbon and biodiversity of seagrass can be shared in culturally appropriate ways, as well as posters/leaflets with information on the project in all villages, community barazas and meetings, engagement with key stakeholders who can help spread awareness such as BMUs and village elders. Organising events and communication materials for the communities around key dates such as 'World Ocean Day'.	This project will raise awareness of the importance of seagrass as a marine ecosystem and the co-benefits that it generates. The combination of this project intervention along with the restrictions and limited access to the project areas will help avert seagrass degradation within the conserved areas and more broadly in Vanga Bay. The project aims to change the local community perceptions of seagrass and to adopt the habitual use of sustainable artisanal gears through continuous awareness and sensitisation campaigns, and by communicating impacts of project interventions.

Restoration	Natural regeneration; the improved management interventions - limiting access and restricting damaging fishing gear - will enable the passive restoration of the seagrass within the project areas. Cover change will be quantified through the monitoring of seagrass cover, species composition and distribution bi-annually.	Passive restoration will allow for natural regeneration of this ecosystem (fauna & flora) within the project areas and the extent of natural restoration to be determined. Awareness and education on seagrass carbon proxies and measurements.

For further clarity on the monsoon seasons and closures of the project areas please review the table below:

Table 1.1 Monsoon season, sea conditions and project area closure during the year

Month	**Monsoon season (SEM or NEM)**	**Sea conditions beyond reef of Vanga Bay (Rough or Calm)**	**Project area (Closed or Open)**
January	NEM	Calm conditions	Closed
February	NEM	Calm conditions	Open 8-11am only
March	NEM	Calm conditions	Open 8-11am only
April	SEM	Rough conditions	Closed
May	SEM	Rough conditions	Closed
June	SEM	Rough conditions	Closed

July	SEM	Rough conditions	Closed
August	SEM	Rough conditions	Closed
September	SEM	Calm conditions	Closed
October	SEM	Calm conditions (Shwari*)	Closed
November	NEM	Calm conditions (Shwari*)	Closed
December	NEM	Calm conditions	Closed

The project area is closed during the SEM, a period of rough sea conditions beyond the reef, so a time when people would most likely want to use the project areas; when the seas are rough people would want to fish near shore due to vessels and gear available. However, we emphasise that the project areas are not the only fishing grounds available to the fisherfolk and the protection of the seagrass meadow will support the biodiversity. Moreover, *Shwari is an indigenously recognised period of calm seas between monsoon seasons, typically occurring from late October to early November.

1.3 Project Boundaries

Maps including any statutory and non-statutory protected areas as well as any important conservation sites not officially recognised will be included at PDD stage - if not earlier. Geospatial data (shapefiles) files for project region and project area boundaries will be included at PDD stage - if not earlier.

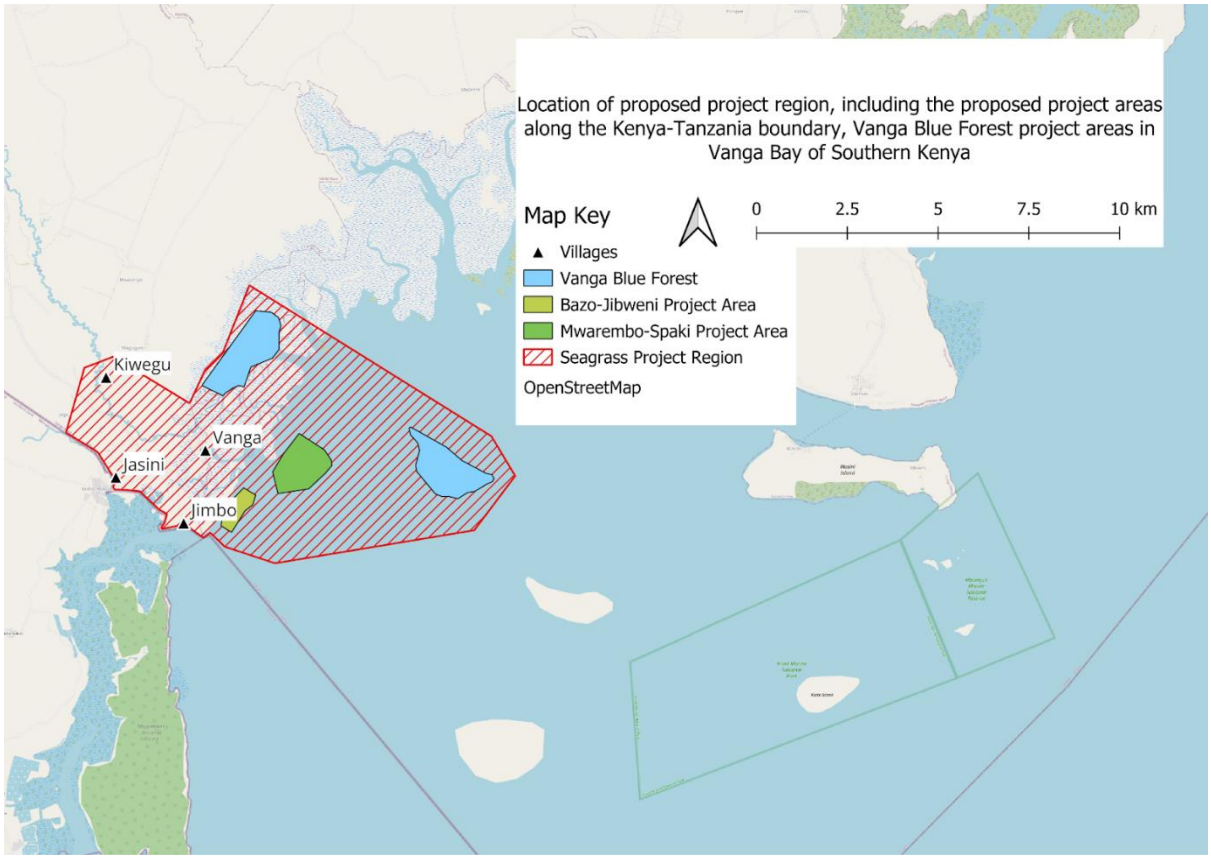

Figure 1. Illustration of the proposed project region (in red) and the location of the proposed seagrass project areas and the nearby protected areas (Vanga Blue Forest and Kisite-Mpunguti Marine National Park). This map was developed by ACES.

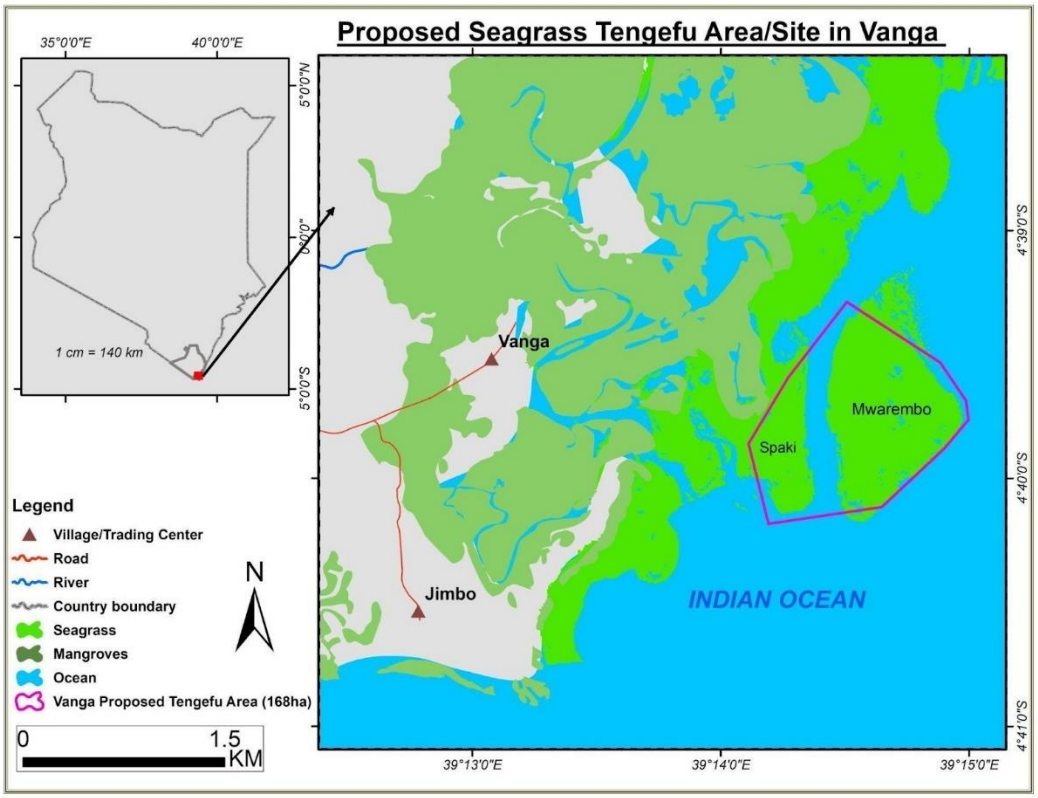

Figure 2. One of the two project areas: Mwarembo-Spaki of Vanga Bay (outlined in red). This map was developed by GIS expert Fred Mugai at KMFRI.

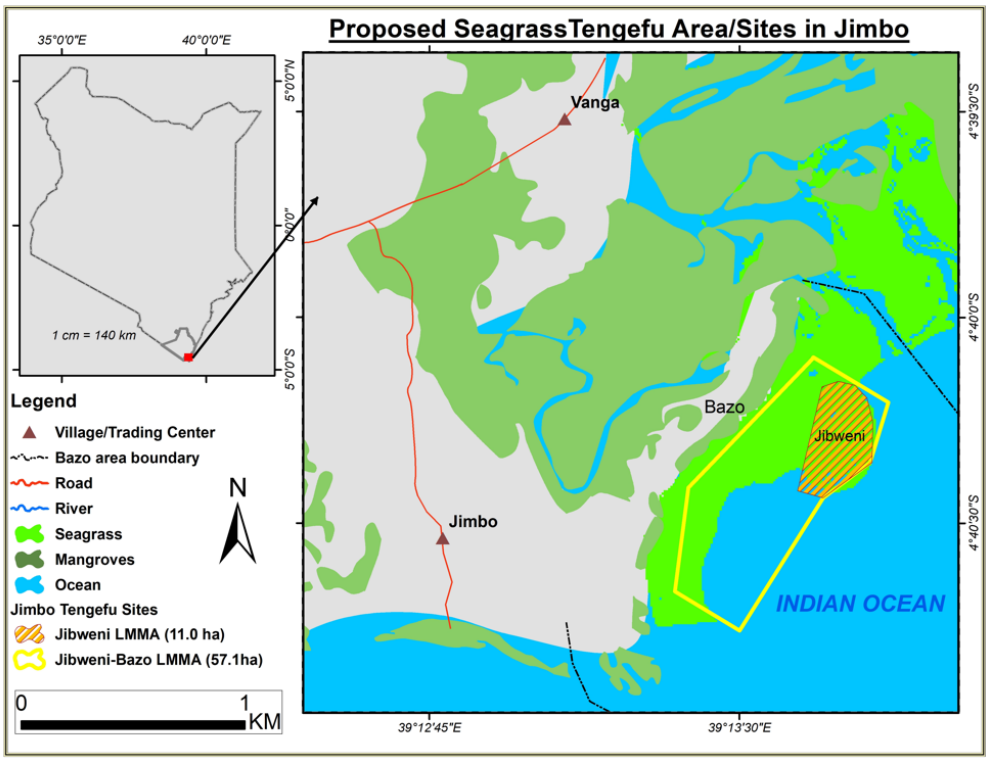

Figure 3. Project area Jibweni-Bazo of Vanga Bay (outlined in yellow), this project area covers a previously designates LMMA "Jibweni". This map was developed by GIS expert Fred Mugai at KMFRI.

Table 3 Project Boundaries

<table>
<tr><td>Location:</td><td>Enter the country, and district/province(s) where the project region is located.

The project region is located in: Kenya, Kwale County, Lungalunga Sub–county, Vanga, Jimbo, Jasini and Kiwegu villages, Vanga Bay.

The protected area boundaries were decided by the local fishers and members of Vanga and Jimbo Beach Management Units (BMUs) as part of a series of community consultations run by Kenya Marine Fisheries Research Institute (KMFRI). Decisions were made based on local and historical knowledge of fishing and ocean conditions in the region and to ensure ease of access from the coast for monitoring and enforcement.</td></tr>
<tr><td>Geographic Coordinates:</td><td>Enter Latitude and Longitude for the Project Area.

Table 3.1. Coordinates of the Project Region and Project Areas
<table><tr><th>Project Area</th><th>Latitude</th><th>Longitude</th></tr><tr><td>Vanga Bay</td><td>4 39’ 00” S</td><td>39 13’ 00’’ E</td></tr><tr><td>Mwarembo-Spaki</td><td>4 66’ 22” S</td><td>39 24’ 33” E</td></tr><tr><td>Jibweni-Bazo</td><td>4 67’ 39” S</td><td>39 22’ 75” E</td></tr></table></td></tr>
<tr><td>Project Region(s):</td><td>Enter the number and total extent (in hectares) of the proposed project region(s).

