

PV Nature

Plan Vivo Project Design Document

Vanga Seagrass Project

Vanga Bay, Kwale County, Kenya

Version V1.2

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Developed by:

Project Developer: Vanga Seagrass Project Committee (VSPC) sitting within Vanga Blue Forest (VBF) Community-based Organisation (CBO)

Coordinating Partner: Association for Coastal Ecosystem Services (ACES)

Technical Advisor and Host-Institution: Kenya Marine and Fisheries Research Institute (KMFRI)



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OVERVIEW

Project Title:	Vanga Seagrass Project (VSP)
Location:	The project region is located in the transboundary conservation area between Southern Kenya and Northern Tanzania. As a result, Vanga, Jimbo and Kiwegu villages are within Kenya and Jasini falls across the border of Kenya and Tanzania. The project is managed from the Vanga Blue Forest offices in Vanga town and both project areas lie within Vanga Bay, Kenya, making the project Kenyan-based. Kenya, Kwale County, Lungalunga Sub-county, Vanga, Jimbo, Jasini and Kiwegu villages, Vanga Bay.

Project Description:	This project aims to protect biodiversity within important seagrass meadows in Vanga Bay. Vanga Bay supports various species of culturally and commercially important fish and other marine animals (including 6 International Union for Conservation of Nature (IUCN) Red List species) including dugongs and sea turtles. Vanga Bay contains 9 seagrass species and supports around 14% of all seagrass cover in Kenya (Kenya Wildlife Service 2013, Govt. of Kenya, 2017; Harcourt et al., 2018). There is very little published information on seagrass in Africa, although much anecdotal information suggests serious declines. Kenya is an exception to this data deficiency, with researchers linked to project having published some of the best quantitative information from any African country. Seagrass in Kenya have been shown to decline at rates of 1.6% yr⁻¹ in 2016 but in 2020 the rate of decline reducing to 0.26% yr⁻¹ with main agents of change being illegal activities, sedimentation and boating activities demonstrates that seine netting is a major threat (Harcourt et al., 2018; Mwikamba et al., 2024; Lang'at et al., 2026). 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 recovery of the biodiversity and seagrass.
Project Area:	Total project area is 225ha of intertidal and subtidal seagrasses located in Mwarembo-Spaki (168ha) and Jibweni-Bazo (56.7ha) Co-Management Areas (CMA) in Vanga Bay, also referred to as a Locally Managed Marine Area (LMMA) or tengefu. Vanga Bay (4°25'S, 39°17'E) is located at the Southernmost tip of Kenya approximately 23 km North of the Tanzanian border and 118 km South of Mombasa Island. Jibweni-Bazo site is adjacent to the extensive mangrove forest along the waterline 6.0 km from the mouth of River Uмба and approximately 4 km from Mwarembo-Spaki site. Mwarembo-Spaki site is further out from the shore with fringing mangroves between the site and the shoreline located approximately 2.5 km from the mouth of River Uмба and 6.0 km to the mouth of River Mwena. Plans for expansion: There is the possibility of expanding this project within surrounding CMAs co-managed by Vanga and Jimbo Beach Management Units (BMUs), which will be explored in the future.
Project Coordinator:	Vanga Seagrass Project Committee (VSPC) sitting within Vanga Blue Forest (VBF) Community-based Organisation (CBO). Mwinyi Hassan Mohamed, VSP Project Coordinator: mwinyivangaseagrassproject@gmail.com

	With support from the Association for Coastal Ecosystem Services. Amelia Allerton, ACES Biodiversity Lead: amelia@aces-org.co.uk
Project Participants:	Type I project participants Local communities in Kiwegu, Vanga Jimbo and Jasini villages in southern Kenya, with population of ~24,616 (KNPHC 2019), Vanga Blue Forest (VBF) Community-Based Organisation (CBO), Vanga and Jimbo Beach Management Units (BMUs) Secondary stakeholders Stakeholders in this project include the Association for Coastal Ecosystem Services (ACES), Kenya Marine Fisheries Research Institute (KMFRI), Kenya Fisheries Service (KeFS), Kenya Wildlife Service, County Government of Kwale, Edinburgh Napier University (ENU) Plans for expansion: Currently there are no plans to expand the project participants as the expansion of the project area would not require this. Any expansions of the project area (marine) will still reside within either Vanga or Jimbo BMU jurisdiction as they are the BMUs with oversight over Vanga Bay. As a result, the fishing villages who interact with the expanded project area will remain the same as those currently listed.
Project Intervention(s):	The proposed conservation project interventions are: 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 for gear-restricted fishing activities. Gear restriction (Protection): Only legal and 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. Enforcement of restrictions and closures (Protection): Boat patrols will take place 4 times a month, with a record of all patrols kept. 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.
Project Period:	We aim to issue Plan Vivo Biodiversity Certificates (PVBCs) from early 2028. This will be an ongoing long-term project with initial crediting period of 30 years which may be renewed.
Expected Biodiversity Benefit(s):	Conservation of the seagrass habitat is expected to benefit biodiversity by: • Improved fish nursery habitat; there is currently high larvae concentration but low fish populations which show that fish are being overfished when they reach the size to fit in nets, demonstrating potential for high abundance in the area (Ngisiange et al. (2024)). • Increased fish biomass and potential spillover into fishing grounds. • Increased abundance of predatory fish will reduce sea urchin overgrazing on seagrass. Sea urchins were recently shown to have a high density in Vanga, one study showed that the density across the Southern Kenyan coast was highest in Vanga (Awadh et al., 2024). • Improved habitat for megafauna (e.g. turtles and dugongs). Awadh et al., (2024) found that Vanga has the highest level of human activities that negatively affect seagrass meadows, threatening dugong survival. • Improved resilience and adaptation. Biodiverse environments support complex ecosystems, improving resilience.
Expected Environmental Benefit(s):	Protecting seagrass ecosystems is expected to result in natural recovery of the meadows which will deliver climate benefits as seagrasses are an efficient carbon sink. Productive seagrass habitats with dense vegetation are also effective at reducing coastal erosion and can slow down water turbidity, sedimentation, sediment suspension and water flow during storms (van Katwijk et al., 2010). Seagrass has been identified as a nature-based solution as it can trap and stabilise sediments, improving water clarity, oxygenating water through photosynthesis and can removing some nutrients from the