The project is situated off the coast of Vanga and Jimbo villages, within the broader Shimoni-Vanga seascape. This ~5320-hectare region encompasses the Vanga Blue Forest project area, multiple government-managed marine zones, and surrounding fishing communities.</td></tr>
<tr><td>Project Area(s):</td><td>Enter the number and total extent (in hectares) of the proposed project area(s).

Table 3.2. The total extent (in hectares) of the two proposed project areas
<table><tr><th>Project Area</th><th>Area (ha)</th></tr><tr><td>Mwarembo-Spaki</td><td>168</td></tr></table></td></tr>
</table>

Jibweni-Bazo	56.5
Total Project Area	225

Protected Areas:

Identify any legally designated protected areas within and/ or adjacent to the project region(s). Ensure to differentiate between whether the project area(s) is a protected area or adjacent to one.

The project region is part of the Pemba-Shimoni-Kisite transboundary area that has been identified as an Ecologically and Biologically Significant Area (EBSA) by the Convention for Biological Diversity (CBD). This area supports a high diversity of marine life including coral reefs, pelagic fish, sea turtles, and dugongs.

Legally designated protected areas adjacent to the project region have been summarised in the table below:

Table 3.3. Legally protected areas located adjacent to the seagrass biodiversity project region.

Name	**Location**	**Additional information**
Kisite Mpunguti Marine Protected Area near Sii Island	4.68’ 79” S, 39 39’ 32” E	Marine National Park and Reserve, managed by Kenya Wildlife Service. Park size: 39 sq. km (Kisite Park: 28km2. The park is Kenya’s largest no-take area. Kisite is recognized as an Important Bird and Biodiversity Area (IBA) for migratory seabirds, and particularly for a globally significant breeding population of roseate terns. Mpunguti Reserve: 11km2) plays an essential role in the life cycle of the coconut crab.
Vanga Blue Forest	4.39’ 00” S and 39 13’ 00’’ E	Plan Vivo certified mangrove carbon project, managed by Vanga Blue Forest Community Based Organisation (VBF). Size: 460ha
Kirui Island Marine Reserve (TZ)	4°58’12”S 39°9’36”E	National marine reserve for the conservation of mangroves, seagrasses and corals (36.10 km2)

1.4 Land and Management Rights

Land in Kenya is classified as public, private, or community land and is governed by various legislations (see Government of Kenya (2010) & The Constitution of Kenya). However, marine areas are classified as government-owned land. The BMUs possess long-term (permanent under the current Kenyan constitution) co-management rights over Vanga Bay, granted by the Kenya Fisheries Service (KeFS) under the Fisheries Act of 2016. These rights encompass the project areas and are contingent upon adherence to established policies and regulations.

Between 2010 to 2015, a number of civil society organisations initiated the development of Community Conservation Areas (CCAs) in the Shimoni-Vanga seascape. The CCAs are set-aside areas previously used for fishing grounds for protection by local communities through consultations with KeFS. However, the term CCA does not appear in Kenyan legislation and later, upon advice and direction from KeFS, the term co-management areas (CMAs) was adopted, which is the term used in BMU regulations, 2007. Hence in our activities, we aim to support the running of a CMA at Vanga focused on seagrass conservation.

Vanga Bay is part of the greater Shimoni-Vanga Joint Co-Management Area (JCMA) comprising 7 BMUs that spans 860 km2 of which 703 km2 is a multi-use zone. JCMA operates within Kenya's fisheries management hierarchy, granting fishing access to its seven member Beach Management Units (BMUs) upon formal request through respective BMU leadership. Spatial distribution of Vanga and Jimbo CMAs is 7 km2 and 0.9 km2 respectively. Mwarembo, located within Vanga CMA, is a shared fishing ground within the JCMA. Sii Island (designated fish breeding site), Mkwiro Island (turtle nesting area) and Kisite Mpunguti Marine Park and Reserve are all found within the JCMA. Jibweni-Bazo and Mwarembo-Spaki project areas are part of Co-Management Areas (CMA) for Jimbo and Vanga Beach Management Units (BMUs).

The Mwarembo-Spaki project area is partially designated as a shared fishing ground under the JCMA framework. In accordance with JCMA procedures, the Vanga and Jimbo BMUs have formally notified the JCMA about the establishment of the LMMA. Comprehensive outreach and sensitization programs will be conducted to inform the broader JCMA membership about LMMA regulations, benefits, and opportunities for input. All fishers operating within the LMMA will be subject to its management guidelines.

2 Stakeholder Engagement

2.1 Stakeholder Identification

This project is being led by the Vanga Seagrass Project committee that represents the Beach Management Units (Vanga BMU and Jimbo BMU) and residents from Vanga, Kiwegu, Jimbo, and Jasini villages. Notably, Kiwegu and Jasini BMUs are under the management of Vanga and Jimbo BMUs respectively. This committee will liaise, and report to ACES. The local fishing community began designating the project areas as Locally Marine Managed Areas in 2023. VBF CBO and the local communities involved in this project (Vanga, Jimbo and Kiwegu) have worked with ACES and local stakeholder institutions on the successful mangrove carbon offsetting project, Vanga Blue Forest, and have demonstrated success in managing pioneering projects.

Stakeholder groups are described in the figure below.

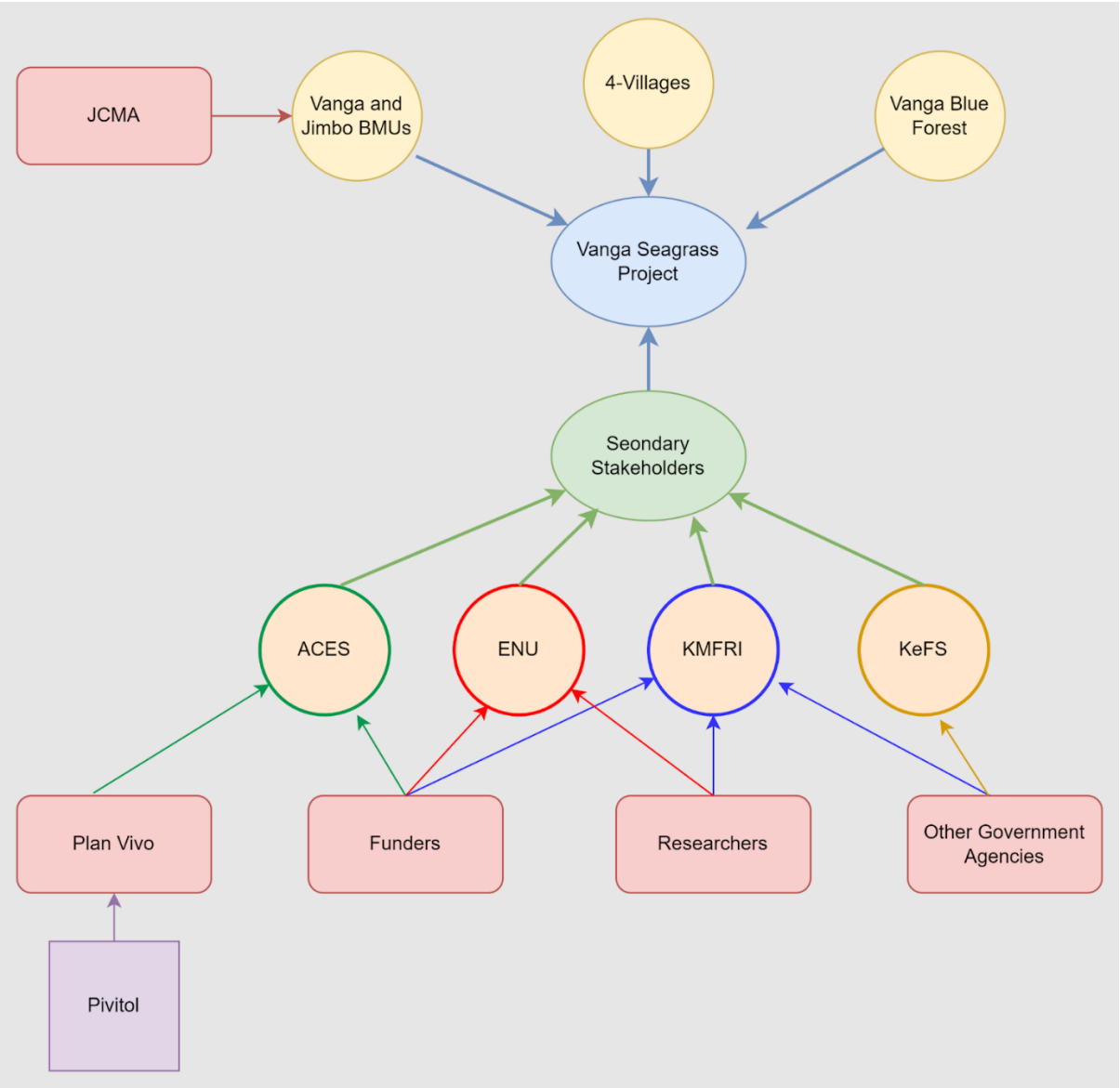

Figure 4. An illustration of the relationships between different stakeholder groups for this seagrass biodiversity project in Vanga Bay, Kenya.

As described in the figure above, this project is being coordinated in partnership between the primary stakeholders of the Vanga Seagrass Project committee (including the involved communities and the marginalised peoples within those communities) and ACES with technical support from Kenya Marine and Fisheries Research Institute (KMFRI) and relevant researchers, as well as resource management support from Kenya Fisheries Service. ACES will be supporting the local project coordinator with the development of the appropriate documents for certification by Plan Vivo and KMFRI will provide technical support (e.g. data management). Roles and responsibilities of each partner organisation will be further elaborated in the subsequent Project Design Document for this project.

Primary stakeholders include members of Vanga and Jimbo BMUs, as well as residents of Vanga, Jimbo, Kiwegu and Jasini villages and the 7 BMUs within the Shimoni-Vanga JCMA (Fig. 4). The BMUs are given their co-management rights by the KeFS and are primary stakeholders as they are based within the project region. The Vanga seagrass project committee that governs the project will comprise most of the local stakeholder groups, that is both BMUs, residents from all four villages, as

well as marginalised groups of women, youth and persons with disability. Local stakeholders will lead on formulating management interventions and benefit sharing structure, undertaking project activities, organising community awareness & sensitization campaigns, delineating project boundaries, and distribution of conservation incentives. The other BMUs within the JCMA who have a right to apply to access the shared fishing ground located within one of the project areas have also been engaged through the JCMA. The JCMA was informed by the Vanga BMU of the LMMA management interventions, and the project will ensure that opportunities to increase sensitisation and offer a mechanism to voice grievances is offered to the JCMA.

Secondary stakeholders include ACES, Edinburgh Napier University (ENU), Kenya Marine and Fisheries Research Institute (KMFRI), and Kenya Fisheries Service (KeFS), as illustrated in Figure 4. ACES and KMFRI have secured funding for various phases of research and project development. ACES will serve as the overall project coordinator and will lead on funder reporting. ENU will spearhead protocol development aligned with the Pivotal-developed PV Nature standard, and support funding acquisition. KMFRI and ENU will collaborate on research, community capacity building for monitoring, data management, and annual reporting. KeFS will oversee project area patrols, land user certifications, and enforcement. ACES will work closely with Plan Vivo to navigate the PV Nature certification process, and supporting additional resource funding acquisition as may be needed.

The project area comprises Vanga, Jimbo, Jasini and Kiwegu villages that are categorised as marginalised groups in the Kenyan constitution. The fisherfolk that rely on fishing as a source of income are inclusive of women and youth. Although the land is owned by the Kenyan government, the community has co-management rights to the project areas.

PV's current definition of Primary stakeholders "includes anyone who uses the land, legally or illegally". Those not included in Figure 4 - for clarity and due to lack of possible contact - are the fishers from Tanzania; we recognise this user group within Vanga Bay and their potential usage of the project areas; however, their frequency of use and resource utilisation is unknown to us. Jasini is a village located on the Kenya-Tanzanian border and therefore we can expect that news of the project will be shared via members of this village - knowing this, there will be more than the proportionate amount of communication materials in Jasini to help with the efforts of making Tanzanian fisherfolk aware of this project. Moreover, we will explore the possibility of allowing an open invite to cross-border BMU exchange visits, as it would not be possible to invite those that are using the area illegally, many people may not admit to illegal usage of an area, nor do we know exactly who is using the site for such purposes. Notably, any cross-border stakeholder engagement may be constrained as this is a function primarily conducted using designated communication protocols that are usually governed and limited to national institutions. It is expected that the patrols will deter illegal activity in the project area and perhaps within the immediate areas around the project areas; this project will use adaptive management to address the diverse stakeholder needs. More detail will be included in the risk mitigation and safeguarding sections of this document.

While the project area currently lacks established tourism infrastructure, its proximity to popular tourist destinations like Kisite-Mpunguti Marine National Park and Wasini Island presents an opportunity for future revenue generation. To capitalise on this potential, the project has addressed

marine tourism within the LMMA in the management interventions. This includes assigning qualified tour guides based at the BMU office to facilitate visits and ensure environmental protection.