	water column. Healthy seagrass beds are associated with improved water quality, which could be a benefit seen in the project areas through the protection of these vital habitats. Moreover, this project and the neighbouring mangrove conservation project, Vanga Blue Forest (VBF), will work in synergy to strengthen ecological health, increase ecosystem service benefits and enhance blue carbon benefits on local and regional scales.
Expected Socioeconomic Benefit(s):	The sale of the PVBCs will provide a secure and long-term funding stream for community development projects. The project interventions will support the livelihoods of the fishers by protecting a vital nursery site for many commercially important marine species, leading to population recovery. In time, a 'spillover effect' into local fishing grounds could be seen, potentially increasing the size of catches (both in number and biomass), this would improve the economics of local fishers. By protecting and allowing recovery of natural ecosystems such as seagrass beds, local ecosystem services are also conserved and improved. Other socioeconomic benefits could include; increased protection from storms, improved water quality which could also improve quality of fish consumed, improved access to natural ecosystems for physical, mental and cultural health 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.
Version:	1.2
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Validation Date:	Enter date of validation site visit.

1 General Information

1.1 Project Rationale

The proposed project areas cover the seagrass meadows of Jibweni-Bazo and Mwarembo-Spaki off the coast of the villages of Jimbo and Vanga respectively. These areas are important wildlife habitats and support many commercially important fish species, contributing to the local artisanal economy. 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 part of the Transboundary

Conservation Area (TBCA) between Southern Kenya and Northern Tanzania and are adjacent to the established mangrove carbon offsetting project Vanga Blue Forest (VBF).

These project areas are of biodiversity conservation importance as the project region contains seagrass species (*Zostera capensis*, IUCN Redlist: Vulnerable) and several animal species listed on the IUCN Red List Particularly, green turtles (*Chelonia mydas*, IUCN Redlist: Endangered) frequent the Vanga-Shimoni area and are strongly associated with areas dominated by dense seagrass beds and/or nearshore reefs (Wabnitz et al., 2020). Dugongs (*Dugong dugon*, IUCN Redlist: Vulnerable with the East African population listed as critically endangered.) are present along the East African coast and flourishing seagrass habitats have the potential to support their recovery (Awadh et al., 2024). Fish larvae presence in the seagrass is high (Ngisiange et al. 2024) indicating strong recovery of the fish population in the project areas. Sea urchin (*Echinoidea*) overgrazing is negatively affecting vital seagrass in the project areas as predators of urchins (invertivore fish) have been overfished. The project is expected to help rebalance the ecosystem and support seagrass recovery across Vanga Bay.

Adjacent areas of conservation interest include VBF, Kisite-Mpunguti Marine National Park and Reserve, and Diani-Chale Marine Reserve (gazetted but not operational due to limited restriction enforcement) in Kwale County.

Project areas were proposed by representatives of the Vanga and Jimbo BMUs in agreement with the fishing community to protect the fishery resources from further decline by limiting fishing activity. The local communities understand that fish are present in seagrass areas, but not necessarily aware of the other ecosystem co-benefits that protecting seagrass ecosystems provides. Examples of co-benefits include protection from coastal erosion and storms, (especially when working in synergy with the mangroves protected through VBF), increased resilience and adaptation to a changing climate and ocean conditions and reestablishing lost carbon sinks through carbon sequestration. Seagrass is also 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 is operated in collaboration with 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 that this project will offer co-learning experience for other projects. The VBF team's experience in communicating blue carbon conservation benefits to audiences and stakeholders will assist in bringing visibility to the project. Key project benefits include a sustainable and replicable finance stream for the community through a certified credit-generating framework, and protection and restoration of a critical coastal ecosystem and its associated resources. The proposed project areas cover the seagrass meadows of Jibweni-Bazo and Mwarembo-Spaki off the coast of the villages of Jimbo and Vanga respectively. These areas are important wildlife habitats and support many commercially important fish species, contributing to the local artisanal economy. 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 part of the Transboundary Conservation Area (TBCA) between Southern Kenya and Northern Tanzania and are adjacent to the established mangrove carbon offsetting project Vanga Blue Forest (VBF).

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1.2 Justification for Conservation Projects (Not applicable for Restoration Projects)

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: 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 $\geq 3\%$ of the selected national list of socially, economically or culturally valuable species OR the 15 richest sites nationally, whichever is most appropriate	Kenya contains 399 km ² of seagrass cover (GoK 2026; Langat et al., 2026) and Vanga Bay contains around 14% (~32km ²) of all seagrass in Kenya (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 $\geq 10\%$ of the national resource (area)	Vanga Bay contains around 14% (~32km ²) of all seagrass in Kenya (317.1 $\pm$ 27.2 km ²). (Harcourt et al., 2018). Project region contains <i>Zostera capensis</i> , classified as a vulnerable seagrass species under the IUCN Red List: " <i>Zostera capensis</i> cover in Vanga" (Awadh et al., 2024). Furthermore, seagrasses in Kenya are declining at a rate of 0.26% annually (Harcourt et al., 2018) (Lang'at et al., 2026).