2.2 Project Coordination and Management

ACES will act as a project coordinator and is responsible for the prudential management of this project. ACES will lead on project certification and reporting to funders and Plan Vivo. It will also support ENU in securing funding to support project requirements. ACES will also support the local project coordinator with the development of the appropriate documents for PV Nature certification. The local project coordinator is a liaison between local stakeholders and ACES who reports directly to the Vanga Seagrass Project committee. The project committee and local project coordinator together will be responsible for delivering key in-country activities.

The Vanga Seagrass Project committee, in collaboration with the local project coordinator, will assume the role of in-country project coordinator, responsible for executing key project activities.

The different responsibilities of these organisations will be defined beyond the descriptions in Table 4 and agreed upon within a project agreement that is currently being developed.

ACES is a registered Scottish charity (SCO 43978); this organisation helped to establish and now helps to run Mikoko Pamoja, the world's first community-led mangrove conservation project to be funded through the sale of carbon credits. Mikoko Pamoja and its sister project Vanga Blue Forest are both based in Kenya and are formally certified under the Plan Vivo Carbon Standard (PV Climate), which emphasises community benefit and control. Hence the charity has unique expertise in using the carbon market to provide long-term support for coastal conservation and livelihood benefits in Africa.

ACES is led by Robyn Morland, who has 10 years of experience in the carbon market and political ecology research. Robyn is supported by Amber Baker and Amelia Allerton who both work as Project Officers. Professor Mark Huxham of Edinburgh Napier University (also ACES Chairperson) has 20+ years' experience of research and project development in African mangroves and seagrass, including in biodiversity surveys and carbon accounting.

The Vanga Seagrass Project committee will be the vehicle through which the communities will govern the project with the support of the already established Vanga Blue Forest CBO. The project will be led by an in-country local project coordinator; currently this is a dedicated seagrass conservationist, Amy Mumo, who has worked with these communities for over three years in the development of a seagrass Locally Managed Marine Area (LMMA) and ultimately, this proposal. However, Amy will be starting a PhD in seagrass biodiversity monitoring in October 2024. Therefore, the project will engage a permanent project coordinator within the agreed tenure to take on the project duties by October 2024.

As the Vanga Seagrass Project Committee is a sub-committee focused on seagrass conservation within Vanga Bay and forms part of the Vanga Blue Forest CBO, and as such adheres to legislation such as the Community Groups Registration Bill and the National Policy on Community Development, which stipulates requirements to follow procedures that ensure equitable access to participation and inclusion and to avoid discrimination on the grounds of gender, ethnicity, disability, or other factors. This will be a minimum standard that this project will follow.

The project will be delivered by a qualified local project coordinator for day-to-day running of the project. They will be trained on project management and monitoring procedures and will be responsible for reporting of all the project activities and providing key technical data to ACES.

This project is one of the PV Nature pilot projects and one of the first biodiversity projects to be developed for a marine ecosystem. The project coordinators are keen to collaborate with Plan Vivo and their data analysis partners Pivotal to conduct the biodiversity monitoring. This would include in-country government-funded research institution KMFRI, in-country PhD students and Edinburgh Napier University - the institution supporting the PhD students.

Copies of the project coordinators ACES and VBF registration certificates and the Vanga and Jimbo BMU registration certificates are provided in Annex 2.

Table 4 Responsibility for Project Coordination and Management Functions

Project Coordination and Management Function	**Responsible Party/Parties**
Stakeholder engagement during project development and implementation	Vanga Seagrass Project Committee/ACES/KMFRI
Ensuring conformance with the Plan Vivo Biodiversity Standard (PV Nature) and compliance with applicable policies, laws and regulations	Vanga Seagrass Project Committee/ACES/KMFRI
Developing technical specifications, land management plans and project agreements with project participants	KMFRI/KeFS/ACES
Ensuring that the PDD is updated with any changes to the project	Vanga Seagrass Project Committee/ACES/KMFRI
Registration and recording of land management plans, project agreements, and sales agreements	ACES/KeFS
Managing project finances and dispersal of income to project participants as described by the benefit sharing mechanism	Vanga Seagrass Project Committee/ACES/KMFRI
Managing Plan Vivo Biodiversity Certificates in the Plan Vivo Registry	ACES
Preparing annual reports and coordinating validation and verification events	Vanga Seagrass Project Committee/ACES/KMFRI
Securing certificate sales and other means of funding the project	ACES

Assisting Project Participants to secure any legal or regulatory permissions required to carry out the project	Vanga Seagrass Project Committee/ACES/KMFRI
Providing technical assistance and capacity building required for project participants to implement project interventions	KMFRI/ACES
Monitoring progress indicators, socioeconomic indicators and climate indicators and providing ongoing support to project participants	KMFRI/ACES
Measurement, reporting and verification of biodiversity benefits	Vanga Seagrass Project Committee/ACES/KMFRI

2.3 Project Participants

Project participants are defined as an individual or group that enters into a project agreement with the project coordinator to implement project interventions and benefits from the sale of Plan Vivo Biodiversity Certificates (PVBCs). Therefore, this includes members of the Vanga Seagrass Project Committee, members of Vanga and Jimbo BMUs, as well as residents of adjacent villages of Vanga, Jimbo, Jasini and Kiwegu. KMFRI and KeFS will also support the implementation of the project interventions although they are not included in the definition of project participants as they are not part of the defined benefit sharing agreement.

Table 2.3.1. The project participants and their location in relation to the project areas and project region

Intervention	**Project participants**	**Location in relation to the project area and region**
1. Seasonal closure (Protection)	Vanga Seagrass Project Committee, members of Vanga and Jimbo BMUs, and residents of adjacent villages of Vanga, Jimbo, Jasini and Kiwegu.	Residents of the villages of Vanga, Jimbo, Jasini and Kiwegu; Due to their proximity to the coastline, Vanga and Jimbo are closer to the project areas, Jasini and Kiwegu are situated more in-land. All 4 villages reside within the project region.
2. Gear restriction (improved management)		
3. Protection of the seagrass for natural regeneration (Restoration)		

2.4 Participatory Design

Around 30% of jobs in the Vanga community are in the fisheries sector. The community recognises the importance of seagrass as a nursery habitat for fish, which boosts fish stocks and therefore fisheries. As this project is one of the first seagrass biodiversity projects worldwide, ensuring community participation and agreement is key to ensuring the success and sustainability of this project under the new standard.

This project is a natural progression of the LMMA; thanks to the establishment process of the LMMA, the project interventions have already been defined and developed in detail by the project

participants. The Beach Management Units (BMU) have been engaging with the community to ensure all perspectives are captured and not just of those that directly engage with the BMUs - iterative processes have and will continue to be used in the development of all project aspects (such as resource mapping and community meetings).

Plans to implement a LMMA were first discussed and agreed upon in a stakeholder meeting in October 2022. Participants of the meeting included BMU members, government agencies, non-governmental organisations and community members concerned with an ecosystems approach to fishery management. KMFRI then held a series of community consultations between March and May of 2023 with local stakeholders and Vanga and Jimbo BMU members to discuss and agree on LMMA boundaries and management interventions, sensitise the community to the project objectives and give further information on community-led conservation projects. Mapping activities were held to agree on project boundaries and spatial cover. The consultations also held focus groups on identifying what types of destructive gears are currently used within the BMU's fishing grounds and the pros and cons of different management interventions. Vanga and Jimbo BMUs then further consolidated management interventions for the closure sites through a series of community consultations to strengthen enforcement efforts with the complete list of interventions finalised in June 2023.

Photo above © Amy Mumo. Jimbo BMU review of proposed LMMA boundaries during a three-day KMFRI-led community consultation meeting in March 2023 with stakeholders, Vanga and Jimbo BMU members.

Photo above © Amy Mumo. VBF coordinator explaining Plan Vivo benefit sharing structure during a three-day KMFRI-led community consultation meeting in March 2023 with stakeholders, Vanga and Jimbo BMU members.

The first year of the development of this project will be used to refine the biodiversity monitoring strategy in line with PV Nature requirements and with the community. For example, in refining the methodology for appropriate cost-effectiveness and inclusiveness.

The Vanga Blue Forest project follows the gender-inclusive rule captured in Kenya's Constitution (2010) that at least 30% of governing members are female, and where it is deemed appropriate, separate meetings for women are held to ensure equal opportunities for contributing and participating. This project will follow the same principles and encourage female participation in consultations, workshops, working groups etc. Local staff will be aware of cultural sensitivities regarding gender, religion and ethnicity, as well as participation challenges posed by socio-economic status and factors such as disability and family commitments and will take steps to ensure that equal opportunities are given to all demographic groups for participation.

VBF CBO adheres to legislation such as the Community Groups Registration Bill and the National Policy on Community Development, which stipulate requirements to follow procedures that ensure equitable access to participation and inclusion and to avoid discrimination on the grounds of gender, ethnicity, disability, or other factors. As the project is being led by a project coordinator and Vanga Seagrass Project Committee, a sub-committee within VBF CBO, this will be a minimum standard that this project will follow (see Section 4.1. Governance structure for more information on the integration of the Seagrass committee within VBF CBO).

The governing committee of Vanga Blue Forest has, in the past, elected to prioritise vulnerable groups. This has included the provision of period products to schoolgirls, training of youths in scientific and technical skills, and providing emergency relief to widows and the disabled during Covid-19 lockdowns. It is expected that the priorities will be continued in the resulting framework of this project. This framework will also facilitate community autonomy in governance and spending; community development funds are at present spent according to local needs and priorities, with the only rule on expenditure being that it is deemed to benefit the community as a whole and not just individuals.

2.5 FPIC Process

Project participants of this project are members of the Vanga Seagrass Project Committee, Vanga Blue Forest CBO, women, youth, people with disabilities and local fishing community; members of these groups are from the local communities involved in this project including Vanga, Jimbo, Jasini and Kiwegu villages. Project participants are categorised as marginalized groups in the Kenyan constitution. These communities have co-management and user rights to the project areas that are government-owned.

Strong participatory processes have been used to enable the inclusion and negotiation of project design and implementation with the Vanga BMU and Jimbo BMU members. Many project participants are already familiar with conservation project processes and are beneficiaries of the Vanga Blue Forest Project. These local community members have been involved in the design and implementation of a seagrass conservation project soon after the establishment of the successful mangrove conservation and restoration project. The community of Vanga Bay were enthusiastic about introducing a Locally Managed Marine Area (LMMA) to protect vitally important seagrass meadows. This LMMA was included in the Vanga Blue Forest PDD (see page 12, 2021) as the establishment of a marine community conservation area (CCA) to cover 300 ha to enable seagrass conservation and benefits to the community generated under a "carbon plus" model to generate income from the LMMA instead of the development of a seagrass carbon project; this was due to the current limitations in quantifying and developing a seagrass blue carbon project (Shilland et al., 2021).

KMFRI led community consultations in 2023 to sensitise the BMU members on the uniqueness of the seagrass interventions (including the closure) and were made aware of the challenges. Concerns raised include management and ownership of the project between the BMU and VBF, as well as limited available alternative sources of livelihoods for the community to reduce fishing pressure within Vanga Bay. The participants also gained a better understanding of community-led conservation projects. This committee is an inclusive committee that enables collective decision-making and provides a platform for community members and marginalised groups to negotiate project conditions.

This project's committee will be autonomous within the already established VBF CBO, so will benefit from already established structures (such as grievance mechanism) but are free to negotiate design, implementation, monitoring and evaluation and may grant or withhold consent to: i) consider the proposed project; ii) engage in the project design process; and iii) implement the project through this structure and through these collaborative and consultative processes and meetings.

3 Project Design

3.1 Biodiversity Baseline

In the absence of this project, there would be no established long-term protection for the project areas. Although from the initial LMMA, the interventions of this project would not secure sufficient funding from donations, therefore the current and continual pressure in the seagrass and its biodiversity would continue under the baseline scenario; these drivers of seagrass degradation are expected to increase due to an increased fishing effort influenced by increasing human population of the adjacent villages resulting in the seagrass habitat and fish populations decline, as suggested by a recent assessment that fish catches in the region have declined by 40% (Wanjiru et al., 2021). The sale

of PVBCs generated from this project would secure the sustainability of the interventions and enable community development projects and support alternative income generating activities for the local communities.

There is evidence of the destruction of seagrasses from the frequent use destructive fishing methods - notably seine netting and anchoring - that are used in the project sites. Additionally, dynamite fishing has also historically occurred in Vanga Bay. Heightened utilisation of destructive fishing methods does not allow for the recovery of the seagrass meadows (Wanjiru et al., 2021; Awadh et al., 2024; Mwikamba et al., 2024). Under the business-as-usual baseline scenario, without enhanced enforcement capacity to limit fishing activity within the proposed project areas, the seagrass meadow habitat will continue to decline due to human activity.

Photos above © Edward Mtwiri and KMFRI. Left – uprooted seagrass, right - juvenile fish caught in seine net; photos from experimental assessment of the damage caused by seine nets within Mwarembo-Spaki fishing grounds.

In addition to the anthropogenic drivers of seagrass degradation, sea urchin herbivory is a natural driver of seagrass meadow degradation in Vanga Bay (Uku et al., 2021; Awadh et al., 2024). I n the study by Awadh et al. (2024) it was noted that a higher presence of sea urchins were found in areas having “high human activity such as Vanga Bay”; they recorded the highest number of sea urchins in Vanga Bay with a mean of 22 urchins per m2. It was also noted in this study that dugongs, who rely on seagrasses as their main food source, avoid urchin infested seagrass meadows. Dugongs also avoid areas of low seagrass density which echoes the findings of Wanjiru et al. (2021) whose study determined that there was a positive correlation between seagrass area and fish abundance. This demonstrates that intact and healthy seagrass meadows support important biodiversity of cultural, economic and conservation value. Therefore, the combination of destructive fishing methods and the anthropogenic pressures on the seagrass meadow contribute to the threat of survival of important and endangered species such as dugongs in Vanga Bay and coastal Kenya.

It can be postulated that the degradation of this ecosystem will have detrimental effects on nearby fishing grounds and protected areas. Marine megafauna also use the area as a wildlife migratory corridor (Barkley et al., 2019), further increasing the project's potential to positively impact threatened marine biodiversity (Table 3.1.1).

Table 3.1.1. IUCN Red List endangered species sighted within the project region of Vanga Bay (Table from the Vanga PDD, 2021)

Animal group	Scientific name	Common name	Local name	IUCN Red List Status
Reptiles	*Chelonia mydas*	Green turtle	Ziwa	Endangered
	Eretmochelys imbricate	Hawksbill turtle	Ng'amba	Critically endangered
Mammals	*Tursiops aduncus*	Bottlenose dolphin	Pomboo mwenye pua ya chupa	Endangered
	Sousa chinensis	Indopacific humpback dolphin	Pomboo wa nundu	Endangered
	Dugong dugon	Dugong	Nguva	Endangered

3.2 Socioeconomic Baseline

The local stakeholders are defined in Section 2.1 as the Vanga Seagrass Project Committee that consists of representatives for the communities of Vanga, Jimbo, Jasini and Kiwegu, including marginalised groups of women, youth, fisherfolk, and people with disabilities.

These stakeholders are characterised by low socio-economic status (Vanga Blue Forest PDD, 2019), with a poverty index just marginally higher than the Kenyan average. Employment opportunities are limited and largely restricted to fishing. The region is particularly vulnerable to the impacts and effects of climate change, most notably by recurrent and frequent droughts affecting Eastern Africa

While the local coastal ecosystems such as mangroves and seagrass present opportunities for climate change mitigation and adaption, the ability of coastal communities to protect and restore these ecosystems is limited without frameworks in place that provide economic incentives to conserve rather than exploit natural resources. Majority of the local communities involved in this proposed project are beneficiaries of the established mangrove conservation project Vanga Blue Forest and are aware of the processes, efforts and benefits of an ecosystem conservation project. The income from VBF carbon credits support various community development projects annually. Nevertheless, it is important to explore novel methods to secure financial streams to incentivise the initiation of conservation projects, for ecosystems currently not included with a Payments for Ecosystem Services project such as seagrass included in this proposal, develop projects in response to the global biodiversity crisis, and develop projects whose relevance may outlast those of carbon (Shilland et al., 2021). Therefore, securing a sustainable and long-term income through the sale of the biodiversity credits will fund community development projects and support the fishing community.

The implementation of project interventions is anticipated to have trickling impacts within the JCMA such as enhancement of marine biodiversity, income-generating opportunities like local tourism and artisanal fisheries, coastal protection and ecosystem resilience. The enhancement of the fisheries will offer additional benefits of this project, such as increased fish availability and biomass, providing the opportunity to increase financial returns from fishing activities at lower impact to the seagrass ecosystem.

In the absence of the project, it is expected that the socioeconomic status of the local population would remain low or even decrease. Local fishers understand the importance of protecting habitat to allow ecosystem recovery however, absence of the project would mean a lack of sustainable funding to implement the project interventions. Without the project, seagrass beds would continue to be

degraded by destructive fishing practices and there would be further loss of habitat and nursery grounds for commercially and culturally important fish stocks. Catches would continue to comprise small juvenile fish, and the likelihood of stock overexploitation would increase. This would impact both the local economy and food security; reduced biomass and reduced fish stock would lead to decreased income for those reliant on fishing for income and reduced food security for those that rely on fishing for sustenance.

Continued degradation of the seagrass bed would also impact other ecosystem services. Carbon sink function would be impaired and the benefits of seagrass to coastal protection and water quality would also be compromised, and the ecosystem would be less resilient to withstand stressors such as changes in ocean and climate conditions. The coastal communities would be subject to increased impacts from flooding and storms which would incur financial burden on the community as a whole (e.g. healthcare costs and repairs needed to local buildings) and individuals (e.g. loss and damages of property, health impacts, inability to work etc). Extreme climate events (e.g. El Niño) have caused flooding and death of mangroves and sedimentation of seagrasses in Vanga in the past (Vanga Blue Forest PDD, 2021) therefore the degradation of the seagrass could also incur negative impacts onto the mangrove forest of Vanga Bay including those under protection of Vanga Blue Forest.

Sea urchin populations would also continue to rise due to lack of predators, further degrading the seagrass ecosystem and in turn its benefits to fish and as a coastal buffer. All of these environmental issues can have an impact on socioeconomic stability, through reducing the resilience and sustainability of commercially important species and the habitats in which they reside. This is especially damaging for communities like the adjacent villages of Vanga Bay whose economies are heavily reliant on marine habitats as fisheries resources. Furthermore, by not protecting local biodiversity, there is also little ability to explore other potential revenue streams for the community such as ecotourism. Without the project the community would not receive enhanced funding for community development projects through the bundling of the PVBCs and the carbon credits issued from the Vanga Blue Forest project.

3.3 Environmental Baseline

In the absence of this project, there would be no established long-term protection for the project areas. Although from the initial LMMA, the interventions of this project would not secure sufficient funding from donations, therefore the current and continual pressure in the seagrass and its biodiversity would continue under the baseline scenario. Total greenhouse gas captured by this habitat and the project areas has not been quantified but is expected to be decreasing with the demonstrated decline of seagrass in area and quality within the project areas due to the human and natural pressures on this ecosystem. Therefore, it is expected that the associated co-benefits of a seagrass ecosystem of increased water quality, shoreline protection, and fisheries enhancement are all expected to decline under the baseline scenario. Seagrass offer support for biodiversity and sequester around 10% of the annual burial of organic carbon in ocean sediment and contain ‘irrevocable carbon’ that, if lost, cannot be recovered on a timescale in line with avoiding the catastrophic impacts of climate change (Shilland et al., 2021; Mwikamba et al., 2024). In the project areas, the protection and enhancement of the seagrass and its associated biodiversity will enable the preservation of the already sequestered carbon and enable further carbon sequestration.

Seagrass sequesters 5.06 t CO2 ha per year (McLeod et al., 2011). Hence 225ha will sequester 1,138 t per year. In addition, work by the current team at a nearby site showed seagrass losses caused 8.36 t CO2 ha per year (Githaiga et al., 2019). Additional research, using remote sensing, showed an average rate of seagrass loss in Kenya of 1.59% per year (Harcourt et al., 2018); translated to this site, that implies an additional 18 t CO2 saved per year in avoided emissions, giving a total of 1,156 tonnes per year.

Furthermore, supporting the seagrass in proximity to the mangrove conservation project, Vanga Blue Forest, may offer enhanced results for both projects. Seagrass can store carbon from within and outside the meadow (Shilland et al., 2021).

Photo above © Anthony Ochieng Onyango – Mangrove tree and pneumatophores within *Thalassia hemprichii* seagrass meadow in Vanga Bay.

3.4 Project Logic

Table 2 Initial Project Logic

	Description	**Assumptions/Risks**
Outcomes – Intended overall project aim		
Biodiversity Benefit	1. Baseline and rate of change study as a pilot to encourage other intertidal/marine and small community groups to formally protect their biodiversity. 2. Conservation of important species, stopping the local decline of biodiversity and of the natural ecosystem, possible restoration dependent on outcomes of tested approaches and monitoring methods success.	Assumptions 1. Baseline data is representative. 2. Comprehensive understanding of the primary threats to biodiversity in the area. 3. Appropriate, accessible and cost-effective monitoring and sampling techniques aligned with PV Nature expectations and capacity determined. 4. Community members are willing to participate in data collection and provide accurate information. Risks 1. Project unable to be certified by Plan Vivo. 2. Target species populations may continue to decline despite conservation efforts. 3. Emergence of new or unforeseen threats to biodiversity. 4. Tested approaches may not yield the desired results. The likelihood of these risks are minimal as the ACES team are working closely with both the Vanga Seagrass Project team and Plan Vivo to develop effective and appropriate monitoring techniques for both the certifiers requirements and the local community.
Socioeconomic Benefit	1. Community-accessible means of understanding and monitoring biodiversity, capacity building, education on the importance of seagrass for the local	Assumptions 1. The community possesses the capacity to understand and utilise provided tools and information.

	economy, and support regulation of fishing activities and promote sustainable fishing activities and value addition. 2. Secured income from PVBCs which can be used to employ local people to monitor/protect the ecosystem and community development projects.	2. There is sufficient interest and participation from community members in monitoring and conservation efforts. 3. Adequate resources (financial, human, and technological) are available for capacity building and knowledge transfer. 4. There is sufficient market demand for PVBCs to generate consistent revenue. 5. The project can demonstrate additionality in terms of biodiversity to continue generating PVBCs. Risks 1. The accuracy and reliability of collected data may be compromised due to various factors (e.g., equipment malfunction). 2. Challenges in effectively transferring complex information to community members. 3. Capacity building efforts may not lead to immediate or significant changes in community practices. 4. Insufficient resources may limit the scope and impact of capacity building efforts. 5. Fluctuations in the price of PVBCs could impact revenue generation. These risks are minimal as the project is community-led and sensitisation work is already underway. Also, VBF already operates in the region, providing a clear project example. Despite biodiversity credits being an emerging market with uncertain demand, ACES is sourcing alternative funding through grants and donations to support with setting-up project monitoring. Furthermore, ACES has been able

		to establish early demand for supporting this particular seagrass project by including it as part of the VBF Carbon Plus model.
Environmental Benefit	1. Linking seagrass carbon proxy measures to better understand seagrass carbon storage potential. 2. The protection and enhancement of the seagrass bed and its biodiversity will enable the preservation of the already sequestered carbon and enable further carbon sequestration by restoring lost carbon sinks. i.e. the 225ha project area will sequester 1138tCO2/year. These project areas and the proximity to Vanga Blue Forest will enhance the ecosystem connectivity and subsequent environmental benefits. 3. Protecting and enhancing biodiversity through the project will restore habitat for IUCN Red List species and provide increased resilience to stressors such as changes to ocean and climatic conditions through increased diversity of species. Protecting the seagrass will improve water quality and reduce erosion and impact of storms by acting as a buffer, slowing down water turbidity and trapping sediment. These benefits are further enhanced by the presence of the VBF project as mangroves and seagrass work in synergy.	Assumptions 1. Appropriate, accessible and cost-effective monitoring methods tested and established. 2. Proxy measures remain consistent across different seagrass meadows and over time. 3. Protection efforts will successfully restore lost carbon sinks and increase overall carbon sequestration. 4. Protecting the seagrass bed will lead to a recovery of associated biodiversity. 5. Proximity to the Vanga Blue Forest will enhance ecological benefits through increased connectivity. 6. No natural disasters that disturb the seabed 7. Project interventions will be successful. Risks 1. Changes in environmental conditions may affect the relationship between proxy measures and carbon storage. 2. Increasing sea temperatures, ocean acidification, and extreme weather events could hinder seagrass recovery. The impact of these risks is minimal as the ACES team are working closely with both the Vanga Seagrass Project team and Plan Vivo to develop effective and appropriate monitoring techniques for both the certifiers requirements and the local community. The most prevalent extreme weather events in the region are droughts and floods. Floods are likely to have more influence on seagrasses as they are associated with influxes of sediment and nutrients. However, the protection

		measures taken up in the project will increase the resilience of the ecosystem.
Outputs		
Output 1	Novel methods (e.g. acoustic) tested for biodiversity monitoring/crediting project; Biodiversity methods research paper.	Assumptions 1. The selected acoustic methods will accurately and reliably measure biodiversity indicators. 2. The project team possesses the necessary expertise to analyse and interpret acoustic data. 3. Acoustic equipment will function reliably under varying environmental conditions. 4. Local communities will support data collection efforts and understand the project's objectives. Risks 1. Acoustic methods may not capture all biodiversity components or may be influenced by environmental factors. 2. Difficulties in accurately translating acoustic data into meaningful biodiversity metrics. 3. Equipment malfunctions or data loss could hinder data collection. 4. Ethical considerations about the potential impact of acoustic methods on marine life Mitigation 1. Conduct rigorous testing and calibration of acoustic equipment to ensure accuracy. 2. Implement strict data quality control measures. 3. Build strong relationships with local communities to foster support and understanding. 4. Develop backup plans for equipment failures or data loss.