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1.3 Project Interventions

Table 2 outlines VSPs project interventions and the expected benefits.

Table 2 – Project Interventions

Intervention Type	Project Intervention	Expected Benefits
Conservation (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 gear-restricted fishing activities. February to March are the end of the Northeast monsoon season in Kenya and management interventions have the LMMA closed during the remainder of the Northeast Monsoon season and all of the Southeast Monsoon season when seas are rougher. Management interventions close the fishing ground during months where fishing pressure on the seagrass beds would be highest to increase the impact of protection. During the months of February-March, fishers prefer to fish on the far side of the reef and the seagrass beds are not a traditional fishing ground at this time of the year. During the open season of February-March, fishing will be restricted to 8-11am only. This is so that even when the fishing grounds are open, impact will be kept to a minimum. These management interventions were decided during the community	Management interventions will significantly reduce fishing pressure in the project areas as well as enforce the restrictions of destructive gears. Expected benefits include the establishment of fish and invertebrate refugia for the replenishment and restoration of fauna in this region. Anticipated long-term benefits include sustainable fish stocks within Vanga Bay due to a 'spillover effect' from the project areas. This is expected to result in the reduction of fishing effort for the local fisher community and an increase in income due to increased fish stocks and biomass. Environmental impacts include 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

	consultation process discussed in more detail in the PIN and later in this PDD. As a result, we do not foresee any concerns surrounding the closures as there are alternative nearshore fishing grounds both within the BMUs and the wider Joint Co-Management Area (JCMA) and all interventions have been decided and agreed upon by representatives of the fishing community themselves.	sustainable management of seagrass can be beneficial for fish stocks. Protection will allow for passive restoration, encouraging natural regeneration of this ecosystem within the project areas and improving local biodiversity.
	Enforcement of restrictions; boat patrols to be carried out and records of patrols kept. Actions to be taken for 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 Fisheries Act (2016) and BMU bylaws 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.	Although seine netting is illegal in Kenya, this activity is common within Vanga Bay and elsewhere on the coast (Mwikamba et al., 2024). 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 fishers. By enacting these interventions initially on a small scale (within the project areas), this should act as a trial and incentive for expanding enforcement of illegal gear restrictions across Vanga Bay in the future. Enforcement of these interventions are required to ensure that benefits are achieved. Although the participating communities have been part of the project design from the very beginning and are keen to protect their seagrass, it cannot be assured that people would not continue to fish in these areas consistently. Moreover, in the two project sites there were previous failed coral closures from different project developers - to the best of our knowledge this was due to lack of

		community buy-in. As a result, enforcement interventions were agreed through community consultation to ensure that management interventions are being adhered to and benefits will be seen. In addition, there are other user groups who we cannot directly engage with who fish illegally in Vanga Bay, enforcement will ensure they do not fish within the project areas, reducing negative impacts on the project areas - this is discussed in more detail later in the Land Management Plans section.
Conservation (Protection)	Gear restriction; only legal and artisanal fishing gear allowed (e.g. Hook and line, handline, basket traps, fence traps). The 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 in the future for ease of identification by the fishers, as well as conducting routine patrols with the local KeFS office to enforce management interventions.	This intervention will provide long-term benefits and increases in biodiversity will transcend beyond the project lifetime by increasing awareness of more sustainable fishing methods and raising awareness on how the sustainable management of seagrass can be beneficial for fish stocks. Protection of project areas will enforce management interventions. Routine patrols will ensure 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 fishers to more sustainable fishing practices once they have experienced the positive impacts of enhanced fishery resources and decreased disturbance of project areas - an increased colonisation of seagrass species which in
	Prohibition of certain activities; gleaning and harvesting of seagrass and seaweeds.	

		turn will lead to enhanced ecosystem services and the potential expansion of the seagrass meadow within the project area. Carbon benefit, such as enhanced carbon sequestration in the sediment and biomass of the seagrass is also a potential benefit. 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 (gleaners are fishers who walk in the shallow water or on the exposed land, and pick up the snails, shells, sea cucumbers, urchins, seaweed and fish) and seaweed farmers in focus groups to gather their perspectives on proposed management measures. To ensure equitable representation, the VSPC includes both female and fisher community members. These groups will actively participate in decision-making processes, including benefit-sharing mechanisms. Protection and management restrictions are only imposed within the project areas, which is proportionately a small area (less than 0.3%) within the Shimoni-Vanga Joint Co-management Area (JCMA) and other grounds for activities such as fishing and gleaning are available, mitigating negative impacts on local livelihoods. Furthermore, the project is likely to address the overfishing and depletion of commercial stocks in
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		the area and it is hoped that a 'spillover effect' from the project areas will increase long-term food security as populations recover.
Conservation (Raising awareness; 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 project, local seagrass biodiversity and the wide ecosystem benefits of seagrass will be shared in culturally appropriate ways such 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. We will also organise 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.

1.4 Project Boundaries

Project boundaries and further details are included in table 1.4.1 and the maps below; separate project boundary files and habitat maps have been submitted to Plan Vivo. The protected area boundaries were decided by the local fishers and members of Vanga and Jimbo Beach Management Units (BMUs) as part of a 3 day community consultation run by Kenya Marine Fisheries Research Institute (KMFRI) and attended by multiple agencies including Kwale County Government, Kenya Wildlife Service and Kenya Fisheries Service. 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.