		5. Adhere to ethical guidelines for acoustic research and minimise potential impacts on marine life. 6. Prioritise funding and personnel for critical project components. 7. Collaborate with other researchers to share findings and best practices.
Output 2	Formal protection for the local seagrass meadows via certification under PV Nature achieved in a marine ecosystem. This includes seasonal closures, gear restrictions, monitoring and surveillance.	Assumptions 1. The project meets the criteria for PV Nature certification. 2. Local communities will support and comply with the imposed restrictions. 3. Adequate resources are available for monitoring and enforcement activities. 4. There is a sufficient market for PV Nature certified biodiversity credits. Risks 1. Opposition to seasonal closures and gear restrictions from local fishing communities. 2. Insufficient resources or personnel for effective monitoring and surveillance. 3. Fluctuations in the biodiversity credit market could impact project revenue. Mitigation 1. Costs mitigated through raising of sufficient funds to support the development, management and implementation of the interventions for the LMMA. use of low-cost and accessible monitoring methods.

		2. potential partnership with biodiversity monitoring organisation or Pivotal and Plan Vivo to secure additional funding and support the development of a biodiversity monitoring protocol for marine environments. 3. Implement robust communication and outreach programs to build support for conservation measures. 4. Train local communities in monitoring and enforcement activities. 5. Collaborate with government agencies and NGOs to strengthen enforcement capabilities. 6. Explore additional revenue streams to reduce reliance on carbon credit sales. Monitor project impacts and adjust strategies as needed.
Output 3	Support of sustainable livelihoods and community development. Establishment of funding stream from the sale of the PVBCs.	Assumptions 1. Local communities are willing to participate in livelihood development projects. 2. Generated funds will be effectively utilised to create sustainable livelihoods. 3. The community has the capacity to implement and manage livelihood projects. 4. There is a sufficient market for the project's biodiversity credits. Risks 1. Fluctuations in the price of PVBCs could impact revenue generation. 2. Lack of community engagement or buy-in could hinder project success.

		Mitigation 1. Invest in capacity building to strengthen community ownership and management. 2. Implement robust financial tracking and reporting systems. 3. Conduct thorough assessments of livelihood activities to minimise negative impacts. 4. Monitor project progress and make adjustments as needed. 5. ACES is sourcing alternative funding through grants and donations to support with setting-up project monitoring. Furthermore, ACES has been able to establish early demand for supporting this particular seagrass project by including it as part of the VBF Carbon Plus model. Strong community buy-in as closures and restrictions have been chosen by the local community. The successes of VBF and continuous community engagement have resulted in a greater appreciation of some of the benefits of protecting seagrass such as improved fish stocks.

3.5 Proposed Biodiversity Monitoring

Table 5 Prospective Biodiversity Monitoring

Selected Biodiversity Monitoring Tool	**Target Groups(s) the Biodiversity Monitoring Tool will target**	**Reason why this tool has been selected**	**Monitoring activities. Detail project specific considerations for monitoring this target group.**
Required Target Groups			

High resolution imagery using camera for in-situ monitoring	Seagrasses and sessile macroinvertebrates	Required under PV Nature methodology; fits data collecting requirements for tropics	1. Water turbidity, seagrass distribution including the occurrence of bare patches, siltation from nearby river mouths during the long and short rainy seasons, and strong currents during SEM can affect imagery quality. 2. Biodiversity patterns within this region remain largely unexplored.
Camera trapping or acoustic monitoring	Fish	Required under PV Nature methodology; fits data collecting requirements for tropics	Acoustic methods might not provide sufficient resolution to distinguish between different species, potentially limiting identification to the genus or family level.
Additional Recommended Target Groups			
Camera trapping or high resolution imagery using camera	Migratory megafauna (sea turtle, dugong) as the project is part of the greater Shimoni-Pemba EBSA site	It will aid in monitoring the resurgence of once-abundant charismatic species that will in turn enable quantification of conservation efforts.	Migratory patterns of marine megafauna within this region remain largely unexplored.

3.6 Additionality[1]

Table 6 Initial Barrier Analysis

[1] See Baseline Scenario and Additionality Assessment Tool

Project Intervention	**Main Barriers**	**Activities to Overcome Barriers**
1. Seasonal closure (protection)	1. Need to increase enforcement to implement this; need for sufficient financial support to enforce the formal protection of these areas of seagrass. 2. Fisher communities' perception of marine protected areas as constraints on their livelihoods. 3. Monitoring and enforcing closures can be resource-intensive and challenging, especially in areas further from the shore. 4. Fishers may resist closures due to perceived short-term economic losses or lack of trust in the management body. 5. Limited options for alternative income sources during the closure period can hinder acceptance. 6. Lack of understanding about the ecological benefits of closures among fishers.	1. Direct involvement of the fisherfolk in project design, implementation and benefit-sharing; 2. Community development funding from PVBC income; 3. Capacity building for alternative income generation if required. 4. Educating fishers about the ecological benefits of closures and the long-term benefits for fisheries. Tracking the effectiveness of the closure and communicating results to the community.
2. Gear restriction (improved management)	1. Gear restrictions might disproportionately affect groups using restricted gears. 2. Insufficient personnel and equipment to monitor and enforce regulations. 3. Difficulty in ensuring adherence to gear restrictions. 4. Lack of viable alternative income sources for fishers affected by restrictions.	1. Train community members in alternative livelihood options. 2. Establish effective monitoring and surveillance systems by sourcing for long-term funding 3. Foster open dialogue and build trust through participatory decision-making. 4. Educate fishers about the ecological benefits of gear restrictions and the impact of the restricted gear on

	5. Deep-rooted fishing practices and traditions can hinder the acceptance of new regulations. 6. Weak community governance structures and decision-making processes.	seagrass and the marine environment. Raising awareness on the importance of seagrass as a blue carbon ecosystem and its co-benefits for humans, biodiversity and climate. Emphasis on the use of traditional/artisanal and/or legal gears. Raising awareness on.
3. Protection of the seagrass and natural regeneration (Restoration)	Need to increase enforcement to implement this; need for sufficient financial support to enforce the formal protection of these areas of seagrass.	Knowledge and skills gained from scientific research to help raise awareness on the importance of seagrass as a Blue Carbon ecosystem and its co-benefits beyond carbon and biodiversity benefits. Direct community involvement and benefit from the protection of seagrass i.e. increased fish stocks.

Table 7 Threat Analysis

Major threat to biodiversity	**Main Barriers**	**Activities to mitigate threat**
The use of destructive fishing gear (e.g. seine netting), inflicting damage to the habitat, seagrass beds, and seabed.	1. Fishers may rely heavily on destructive gear for their livelihoods. 2. Fishers may not understand the negative impacts of their gear on the marine ecosystem. 3. Excessive fishing pressure leading to depletion of fish stocks, including juveniles. 4. Links between fisheries and increase in sea urchin populations may not be understood. Negative impacts of excessive sea urchins in the region on seagrasses may not be understood.	1. Educate fishers about the ecological impacts of destructive gear and the benefits of sustainable practices. 2. Strengthen monitoring and enforcement efforts, including community-based surveillance. 3. Promote and support the adoption of alternative, less destructive fishing gear. 4. Train fishers in sustainable fishing techniques and post-harvest handling.
Overfishing of invertivore fish species and sea urchin predators leading to an		

increase in sea urchins. This can cause seagrass overgrazing, damaging the habitat.	5. Fishers may engage in overfishing due to economic pressures and lack of alternative livelihoods.	5. Implement effective fisheries management plans such as seasonal closures. 6. Gear restrictions. 7. Empower local communities to participate in fisheries management. 8. Promote alternative livelihood options for fishers. 9. Regularly assess the effectiveness of management measures and adjust strategies as needed.
Tanzanian fishers fishing illegally in the project areas.	1. Difficulty engaging with illegal stakeholders due to cross-border engagement not within our jurisdiction and stakeholders unlikely to come forward. 2. Monitoring and enforcing fishing regulations can be challenging.	1. Extra communications materials will be distributed in Jasini, the village on the Kenya-Tanzanian border and we expect that news of the project will be shared via members of this village, making the Tanzanian fisherfolk aware of this project.
Extreme weather events, characterised by nutrient and sediment influx, coupled with heightened wave energy, pose significant threats to seagrass health by disrupting critical processes like photosynthesis.	1. Extreme weather events are often unpredictable, making it difficult to prepare and mitigate their impacts. 2. Coastal communities may lack the necessary infrastructure to withstand extreme weather events 3. Damage to infrastructure and livelihoods can hinder recovery efforts. 4. Seagrass beds in this region may have limited resilience to extreme weather events.	1. Prioritise protection of degraded seagrass beds to enhance resilience. 2. Educate coastal communities on disaster preparedness and response.

2.1 Exclusion List

Please refer to Annex 3 for the completed Plan Vivo Exclusion List.

2.2 Environmental and Social Screening

Project coordinator responses to the social screening report can be found in Annex 4.

Table 8 Environmental and Social Risks

Risk Area	**Potential Risks**
Vulnerable Groups	This project's focus on fishing grounds poses a limited risk of affecting the livelihoods of those that rely on fishing in this area (which includes the local communities that are considered marginalised, women, youth and people with disabilities). This risk is mitigated by the participatory approach used in the project development phase and during the delineation of project areas boundaries in the last three years, the team's experience and relationship in establishing and running the mangrove conservation project, Vanga Blue Forest, in the same project region for almost 10 years.
Gender Equality	Although fishing is a male-dominated activity, women engage in fish processing activities to sustain their households and have been part of the decision-making process. The risk of this project negatively impacting gender equality is limited as this project upholds and aligns with the two-thirds gender rule upheld in Kenya's national constitution (2010) encouraging women to assume leadership roles and ensuring women are involved in decision-making processes. For example, as part of the community consultations held to discuss management, restrictions, closures and LMMA boundaries, women from different groups were in attendance to input into this work. Attendees included women from Jimbo and Vanga BMUs and a female village elder. There was also female representation from VBF. As a result, women were part of the decision making process and were able to directly contribute to boundaries and management interventions within the project areas. Within the Vanga Seagrass Committee, 4 representatives are required to be women so that they are fairly represented in the decision-making body for the project and can also influence how the benefits-sharing mechanism is spent to ensure community development projects that would benefit or be useful to women are also considered by the committee.

	Capacity building and any educational or awareness materials will be made accessible to women. Local staff will be aware of cultural sensitivities regarding gender and ethnicity, as well as participation challenges posed by socio-economic status and factors such as disability and family commitments and will take steps to ensure that equal opportunities are given to all demographic groups for participation.
Human Rights	As one of the project interventions is limiting fisherfolk access to the natural resource within the protected areas there is a risk of affecting the economic, cultural, and work rights of those that rely on these fishing grounds. However, these areas were designated by the local community in efforts to improve the local ecosystem health and replenish the important fish stocks upon which these communities rely on and ultimately improve livelihoods. The fisherfolk - including women, youth and people with disabilities - are explicit stakeholders of this project.
Community, Health, Safety & Security	To the best of our knowledge, there is minimal to no risk of endangering health, safety and security of the communities involved in this project. Project coordinators will follow due diligence procedures and will be working with local and national organisations e.g. KMFRI.
Labour and Working Conditions	There are risks involved in working within a marine area. Project activities will undergo the relevant risk assessments and appropriate Health and Safety procedures will be applied. Project coordinators are subject to the relevant legislation and reporting requirements of Kenya. Volunteers and students from outside of Kenya will prepare appropriate risk assessments before visiting. The project will ensure that all employed persons terms of reference will be in line with Kenyan labour laws.
Resource Efficiency, Pollution, Wastes, Chemicals and GHG emissions	There is minimal risk associated with project activities such as GHG emissions from the transport to the site and litter/plastic pollution from improper disposal of project materials. But these impacts will be mitigated where possible. The project will also raise awareness on waste management to curb marine pollution.
Access Restrictions and Livelihoods	This project includes the seasonal closure of the two designated project areas. Full resource restrictions for 10 months of the year then limited access for 2 months of the year. Other activities - e.g. swimming - can occur if granted permission by the relevant BMU. Nevertheless, livelihoods will be minimally disrupted by this access restriction; Sii Island and other adjacent fishing grounds will be accessible to the fisherfolk. Moreover, the sale of the PVBCs will support the project's community benefit fund that can support livelihood diversification initiatives. The

	designation of the project areas was achieved through a participatory approach through stakeholder consultation; this was also the case for the project design and the benefit-sharing agreement. The project will monitor and evaluate the improved management interventions for adaptive management.
Cultural Heritage	Some of the restricted gears such as beach seines are deeply rooted in the culture and traditions of the locals. The project will educate the fishers on the impacts of these destructive gears on seagrasses and the implications on their livelihoods. Fishers will be trained on sustainable fishing practices.
Indigenous Peoples	Local communities are legally recognized as primary resource users under Kenyan law, with rights enshrined in the Community Land Act, Public Participation Act, and the Constitution. These communities, characterised by shared culture, livelihoods, and geography, are at the core of this project. By respecting their governance structures, the project aims to enhance community-led resource management.
Biodiversity and Sustainable Use of Natural Resources	There is no risk of the project negatively impacting biodiversity and natural resources - this project aims to restore an important ecosystem, its associated biodiversity and ecosystem services, support local other marine species that rely on the area and increase the sustainability of the natural resource-based livelihoods of the fisherfolk of Vanga Bay.
Land Tenure Conflicts	The seascape is government-owned, and the communities have legally recognised co-management rights of the project areas and surrounding co-management areas within Vanga Bay, this has been understood by the communities, relevant authorities and project coordinators.
Risk of Not Accounting for Climate Change	The impacts of climate change on the project area are understood (see page 42 of Vanga Blue Forest PDD, 2021). The inevitable impacts of climate change, such as the increase in storm intensity and frequency, flooding and droughts impact the local community and the seagrass ecosystem itself e.g. sedimentation. However, this project and the nearby mangrove carbon project, Vanga Blue Forest, will offer enhanced co-benefits, and protection from erosion, flooding and extreme weather events to the coastal communities of Vanga Bay.
Other – e.g. Cumulative Impacts	Although resource and physical restrictions are involved in this project's interventions, the surrounding areas will continue to be used as fishing grounds as they have been since before the development of this project,

	therefore there is minimal risk that this project will contribute cumulatively to existing environmental or social risks.

2.3 Stacking and Double Counting

Identify any other payment for ecosystem service projects, greenhouse gas emission reduction projects, programmes or initiatives that overlap with the proposed project region(s)

Include details on whether the project also plans to generate carbon credits from the same project area. Explain how the activities in the biodiversity project go above and beyond the proposed carbon project and how these will generate further biodiversity benefits.

Within the proposed project region there is another payment for ecosystem services project, Vanga Blue Forest, which is a community-led mangrove conservation and restoration project. Vanga Blue Forest has enabled the protection of 460 hectares of mangroves and community development projects supporting the livelihoods of more than 7000 people in Vanga, Jimbo, and Kiwegu villages. More information can be found here: https://www.aces-org.co.uk/our-projects/vanga-blue-forest/

It is the hope of this project, and communities, to continue to generate carbon credits from the already established mangrove project - Vanga Blue Forest - and generate PVBCs from this proposed seagrass project; although these projects are separate in location (in terms of project area but share the project region) and are managed by discrete committees, they operate under the VBF CBO umbrella and share similar processes and governance structures. As stacking is defined as the issuance of both carbon credits and Plan Vivo Biodiversity Certificates (PVBCs) by the same Project; therefore, we aim to 'bundle' these distinct credits under this umbrella of VBF CBO; a pioneering blue carbon approach, it would be the first mangrove and seagrass project worldwide to generate biodiversity credits and the first project to 'bundle' carbon and biodiversity credits.

The project will illustrate how current barriers to including seagrass in certified projects can be overcome and how a landscape approach to blue carbon conservation and restoration can be implemented and will act as a demonstration site not only for the practical implementation of co-generation of carbon and biodiversity credits but also a test for the market for biodiversity as well as bundled credits. . Although the carbon credits will not be directly sold from this proposed seagrass project under Vanga Blue Forest there would be an understanding that the seagrass would be providing carbon as a co-benefit to the biodiversity certificates.

Vanga Blue Forest is a separate PV Climate certified project that operates in - the same project region but - different project sites to this Vanga Seagrass Project. The development of this project will not incur changes to the VBF PDD. Clarity on the location of seagrass monitoring for the ACES carbon-plus model will be sought and as long as the seagrass monitoring does not occur within the Vanga Seagrass Project areas then it will continue as normal. This will provide the opportunity for VBF's mangrove carbon credits to be sold at a premium in the market and also safeguards these areas in case a formal seagrass carbon project becomes possible in the near future.

2.4 Relevant Legislation and Policies

Table 9 National Level Legislation, Policies and Instruments

	Yes/No/Unsure	Details
Does the country receive or plan to receive results-based biodiversity or climate finance through bilateral or multilateral programs?	**Yes**	*Multilateral:* Kenya is a signatory to the Paris Agreement and has outlined ambitious Nationally Determined Contributions (NDCs) to reduce greenhouse gas emissions. These commitments often necessitate results-based financing to bridge the funding gap. Kenya has participated in Reducing Emissions from Deforestation and Forest Degradation (REDD+) programs, which typically involve results-based payments for emission reductions. Kenya has been a recipient of Global Environment Facility (GEF) funding, which often supports results-based projects in biodiversity conservation and climate change mitigation. *Bilateral partners:* **United Kingdom** The UK's Darwin Initiative and Department for International Development (DFID) fund biodiversity conservation projects in Kenya, with a focus on climate change adaptation and resilience, including those focused on marine and coastal ecosystems. **Germany** German Development Cooperation (GIZ) and KfW Development Bank support sustainable resource management and biodiversity conservation projects (BIOFIN program), as well as projects focused on renewable energy and climate change adaptation. **United States** United States Agency for International Development (USAID) and The Nature Conservancy (TNC) that fund various environmental programs and conservation projects in Kenya, including those focused on biodiversity conservation and climate change mitigation.

Are there any other relevant regulations, policies or instruments?	Yes	Although Kenya does not have a specific biodiversity offsetting regulation, several existing laws and policies provide a framework for biodiversity conservation and management that can be adapted for offsetting purposes. The following policies support the needs of this proposed project: 1. Constitution of Kenya, 2010: details the right to a clean and healthy environment, providing a basis for environmental protection and management. 2. Environmental Management and Coordination Act (EMCA), 1999: Establishes the National Environment Management Authority (NEMA) as the primary regulatory body for environmental protection and management. 3. Wildlife Conservation and Management Act, 2013: Provides for the protection, conservation, sustainable use, and management of wildlife in Kenya. 4. Fisheries Management and Development Act, 2016: Focuses on the conservation, management, and development of fisheries and other aquatic resources. It also empowers communities to co-manage fisheries resources, providing a basis for establishing community conservation areas within the marine environment. Additionally, it provides the framework for the establishment and operation of BMUs. This Act outlines the roles and responsibilities of BMUs, their relationship with the county and national governments, and the mechanisms for their involvement in fisheries management and development. 5. Forest Conservation and Management Act, 2016: Provides for the development and sustainable management of forest resources. 6. Water Act, 2016: Governs water resources management and protection.

		7. Community Land Act, 2016: Recognizes the rights of communities to manage their land and resources. 8. National Biodiversity Strategy and Action Plan (NBSAP): Outlines Kenya's overarching goals for biodiversity conservation. 9. International agreements: Kenya is a signatory to the Convention on Biological Diversity (CBD), which provides a global framework for biodiversity conservation.

3. Governance and Administration

3.1 Governance Structure

This project includes multiple villages: Vanga, Jimbo, Jasini and Kiwegu. These villages are represented within the Vanga Seagrass Project Committee which is the vehicle through which the project will be co-managed with ACES (who offer technical support and the prudential management of the project), and other organisations - including KMFRI, KeFS, and ENU.

The project participants decided to form a subcommittee within VBF CBO for the Vanga Seagrass Project after reviewing multiple options. This structure and integration within the VBF CBO will be used to ensure that the concerns and aspirations of the community and marginalised groups are consistently understood and addressed. The seagrass committee will benefit from the already established VBF CBO and its already established structures and processes (such as grievance mechanism, as illustrated in the Vanga Blue Forest 2021 PDD: “Grievances will be addressed by the VBF Committee in the first instance. If no resolution can be found, then respective village heads will be involved, following established practice, through the village barazas as stipulated in the VBF constitution.”) but will also be autonomous in their own benefit-sharing agreement and will make their own decisions surrounding the project and the community development fund.

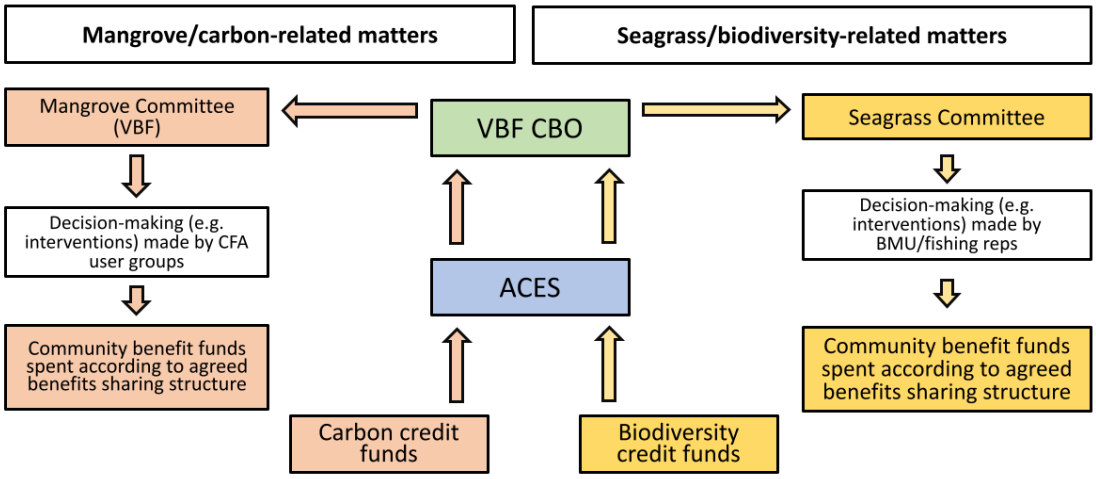

Figure 5. The Vanga Seagrass Project Committee within the already established VBF CBO, decided in a community consultative meeting in February 2024.

The Vanga Seagrass Committee composition was decided in a consultative meeting held in March 2024.

Photo above © Amy Mumo. Vanga BMU secretary, Mr. Ali Abdalla presenting one of the proposed seagrass committee structures during the committee composition consultative meeting held on the 15th of March 2024.

Photo above © Amy Mumo. Community members voting on seagrass committee structure during the meeting on the 15th of March 2024.

After deliberations and voting on the proposed committee structures, members present agreed on an alternative structure that ensures equal representation of each of the four villages, as well as that of marginalized/underrepresented groups.

Based on the agreed thirteen-member seagrass committee structure, the chairperson, youths and person with disability (PWD) will rotate between the four villages. Each village representation will also include one woman and one fisher. Members agreed on the following village allocation for the first committee elections; Vanga – chairperson; Jimbo – PWD; Kiwegu and Jasini - each village is to nominate one youth. These village allocations for the special groups are to be decided upon every committee election ensuring a full rotation for all the villages per group.

The first committee will have 4 representatives from Vanga (chairperson, fisher, woman, youth); Jimbo will be represented by 3 people (fisher, woman, PWD); Kiwegu and Jasini will also be represented by 3 people each (fisher, woman, youth). Committee elections were held in July 2024 in community meetings in each of the four villages.

This project was developed over multiple years, through consultative meetings and open forums with the local villages involved in this project, initially to develop a Locally Managed Marine Area in the same proposed project areas. Input from project participants will be managed through appraisal surveys which will be used by members of the implementation committees from each village to rank priority community projects as well as identify risks. Barazas, open community meetings, will be used to keep the project participants informed by the project coordinator and committee (for example, updates on income generated from the project). Display boards, and other culturally appropriate notification methods (e.g. community announcements via speakerphone) already

established and used for the Vanga Blue Forest mangrove conservation project, will also be used to make information relating to this project publicly accessible.

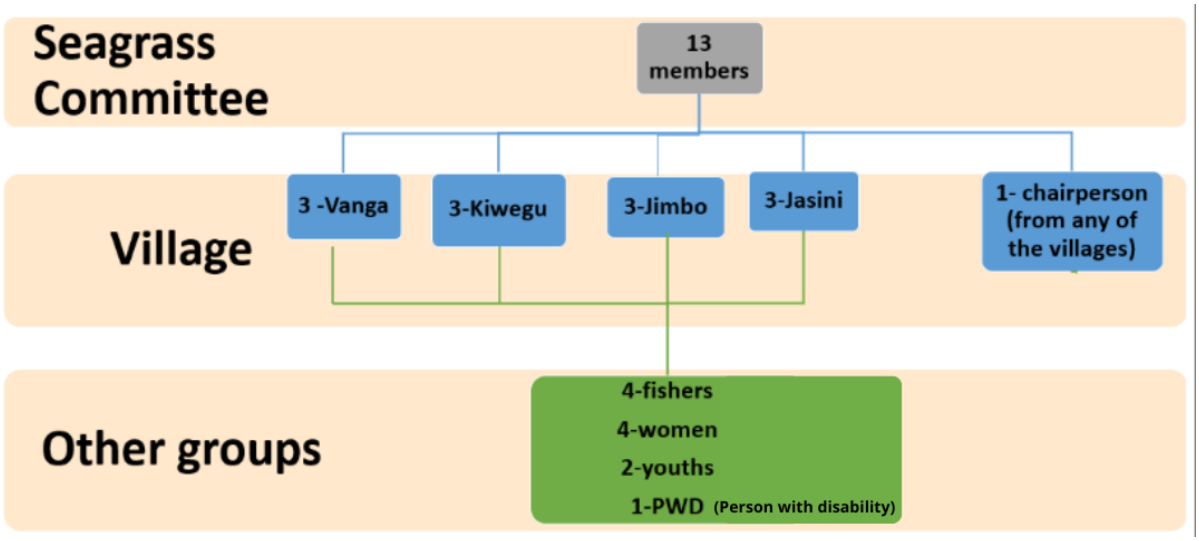

Figure 6. The Vanga Seagrass Project Committee structure, decided in a community consultative meeting in March 2024.

The Vanga Seagrass Committee and other project partners will work in close collaboration on this project, as illustrated by the organigram below.