The project areas are situated in close proximity to a number of legally protected marine areas (table 3 and figure 1). Marine environments are characterised by having high connectivity as larval dispersal through the water column allows larvae to populate areas away from where they were initially spawned. As a result, larvae are likely to disperse between the project areas, surrounding fishing grounds and local protected areas. Furthermore, seagrass acts as a nursery ground for many culturally and commercially important fish species ([Wanjiru et al., 2023](#)). By protecting this important ecosystem, juvenile fish are more likely to reach adulthood and spawn, increasing regional fish recruitment.

There is strong connectivity between mangroves, seagrass and coral reefs, with fish displaying life-stage dependent habitat use across these three ecosystems. Our seagrass project areas are adjacent to mangrove forests and are in close proximity to Vanga Blue Forest. They are also surrounded by infringing coral reef, with sporadic reef systems within the project areas. As a result, protecting the seagrass project area will support fish to move across ecosystems as they move through the life stages, improving regional biodiversity.

A meta-analysis of telemetry data of elasmobranchs, turtles and cetaceans found that both elasmobranchs and turtles were frequenting the Vanga Bay area during transboundary migrations ([Barkley et al., 2019](#)). Green sea turtles are especially reliant on seagrass as a feeding ground and are known to migrate long distances from feeding grounds to nesting sites.

Furthermore, the marine environment lacks the fragmentation seen in the terrestrial environment from roads, fences and areas populated by humans. As a result, marine species residing in the project area may leave the project area boundary as part of their home ranges. However, the frequency of marine species movement across the project area borders may be reduced if the surrounding ecosystems are substantially more degraded than the project area.

In time, it is expected that a 'spillover effect' will be seen in the fishing grounds surrounding the project areas. As biodiversity increases within the project areas, fish species and motile invertebrates are likely to develop new home ranges outside the project area to prevent over-competition. This would provide local fishers with increased catches and improved economic benefits.

Table 3: Project Boundaries

Location:	The project region is located in: Kenya, Kwale County, Lungalunga Sub-county, Vanga, Jimbo, Jasini and Kiwegu villages, Vanga Bay.					
Geographic Coordinates:	Table 4: Coordinates of the Project Region and Project Areas					
	Project Region	Latitude	Longitude			
	Vanga Bay	4 39' 00" S	39 13' 00" E			
	Project Areas	Latitude	Longitude			
	Mwarembo-Spaki	4 66' 22" S	39 24' 33" E			
	Bazo-Jibweni	4 67' 39" S	39 22' 75" E			
Project Region(s):	There is one project region covering Vanga Bay, inclusive of the already established mangrove conservation project areas of Vanga Blue Forest, and the villages of the project participants involved in this project (Vanga, Jimbo, Jasini and Kiwegu). The project region covers an estimated total of ~5320 ha.					
Project Area(s):	There are two project areas, they are off the coast of Vanga and Jimbo villages, in Vanga Bay.					
	Table 5: The total extent (in hectares) of the two proposed project areas					
	Project Area	Area (ha)				
	Mwarembo-Spaki	168				
	Bazo-Jibweni	56.7				
Total Project Area	224.7					
Protected Areas:	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 corals, reef and pelagic fish, sea turtles, and dugongs.					
	Legally designated protected areas adjacent to the project region have been summarised in the table below:					
	Table 6: Legally protected areas located adjacent to the seagrass biodiversity project region.					
	<table><tr><td>Name</td><td>Location</td><td>Additional information</td></tr></table>	Name	Location	Additional information		
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: 28km ² . 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: 11km ²) 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 km ²)

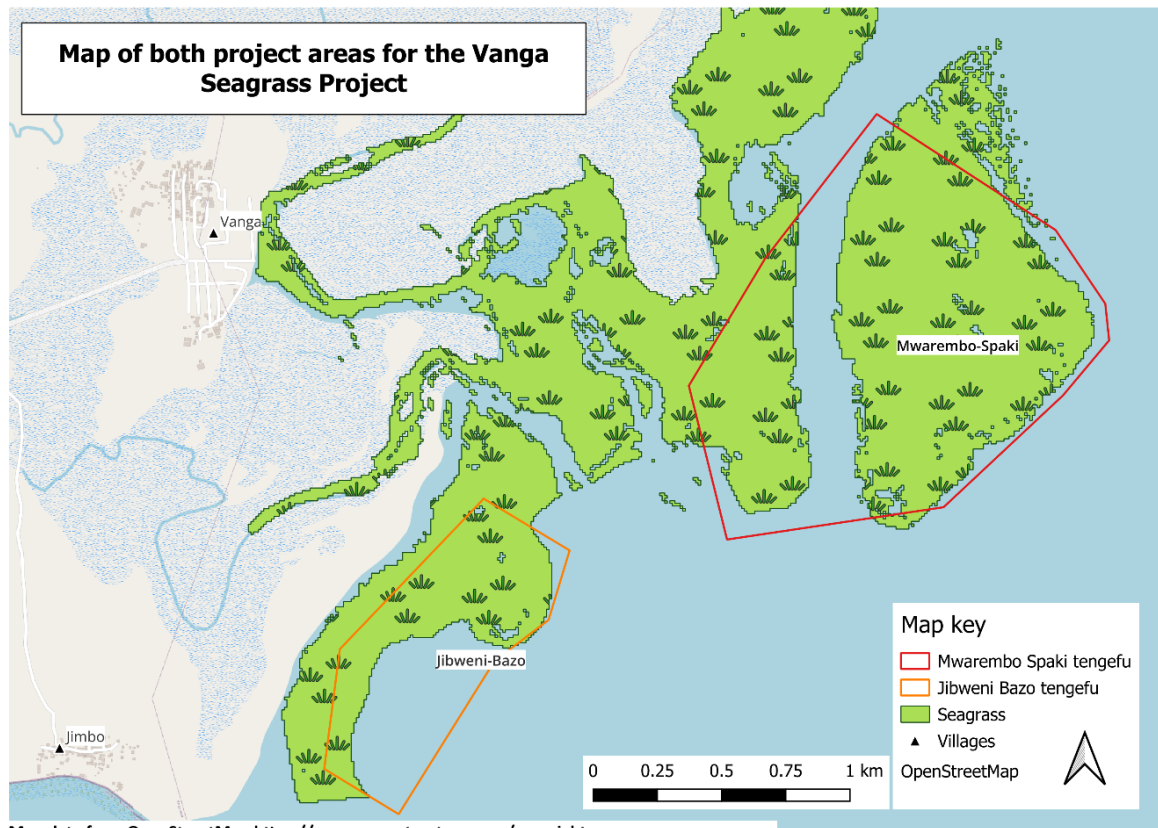


Figure 1: Map of both Vanga Seagrass Project areas. Seagrass coverage data is from the mapping work conducted as part of Harcourt et al, (2018).

Map of Vanga Seagrass Project areas in relation to local protected areas

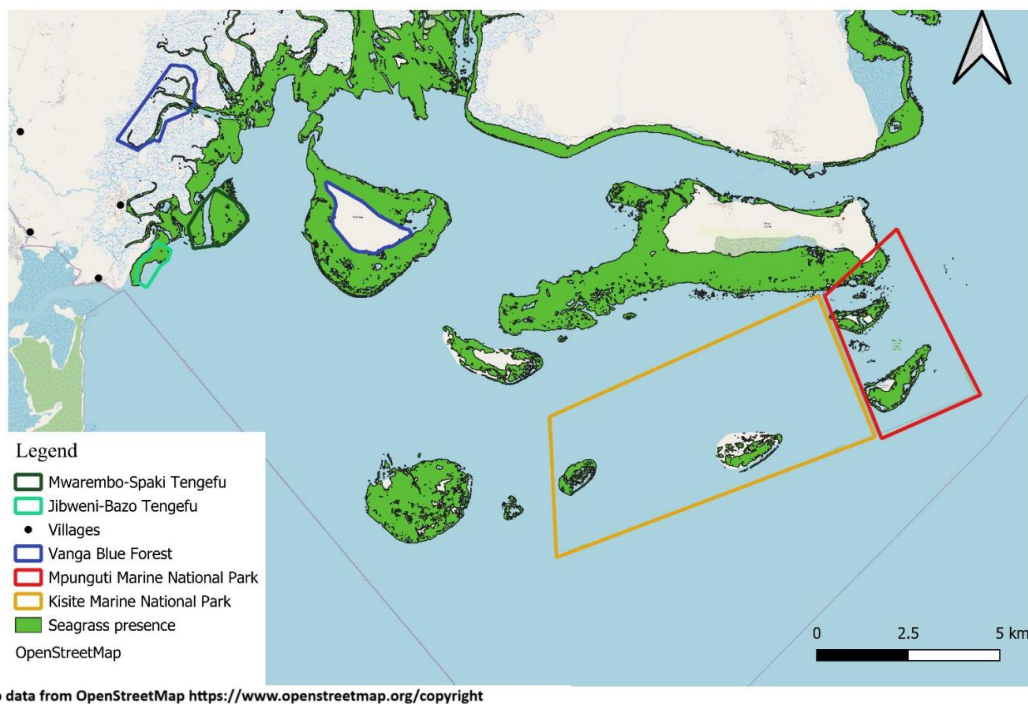


Figure 2: Map of Vanga Seagrass Project in relation to adjacent Protected Areas.

1.5 Land and Management Rights

Table 7 describes the ownership, tenure, user rights or management rights of the project areas and how these relate to the rights of project participants.

Table 7: Land and Management Rights

Project Area	Ownership and user rights status	Evidence
Mwarembo-Spaki LMMA	Vanga Beach Management Unit (BMU) has permanent user rights under the current constitution of Kenya 2010.	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 have obtained user rights for Vanga Bay through the Kenya Fisheries Service (KeFS) and therefore have user rights for these project areas. BMU user rights are confirmed under the current constitution of Kenya 2010.
Jibweni-Bazo LMMA	Jimbo BMU has permanent user rights under the current constitution of Kenya 2010.	Between 2010 to 2015, a number of civil society organisations initiated the development of Community Conservation Areas (CCAs) in the Shimoni-Vanga seascape. 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. The Shimoni-Vanga seascape has 7 CMAs with the Vanga and Jimbo CMAs managed by the respective BMUs. Both BMUs have formal certification documents included with this PDD.
Mwarembo-Spaki and Jibweni-Bazo LMMAs	Shimoni-Vanga Joint Co-Management Area (JCMA)	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 functions within the hierarchy in Kenya. 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 (known fish breeding site), Wasini 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 located within a shared fishing ground outlined in the JCMA. As a result, fishers from any of the 7 BMUs within the JCMA can ask their BMU representative to contact Vanga BMU for permission to fish within the shared grounds. All fishers will be subject to the same closures and restrictions outlined as management interventions for the LMMA. The Vanga and Jimbo BMUs gave notification of the LMMA to the JCMA as per the correct protocols. Outreach and sensitisation work regarding the LMMA regulations and its benefits and an opportunity to raise any concerns will be offered to members of the wider JCMA.
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2 Stakeholder Engagement

2.1 Stakeholder Analysis

2.1.1 Stakeholder Identification

We recognise that some people and groups prefer not to use the term "stakeholder" for several reasons, including that it diminishes the importance of IP and LCs if they are classed as a stakeholder alongside other groups with a lesser interest or role in a project. We acknowledge this perspective and are conscious of this risk. Our use of this terminology does not intend to, in anyway, diminish or disregard the importance of IP and LCs within projects; we recognise that the people who participate in, contribute to and live alongside our projects are absolutely critical to the success of those projects, and their meaningful inclusion in project design is essential. We welcome the terminology used by Plan Vivo of 'local' and 'secondary' stakeholders, which contributes to distinguishing IP and LCs from other stakeholders who are less affected by, or have less influence over, a project. We therefore use the word "stakeholder" here with acknowledgement of some sensitivity regarding the term, but with conscious and deliberate effort to avoid using it in a way that disregards the importance of the local communities at the heart of our projects.