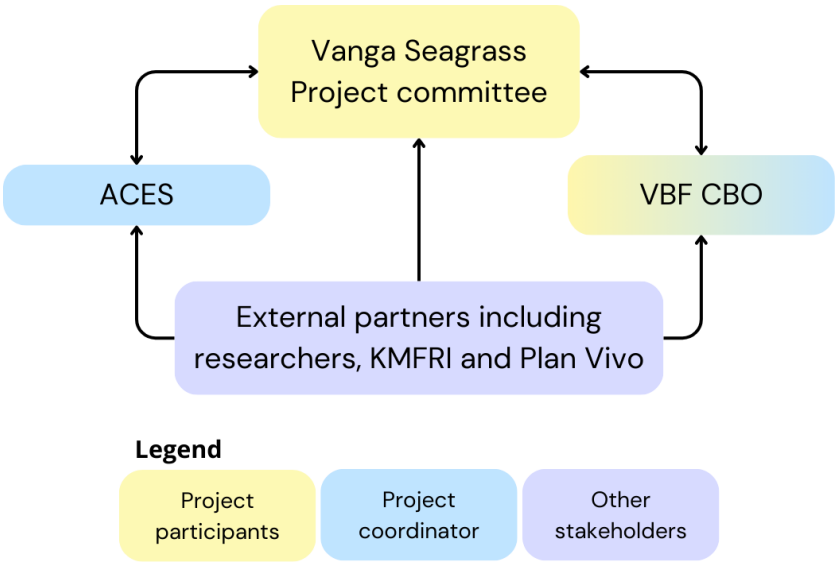

Figure 7. Organigram that demonstrates how the Project participants, Project coordinators and Other stakeholders will be involved in this project.

3.2 Legal and Regulatory Compliance

The authorities with overall responsibility for land and/or aquatic management and resource use within the project region are the Kenya Fisheries Service (KeFS). Evidence that they have been

informed of the project will be provided in Annex 5 soon; KeFS will lead on patrol and surveillance of project areas, issuance of appropriate land user certificates, and enforcement of management interventions, further explanation of how they will be engaged during project development will be provided soon.

A statement that the project will operate in full compliance with all national and international policies, laws and regulations is ready and awaiting signature from the relevant signatories. This will be provided soon.

3.3 Financial Plan

Financial support for the project development has been secured by multiple grants (including one philanthropic grant and from Ocean Risk and Resilience Alliance (ORRAA)); these grants will support the academic and tactical outputs of this project as well as the initial operation of the managed areas. However, funding for biodiversity monitoring needs to be secured to sufficiently cover the costs associated with this; project coordinators welcome partnership with Plan Vivo and Pivotal as part of this co-learning and iterative experience in developing this project.

Once issued from Plan Vivo, ACES will be responsible for marketing and selling the Plan Vivo Biodiversity Certificates (PVBCs) from this project. Once these are sold, the income will be split 60/40 in favour of the in-country partners and project participants VBF CBO who will receive at least 60% of the total income from the PVBC sales.

ACES will receive 40% of PVBC income, this will be used to cover staff and operation costs within ACES to allow for the sustainability of the organisation and its activities relevant to the project.

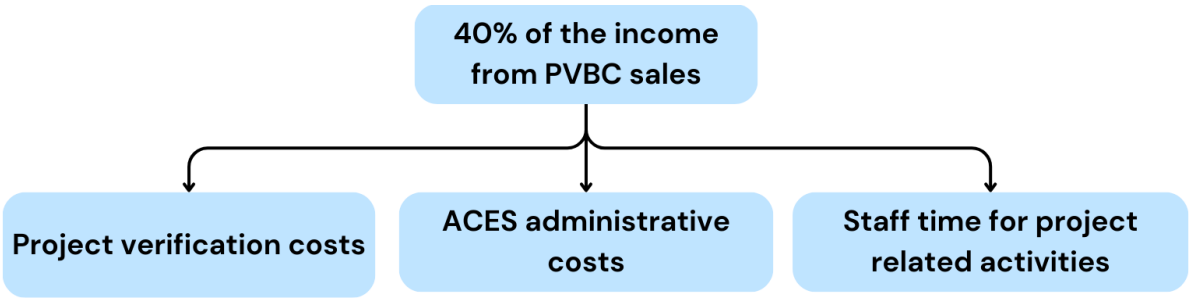

Figure 8. An outline of the intended use of 40% of the income from the sale of the PVBCs issued from this project.

The 60% to VBF CBO will be for the Vanga Seagrass Project Committee and will be distributed through the benefit sharing has been agreed through stakeholder consultation. Project activities and relevant administration costs will be covered by the income to ensure the sustainability of the project. The income will be split across the four involved villages, each village will use their share to implement their own community development projects. Income splits between the villages were decided in relation to population size of each village community. These projects will be determined by consultations involving the project coordinator, where community priorities and costings will be determined and then presented at barazas. The project coordinator and the relevant committee will ensure that the money is spent on the agreed project and the project are implemented and completed in a timely manner.

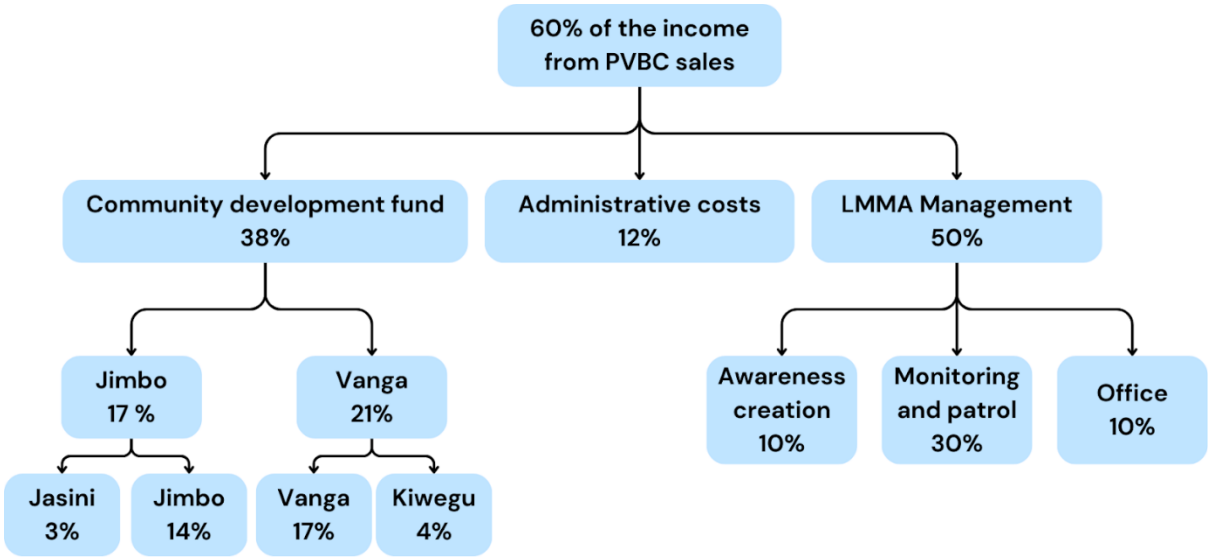

Figure 9. A suggested distribution of the use of 60% of the income from the sale of the PVBCs issued from this project.

Note that some of the costs of the activities defined above for both the 40% and 60% of the income from the sale of the PVBCs can vary by year. If possible, a larger allocation from the sales will be allocated to the community development fund. Hence the percentages shown in this diagram are illustrative only and could vary from year to year.

4. Annexes

Annex 1 – Project Boundaries and Habitat Types

Geospatial data files for project region and project area boundaries will be provided upon request from Plan Vivo. Please note that the maps will be changed soon, project areas will remain the same, but the project region may change.

Annex 2 – Registration Certificate

Project coordinators ACES and VBF CBO registration certificates are included below, Please also find Vanga and Jimbo BMUs certificates:

- The Association for Coastal Ecosystem Services

THIS DOCUMENT IS IMPORTANT
PLEASE RETAIN IT FOR YOUR RECORDS
Please ensure all charity trustees are aware of this document

OSCR
Office of the Scottish Charity Regulator

Professor Mark Huxham
The Association For Coastal Ecosystem Services
[redacted]

Your ref:
Our ref: RS/STA/13-0060

02 May 2013

Dear Professor Huxham

Decision on your application for Incorporation as a Scottish Charitable Incorporated Organisation (SCIO)

I am pleased to tell you that your application for incorporation as a Scottish Charitable Incorporated Organisation (SCIO) has been successful. The Office of the Scottish Charity Regulator (OSCR) is satisfied that the organisation meets the charity test and the legal requirements for being a SCIO, and has entered it in the Scottish Charity Register. This means it is now is an incorporated body having charitable status under the Charities and Trustee Investment (Scotland) Act 2005.

The details of your charity's entry in the Register are set out below.
Please check these details and let us know of any errors.

Your SCIO's registered name is:	**The Association For Coastal Ecosystem Services**
Your charity number is:	**SC043978**
Your SCIO was registered on:	**30 April 2013**
Your SCIO's 'known as' name is:	
Your principal contact address is:	[redacted]
Your charitable purposes are:	**A - the prevention or relief of poverty** **B - the advancement of education** **G - the advancement of the arts, heritage, culture or science** **M - the advancement of**

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web: www.oscr.org.uk

- Vanga BMU

Serial No.043

THE REPUBLIC OF KENYA
STATE DEPARTMENT OF FISHERIES

CERTIFICATE OF REGISTRATION FOR BEACH MANAGEMENT UNIT

Name of the Beach Management Unit: VANGA

Name(s) of landing site(s) covered by BMU: VANGA/SUB LOCATIO/VILLAGE/MARINE WATERS

Postal Address of the BMU: P. O. BOX 115 (80402) LUNGA LUNGA -VANGA

Registration No.: FISH/BMU/COAST /REG. NO. 043 Date: 20TH MAY, 2013

Physical Location of the offices of Beach Management Unit:

County: KWALE Constituency: LUNGA LUNGA

Ward: VANGA/LUNGA LUNGA

This is to certify that VANGA Beach Management Unit is duly registered for the purposes of management and development of fishery resources within its area(s) of jurisdiction as described in section 5 (1) of The Fisheries (Beach Management Unit) Regulations, 2007 and in accordance with provisions of the Fisheries Act Cap 378 and any regulation made thereunder.

Given under my hand and the seal of the State Department of Fisheries this 20th day of May, 2013

DIRECTOR OF FISHERIES

Republic of Kenya

MINISTRY OF LABOUR, SOCIAL SECURITY AND SERVICES

Certificate No. 42301

Certificate of Registration of Community Based Organization (CBO)

This is to Certify that

VANGA DEVELOPMENT FORUM C.B.O
Group Name / Project

EAC/L&SP/DSD/LUNG/42301/2018
Registration No.

LUNGALUNGA
Division

6/7/2018
Date of Registration

VANGA
Sub-location / Ward

LUNGALUNGA
Constituency

LUNGALUNGA
Sub County

is registered with the office of the Sub County Social Development Officer (SCSDO) as a Community Based Organization (CBO)

VANGA
Location

KWALE
County

MALALO S.MWAKAZO
For: Sub County Social Development Committee

6/7/2018
Date of Issue

Note: The Contents of this Certificate should not be erased, altered or defaced in any way.

- Jimbo BMU

Certificate No. 308890

Republic of Kenya

MINISTRY OF EAST AFRICAN COMMUNITY,
LABOUR AND SOCIAL PROTECTION

Certificate of Registration of Self-help Group/Project

This is to Certify that

JIMBO BEACH MANAGEMENT UNITY (REPL NO. 40564/2010)
Group Name / Project

EACL&SP/DSD/MSAMB/LUNG/308890/2018
Registration No.

6/11/2018
Date of Registration

VANGA
Sub-location / Ward

LUNGA LUNGA
Consituency

VANGA
Location

LUNGA LUNGA
Sub County

LUNGA LUNGA
Division

KWALE
County

is registered with the Department of Social Development Officer

Name HAWAY ADAN Signature
County Coordinator/ Sub County Social Development Officer

6/11/2018
Date of Issue

Note: The Contents of this Certificate should not be erased, altered or defaced in any way.

Serial No.046

THE REPUBLIC OF KENYA
STATE DEPARTMENT OF FISHERIES

CERTIFICATE OF REGISTRATION FOR BEACH MANAGEMENT UNIT

Name of the Beach Management Unit: JIMBO

Name(s) of landing site(s) covered by BMU: SIMIJU, KIGOMENI, KISIMA,BAAZO, JIBWENI, SII

Postal Address of the BMU: P. O. BOX 115 (80402) LUNGA LUNGA

Registration No.: FISH/BMU/COAST /REG. NO. 046 Date: 20TH MAY, 2013

Physical Location of the offices of Beach Management Unit:

County: KWALE Constituency: LUNGA LUNGA

Ward: VANGA/ LUNGA LUNGA

This is to certify that JIMBO Beach Management Unit is duly registered for the purposes of management and development of fishery resources within its area(s) of jurisdiction as described in section 5 (1) of The Fisheries (Beach Management Unit) Regulations, 2007 and in accordance with provisions of the Fisheries Act Cap 378 and any regulation made thereunder.