This project is being led by the VSPC which sits within VBF CBO. This committee has representation from the Beach Management Units (Vanga BMU and Jimbo BMU) and residents from Vanga, Kiwegu, Jimbo, and Jasini villages. Notably, Kiwegu and Jasini fishers are also under the management of Vanga and Jimbo BMUs respectively. 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, KMFRI and other local institutions on the successful mangrove carbon offsetting project, Vanga Blue Forest, and have demonstrated success in managing pioneering projects.

Stakeholder groups are described in more detail in Table 8 below and the figure below shows how these groups are interlinked.

Table 8: Stakeholder Analysis

Stakeholder Group	Stakeholder Type	Impact	Influence	Engagement
Vanga Seagrass Project	Local/ Primary	Positively – High This stakeholder group will be impacted positively through ecosystem benefits such as	Positively impacted with a high level of	Committee members were elected democratically from each of the 4 villages and the committee will be

Committee (VSPC)		the spillover effect of commercially viable species into neighbouring grounds, coastal protection and potential new income streams from ecotourism. The Plan Vivo Biodiversity Credits (PVBCs) will also bring in additional finance to the community which can be spent on local community development. Skills development through running a CBO, participating in the governance of a local initiative, and opportunities for learning and development that may arise through the project.	influence as VSPC will drive the project and manage the benefits-sharing mechanism.	actively involved in developing the project direction, managing on-the-ground initiatives and awareness campaigns and will be leading on deciding how to send the income for the community through PVBCs.
Vanga Blue Forest (VBF) Community-Based Organisation	Local/Primary	positively through ecosystem benefits such as the spillover effect of commercially viable species into neighbouring grounds, coastal protection and potential new income streams from ecotourism. Ecosystem benefits will be further enhanced through VBF being active in the region as mangroves and seagrass work in synergy. The Plan Vivo Biodiversity Certificates (PVBCs) will also bring in additional finance to the community which can be spent on local community development. VBF will also benefit through the increase in capacity and increase in community-led conservation in the region as the projects will be able to cross-promote each other and share best practice.	Positively impacted but medium to low level of influence as the VSP will be ran by it's own committee.	VBF CBO have actively participated in community consultations, especially around governance structures. The VSP will sit within VBF CBO as an autonomous committee. This has been invaluable for knowledge-sharing and VSPC will adopt VBF CBO policies, governance structures and safeguarding approaches.
Vanga BMU Jimbo BMU	Primary/Local	positively through ecosystem benefits such as the spillover effect of commercially viable	Positively impacted with a	Both BMUs have been involved with running the community consultation

		species into neighbouring grounds and coastal protection, improvements in overall resilience of fish stocks due to improvements in local biodiversity. Support with monitoring and enforcement of LMMA. Negatively - increased restrictions on fishers within the BMU.	medium level of influence.	around management and enforcement of the project areas and led on finalising the restrictions within the LMMA. Negative impacts on fishers within the BMUs have been addressed by this project being community-led and restrictions being actively discussed and decided on by the local fishing community. The BMU organisations themselves will not directly influence the project however, the VSPC will include 4 fishers, one from each village, who must be BMU members. They will act as the representation for the local fishing community in its entirety within the VSP and will be able to represent their views when discussing how to spend income from PVBCs.
Vanga-Shimoni JCMA	Primary	Positively through ecosystem benefits such as the spillover effect of commercially viable species into neighbouring grounds and coastal protection, improvements in overall resilience of fish stocks due to improvements in local biodiversity. Negatively - increased restrictions on fishers within the JCMA.	Overall positively impacted with a low level of influence	The Mwarembo-Spaki project area is located within a shared fishing ground outlined in the JCMA. As a result, fishers from any of the 7 BMUs within the JCMA can ask their BMU representative to contact Vanga BMU for permission to fish within the shared grounds. All fishers will be subject to the same closures and restrictions outlined as management interventions for the LMMA. The Vanga and Jimbo BMUs gave notification of the LMMA to the

				JCMA as per the correct protocols. Outreach and sensitisation work regarding the LMMA regulations and its benefits and an opportunity to raise any concerns will be offered to members of the wider JCMA.
Kenya Fisheries Service (KeFS)	Secondary	Positively impacted through support with improving local fish stocks and protecting biodiversity. Improved reputation for supporting positive community-led initiatives.	Positively impacted with high level of influence	KeFS has high-level involvement in the project such as formally recognising our notification of the project set-up however, KeFS will not be involved in the day-to-day activities of the project.
Kenya Marine and Fisheries Research Institute (KMFRRI)	Secondary	Positively impacted through increased research opportunities, support with implementing local sustainable biodiversity conservation models. Improved reputation for supporting positive community-led initiatives.	Positively impacted with medium level of influence.	KMFRRI are involved in the project as facilitators and technical support. They led the community consultations around governance structures however, decisions were made by the community.
Kenya Wildlife Service (KWS)	Secondary	Positively impacted through improved conservation of transboundary marine resources, increased monitoring of marine biodiversity	Positively impacted with high level of influence	KWS will be involved in the project for technical support in transboundary conservation and biodiversity monitoring.
County Government of Kwale (CGK)	Secondary	Positively impacted through enhanced fisheries development and improved community livelihood, enhanced community engagement and participation	Positively impacted with high level of influence	CGK will be involved in an oversight capacity to provide support in coordination and security of community engagement and public participation (e.g. Barazas). Engagement with CGK in the project aligns with the Carbon Market Regulations (2024) and therefore, will hopefully ensure that VSP