Given under my hand and the seal of the State Department of Fisheries this 20th day of May, 2013

.....
DIRECTOR OF FISHERIES

- Vanga Blue Forest CBO

Certificate No. 49219

Republic of Kenya

MINISTRY OF EAST AFRICA COMMUNITY, LABOUR AND SOCIAL PROTECTION

DEPARTMENT OF SOCIAL DEVELOPMENT

Certificate of Registration of Community Based Organization (CBO)

This is to Certify that

VANGA BLUE FOREST COMMUNITY BASED ORGANIZATION- CBO

Group Name / Project

EAC & SP /DSD /LUNG/CBO/49219/2019 — Registration No.

LUNGALUNGA — Division

4/11/2019 — Date of Registration

VANGA — Sub-location / Ward

LUNGALUNGA — Constituency

LUNGALUNGA — Sub County

VANGA — Location

is registered with the Department of Social Development Office as a Community Based Organization (CBO)

KWALE — County

GEOFFREY OTUNDO

Name

County / Sub County Social Development Officer

Signature

4/11/2019

Date of Issue

Note: The Contents of this Certificate should not be erased, altered or defaced in any way.

KENYA VISION 2030

Annex 3 – Exclusion List

The exclusion list has been completed by responding 'Yes' if the activity is included in the project and 'No' if the project does not include the activity.

Activities	**Included in Project ('Yes' or 'No')**
Any project activities leading to or requiring the destruction [1] of critical habitat [2] or any forestry project which does not implement a plan for improvement and/or sustainable management.	No
Any activity which could be associated with the significant impairment of areas particularly worthy of protection of cultural heritage (without adequate compensation in accordance with international standards).	No
Trade in animals, plants or any natural products not complying with the provisions of the CITES/Washington convention [3].	No
Illegal, harvesting or trading in any wildlife resources.	No
Destructive fishing methods or drift net fishing with a net more than 2.5 km in length, explosives and/or poison.	No
Large-scale commercial logging operations for use in primary tropical moist forest.	No
Production or trade in wood or other forestry products other than from sustainably managed forests [4].	No

Exploitation of diamond mines and marketing of diamonds where the host country has not adhered to the Kimberley Process, and exploitation of other conflict minerals [5]	No
Activities involving harmful or exploitative forms of forced labour, [6] harmful child labour [7], modern slavery and human trafficking [8].	No
Projects that include involuntary physical displacement and/or forced eviction.	No
Production or activities that encroach on lands owned, or claimed or occupied by Indigenous Peoples, without full documented Free, Prior and Informed Consent (FPIC) of such peoples [9].	No
Harmful and unsafe production, use, sale or trade of pharmaceuticals, pesticides/herbicides, ozone layer depleting substances [10], and other toxic [11] or dangerous materials such as asbestos or products containing PCB's [12], wildlife or products regulated under CITES, including all products that are banned or are being progressively phased out internationally	No
Production or trade of arms, ammunition, weaponry, controversial weapons, or components thereof (e.g., nuclear weapons and radioactive ammunition, biological and chemical weapons of mass destruction, cluster bombs, anti - personnel mines, enriched uranium).	No
Procurement and use of firearms.	No
Provision of finances to military institutions involved in conservation or security activities.	No
Production or trade of strong alcohol intended for human consumption or other alcoholic beverages (excluding beer and wine).	No
Production or trade of tobacco and other drugs	No
Gambling, gaming establishments, casinos or any equivalent enterprises and undertaking [13].	No
Any trade related to pornography, prostitution or sexual exploitation of any form.	No
Production or trade in radioactive material. This does not apply to the procurement of medical equipment, quality control equipment or other application for which the radioactive source is insignificant and/or adequately shielded	No
Production or trade in unbound asbestos. This does not apply to the purchase or use of cement linings with bound asbestos and an asbestos content of less than 20%.	No
Production, trade, storage, or transport of significant volumes of hazardous chemicals, or commercial scale usage of hazardous chemicals. Hazardous chemicals include gasoline, kerosene, and other petroleum products.	No
Transboundary trade in wastes, except for those accepted by the Basel Convention and its underlying regulations [14].	No
Any activity leading to an irreversible modification or significant displacement of an element of culturally critical heritage [15].	No
Production and distribution, or investment in, media that are racist, antidemocratic or that advocate discrimination against a part of the population.	No
Projects involving the planting or introduction of invasive species	No
Projects that increase the dependency of primary participants and other stakeholders on fossil fuels.	No

Notes:

[1] Destruction means (1) the elimination or severe reduction in the integrity of a habitat/area caused by a major and long-term/prolonged change in land-use or water resources or (2) the modification of a habitat such that this habitat's ability to fulfil its function/ role is lost.

[2] The term critical habitat encompasses natural and modified habitats that deserve particular attention. This term includes (1) spaces with high biodiversity value as defined in the IUCN's classification criteria, including, in particular, habitats required for the survival of endangered species as defined by the IUCN's red list of threatened species or by any national legislation; (2) spaces with a particular importance for endemic species or whose geographical range is limited; (3) critical sites for the survival of migratory species; (4) spaces welcoming a significant number of individuals from congregatory species; (5) spaces presenting unique assemblages of species or containing species which are associated according to key evolution processes or which fulfil key ecosystem services; (6) and territories with socially, economically or culturally significant biodiversity for local communities. Primary forests or high conservation value forests must also be considered as critical habitats.

[3] https://cites.org/eng/disc/text.php

[4] Sustainably managed forests are forests managed in a way that balances ecological, economic and socio-cultural needs.

[5] Conflict minerals, including tin, tungsten, tantalum and gold, can be used to finance armed groups, fuel forced labour and other human rights abuses, and support corruption and money laundering. See the EU Regulation on conflict minerals: https://policy.trade.ec.europa.eu/development-and-sustainability/conflict-minerals-regulation/regulation-explained_en

[6] Forced labour means all work or service, not voluntarily performed, that is extracted from an individual under threat of force or penalty.

[7] Harmful child labour means the employment of children that is economically exploitive, or is likely to be hazardous to, or to interfere with, the child's education, or to be harmful to the child's health, or physical, mental, spiritual, moral, or social development. Employees must be at least 14 years of age, as defined in the ILO's Declaration on the Fundamental Principles and Rights at Work (C138 – Minimum Age Convention, Article 2), unless local laws require compulsory school attendance or a minimum working age. In such circumstances, the highest age requirement must be used.

[8] Modern slavery is comprised two key components: forced labour and forced marriage. These refer to situations of exploitation that a person cannot leave or refuse due to threats, violence, deception or coercion. (https://www.ilo.org/wcmsp5/groups/public/---ed_norm/---ipec/documents/publication/wcms_854733.pdf)

[9] https://www.fao.org/indigenous-peoples/our-pillars/fpic/en/

[10] Any chemical component which reacts with, and destroys, the stratospheric ozone layer leading to the formation of holes in this layer. The Montreal Protocol lists Ozone Depleting Substances (ODS), their reduction targets and deadlines for phasing them out.

[11] Including substances included under the Rotterdam Convention, Stockholm Convention and WHO "Pharmaceuticals: Restrictions in Use and Availability".

[12] PCBs (polychlorinated biphenyls) are a group of highly toxic chemical products that may be found in oil-filled electrical transformers, capacitors and switchgear dating from 1950 to 1985.

[13] Any direct financing of these projects or activities involving them (for example, a hotel including a casino). Urban improvement plans which could subsequently incorporate such projects are not affected.

[14] Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their disposal (1989).

[15] "Critical cultural heritage" is considered as any heritage element recognised internationally or nationally as being of historical, social and/or cultural interest.

Annex 4 – Environmental and Social Screening

The table has been completed by answering each risk question and, where relevant, details have been included of any activities that will be carried out to better understand or mitigate potential risks. This has been provided separately.

Annex 5 – Notification of Relevant Authorities

Correspondence addressed to the authorities with overall responsibility for land management and greenhouse gas emissions assessment within the project region informing them of the project will be provided soon.

Appendix 1 – Criteria for Key Biodiversity Areas

A. Threatened biodiversity		
A1 Threatened species		Assessment parameters
A1a	≥0.5% of global population size and ≥5 reproductive units (RU) of a CR/EN species	(i) no. of mature individuals (ii) area of occupancy (iii) extent of suitable habitat (iv) range (v) no. of localities (vi) distinct genetic diversity
A1b	≥1.0% of global population size and ≥10 RU of a VU species	
A1c	≥0.1% of global population size and ≥5 RU of a species listed as CR/EN due only to past/current decline [= Red List A1, A2, A4 only]	
A1d	≥0.2% of global population size and ≥10 RU of a species listed as VU due only to past/current decline [= Red List A1, A2, A4 only]	
A1e	Effectively the entire population size of a CR/EN species	
A2 Threatened ecosystem types		
A2a	≥5% of global extent of a CR or EN ecosystem type	
A2b	≥10% of global extent of a VU ecosystem type	
B. Geographically restricted biodiversity		
B1. Individual geographically restricted species	≥10% of global population size and ≥10 RU of any species	(i) no. of mature individuals (ii) area of occupancy (iii) extent of suitable habitat (iv) range (v) no. of localities (vi) distinct genetic diversity
B2. Co-occurring geographically restricted species	≥1% of global population size of each of a number of restricted range species in a taxonomic group: ≥2 species or 0.02% of the total number of species in the taxonomic group, whichever is larger	
B3. Geographically restricted assemblages		
B3a	≥0.5% of global population size of each of a number of ecoregion-restricted species in a taxonomic group: ≥5 species or 10% of the species restricted to ecoregion, whichever is larger	(i) no. of mature individuals (ii) area of occupancy (iii) extent of suitable habitat (iv) range (v) no. of localities
B3b	≥5 RU of ≥5 bioregion-restricted species or ≥5 RU of 30% of the bioregion-restricted species known from the country, whichever is larger	
B3c	Site is part of the globally most important 5% of occupied habitat for ≥5 species in the taxonomic group	(i) relative density of mature individuals (ii) relative abundance of mature individuals
B4. Geographically restricted ecosystem types		
	≥20% of the global extent of an ecosystem type	
C. Ecological integrity		
	Site is one of ≤2 per ecoregion with wholly intact ecological communities	composition and abundance of species and interactions
D. Biological processes		
D1. Demographic aggregations		
D1a	≥1% of global population size of a species, over a season, and during ≥1 key stage in life cycle	no. of mature individuals
D1b	Site is among largest 10 aggregations of the species	no. of mature individuals
D2. Ecological refugia	≥10% of global population during periods of environmental stress	no. of mature individuals
D3. Recruitment sources	Produces propagules, larvae or juveniles maintaining ≥10% of global population size	no. of mature individuals
E. Irreplaceability through quantitative analysis		

Appendix 2 – Criteria for Important Plant Areas

Sub-criterion	Threshold
(A) Threatened species	
A(i) Site contains one or more **globally threatened** species	Site known, thought or inferred to contain ≥**1%** of the global population AND/OR ≥**5%** of the national population OR the **5 "best sites"** for that species nationally, whichever is most appropriate
A(ii) Site contains one or more **regionally threatened** species	Site known, thought or inferred to contain ≥**5%** of the national population, OR the **5 "best sites"** for that species nationally, whichever is most appropriate
A(iii) Site contains one or more **highly restricted endemic** species that are potentially threatened	Site known, thought or inferred to contain ≥**1%** of the global population AND/OR ≥**5%** of the national population, OR the **5 "best sites"** for that species nationally, whichever is most appropriate
A(iv) Site contains one or more **range restricted endemic** species that are potentially threatened	Site known, thought or inferred to contain ≥**1%** of the global population AND/OR ≥**5%** of the national population, OR the **5 "best sites"** for that species nationally, whichever is most appropriate
(B) Botanical richness	
B(i) Site contains a **high number of species** within **defined habitat or vegetation types**	For each habitat or vegetation type: up to 10% of the national resource can be selected within the whole national IPA network OR the **5 "best sites"** nationally, whichever is the most appropriate
B(ii) Site contains an **exceptional number of species of high conservation importance**	Site known to contain ≥**3%** of the selected national list of species of conservation importance OR the **15 richest sites** nationally, whichever is most appropriate
B(iii) Site contains an **exceptional number of socially, economically or culturally valuable species**	Site known to contain ≥**3%** of the selected national list of socially, economically or culturally valuable species OR the **15 richest sites** nationally, whichever is most appropriate
(C) Threatened habitat	
C(i) Site contains **globally threatened or restricted** habitat/vegetation type	Site known, thought or inferred to contain ≥**5%** of the national resource (area) of the threatened habitat type OR site is among the best quality examples required to collectively prioritise **20–60%** of the national resource OR the **5 "best sites"** for that habitat nationally, whichever is the most appropriate
C(ii) Site contains **regionally threatened or restricted** habitat/vegetation type	Site known, thought or inferred to contain ≥**5%** of the national resource (area) of the threatened habitat type OR site is among the best quality examples required to collectively prioritise **20–60%** of the national resource OR the **5 "best sites"** for that habitat nationally, whichever is the most appropriate
C(iii) Site contains **nationally threatened or restricted** habitat/vegetation type, AND/OR habitats that have **severely declined in extent** nationally	Site known, thought or inferred to contain ≥**10%** of the national resource (area) of the threatened habitat type OR site is among the best quality examples required to collectively prioritise up to **20%** of the national resource OR the **5 "best sites"** for that habitat nationally, whichever is most appropriate