				is compliant with any biodiversity markets legislation that may be released in the future.
Association for Coastal Ecosystem Services (ACES)	Secondary	Positively through improved reputation for supporting positive community-led projects. New opportunity to extend remit into biodiversity credits. Diversifying project portfolio and increasing capacity.	Positively impacted with high levels of influence	ACES acts as a project coordinator and is responsible for the prudential management of this project. ACES will lead on project certification, sale of credits and reporting to funders and Plan Vivo.
Edinburgh Napier University (ENU) and researchers	Secondary	Positive impacts through improved reputation for supporting positive community-led projects. Access to new research sites and topics for research staff and students, opportunity to turn research into real-world impacts.	Positively impacted with low levels of influence	ENU are supporting with the biodiversity monitoring approaches for the project and have engaged with the project by offering technical expertise.

2.1.2 Indigenous Peoples and Local Communities

As the project areas are within a marine environment and are technically owned by the Kenyan government, user rights sit under the respective BMUs. 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 have obtained user rights for Vanga Bay through the Kenya Fisheries Service (KeFS) and therefore have user rights for these project areas. BMU user rights are permanent under the current constitution of Kenya 2010.

Table 9: Indigenous Peoples and Local Communities

Indigenous Peoples or local communities	Rights to land or resources in the project area(s)	Governance structure	Involvement of women and marginalised groups	Engagement
Vanga and Jimbo BMUs and their members have rights to fisheries resources in the project areas.	BMUs are fishers' association that have co-management rights established under The National Kenyan Fisheries Act regulations of 2007 to increase community participation in inshore marine management.	Under the The Fisheries Management and Development (Beach Management Units) Regulations, 2024, the assembly (all registered members of the BMU) will democratically elect an executive committee comprising of: (a) thirty percent representing boat owners; (b) thirty percent representing crew members; (c) thirty percent representing traders; and (d) ten percent representing others.	Under the The Fisheries Management and Development (Beach Management Units) Regulations, 2024, the executive committee will ensure its composition; (a) reflects the interests of all categories of members; (b) accords equal opportunities to the youth, persons with disabilities and other vulnerable and marginalized communities; and (c) meets the gender requirement such that not more than two-thirds of the members shall be of the same gender.	The BMUs have been heavily involved in the project from inception. Project area demarcation and management restrictions were proposed by the fishing community and the BMUs continue to be involved in the project and are supporting with management patrols of the project areas. Some BMU members (local fishers) have also been democratically elected onto the VSPC.

2.1.3 Disputed Land or Resources

There are no land disputes in the project areas, as the seagrass beds are co-managed by the BMUs who have permanent user rights under the current Kenyan constitution.

Resources such as fish are harvested illegally in the project area through the use of banned (illegal) fishing gears such as seine nets. This will be addressed through awareness campaigns, patrolling the project areas and working closely with the BMUs and KeFS. Despite this, the illegal resource use is not defined as a dispute, but a lack of compliance due to the local authorities in the region lacking the resources to effectively manage this fishing activity.

There has previously been a historic dispute as Tanzanian fishers have historically fished illegally in Vanga Bay, however, this situation is now controlled through the presence of Kenyan authorities on the Kenyan side of the border and Tanzanian authorities on the Tanzanian side of the border. There is always authority presence and there are frequent patrols of the maritime border.

2.2 Project Coordination and Management

The VSPC is the project coordinator and in collaboration with the local project staff, will be responsible for executing key project activities and overall project implementation. The VSPC sits within VBF CBO as its own autonomous committee and will act as project decision makers and are responsible for delivering key in-country activities. VBF CBO will work in collaboration with ACES who will play a role in project co-ordination and management.

ACES will work in collaboration with the local VSP staff and VSPC to develop the appropriate documents required by the PV Nature Standard. The local project staff report directly to the committees and are a liaison between local stakeholders and ACES. The project committee and local project staff together will be responsible for delivering key in-country activities. This project is community-led and the VSPC are representative of the communities involved in this project, including marginalised groups (such as women, youth, and people with disabilities).

KMFRI is the project's host institution and will provide technical and research expertise and in-country project support. KMFRI also leads on coordinating with intergovernmental institutions and local stakeholders to ensure the project is compliant with policy, legal frameworks and procedures. Local project staff are responsible for liaising and engaging with KMFRI on in-country activities and project development and progress. A summary of relevant experience is listed in Table 2.2.1 and can be found below:

The Vanga Seagrass Project committee (VSPC) will be the vehicle through which the communities will co-manage the project with the support of the already established VBF CBO. The project will be led by local project staff under the VBF CBO governance framework. Mwinyi Hassan Mohammed (VSP Project Officer) has 2 years' experience implementing VSP, leading project activities and working as part of the VBF CBO team. Mwinyi has a BSc in Marine conservation and has previously interned with KMFRI. Mwinyi was hired through a panel interview led by VSPC, local government, and KMFRI representatives.

VSPC is a sub-committee focused on seagrass conservation within Vanga Bay and forms part of the VBF 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.

ACES is a registered Scottish charity (SCO 43978); this organisation helped to establish and now continues to support 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 working with ACES in carbon market project coordination. Robyn is supported by Amber Baker (Assistant Director) and Amelia Allerton (Biodiversity Lead). 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. ACES helped develop the world's first community-led blue carbon project, hence the charity has unique expertise in enabling long-term support for coastal conservation and livelihood benefits in Africa in pioneering projects.

KMFRI is a State Corporation established in 1979 by the Science and Technology Act, Cap 250 of the Laws of Kenya, which has since been repealed by the Science, Technology and Innovation Act No. 28 of 2013 which has recognized KMFRI as a national research institution under section 56, fourth schedule. KMFRI's mandate is to undertake research in "marine and freshwater fisheries, aquaculture, environmental and ecological studies, and marine research including chemical and physical oceanography", in order to provide scientific data and information for sustainable development of the Blue Economy.

KMFRI involvement in the Vanga Seagrass Project is led by Dr James Kairo, mangrove ecologist and chief scientist with Dr Kipkorir araap Sigi Lang'at, mangrove ecologist and Dr. Amina Hamza, marine ecologist acting as KMFRI's main project liaisons with ACES and VSP, providing technical expertise and ongoing support. KMFRI's Dr Jacqueline Uku, seagrass researcher and chief scientist, supports with monitoring and technical expertise.

Other institutions (e.g. KeFS and KWS) listed in section 2.1.1 Stakeholder Identification will be involved in the project however, overall project coordination will be managed between VSPC and ACES with technical support from KMFRI.

Table 10: Responsibility for Project Coordination and Management Functions

Project Coordination and Management Function	Responsible Party/Parties
Stakeholder engagement during project development and implementation	Responsible for coordination: VSPC/ACES/KMFRI

	Other stakeholders involved: KeFS/CGK
Ensuring conformance with the Plan Vivo Biodiversity Standard and compliance with applicable policies, laws and regulations	Responsible for coordination: VSPC/ACES/KMFRI Other stakeholders involved: KeFS
Developing technical specifications, land management plans and project agreements with project participants	Responsible for coordination: VSPC/ACES/KMFRI Other stakeholders involved: KeFS /CGK
Ensuring that the PDD is updated with any changes to the project	VSPC/ACES/KMFRI
Registration and recording of management plans, project agreements, monitoring results, and sales agreements	Responsible for coordination: VSPC/ACES Other stakeholders involved: KeFS /CGK
Managing project finances and dispersal of income to project participants as described by the benefit sharing mechanism	VSPC/ACES
Managing Plan Vivo Biodiversity Certificates in the PV Nature Registry	ACES
Preparing annual reports and coordinating validation and verification events	VSPC/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	Responsible for coordination: VSPC/KMFRI Other stakeholders involved: KeFS/NEMA (National Environment Management Authority)
Providing technical assistance and capacity building required for project participants to implement project interventions	Responsible for coordination: KMFRI/ACES/VSPC Other stakeholders involved: ENU/CGK
Monitoring progress indicators, livelihood indicators and ecosystem indicators and providing ongoing support to project participants	VSPC/KMFRI/ACES
Measurement, reporting and verification of biodiversity benefits	VSPC/ACES/KMFRI

2.3 Project Participants

Vanga Seagrass Project participants include the full community of the 4 participating villages of Vanga, Jimbo, Jasini and Kiwegu. These villages are the project participants because they have user rights to Vanga Bay through the BMUs and therefore, will be involved and impacted by the project interventions. The project will be led by a democratically elected committee comprised of members of the 4 participating villages. The committee has compulsory representation requirements for women, youth and people with disabilities to ensure there is fair and diverse representation of the communities within the committee. Further details on the project participants can be found in the table below.

Table 11: Project Participants (grouped by village, area or region)

Project Participant	Participant Type*	Location of Residence	Typical Land Holding	Land and Natural Resource Use
Community of Vanga, Jimbo, Jasini and Kiwegu	Type I	Lives within the villages of Vanga, Jimbo, Jasini and Kiwegu, all of which reside within the project region. The project areas are within the coastal waters of Vanga Bay.	Marine spaces are government owned with the community having access and management rights through the Beach Management Units	The communities use the project areas for fishing and gleaning, both for sustenance and economic purposes; however, fish stocks have been in decline in the region. With the closures, the project areas will still be accessible to fishers two months of the year. Gear restrictions will be in place year-round to address the use of destructive gears.
VSPC members	Type I	Lives within the villages of Vanga, Jimbo, Jasini and Kiwegu, all of which reside within the project region. The project areas are within the coastal waters of Vanga Bay.	Marine spaces are government owned with the community have access and management rights through the Beach Management Units. VBF CBO (which the VSPC sits within) is a registered user group of the BMUs.	The committee members include 4 fishers to represent the fishing community, one from each village. These committee members use the project areas for fishing and gleaning, both for sustenance and economic purposes; however, fish stocks have been in decline in the region. With the closures, the project areas will still be accessible to fishers two months of the year. Gear restrictions will be in place year-round to address the use of destructive gears.

Fishers	Type I	Lives within the villages of Vanga, Jimbo, Jasini and Kiwegu, all of which reside within the project region. The project areas are within the coastal waters of Vanga Bay.	The BMUs who issue licences to the fishers have permanent user rights of the project areas under the current Kenyan constitution - implemented the management interventions for the project areas.	The fishers use the project areas for fishing and gleaning, both for sustenance and economic purposes; however, fish stocks have been in decline in the region. With the closures, the project areas will still be accessible to fishers two months of the year. Gear restrictions will be in place year-round to address the use of destructive gears. Fishers have been listed as a separate project participant group as we want to acknowledge that they are going to be interacting with the project at a higher rate than the average community member due to the project area (marine) location and interventions.
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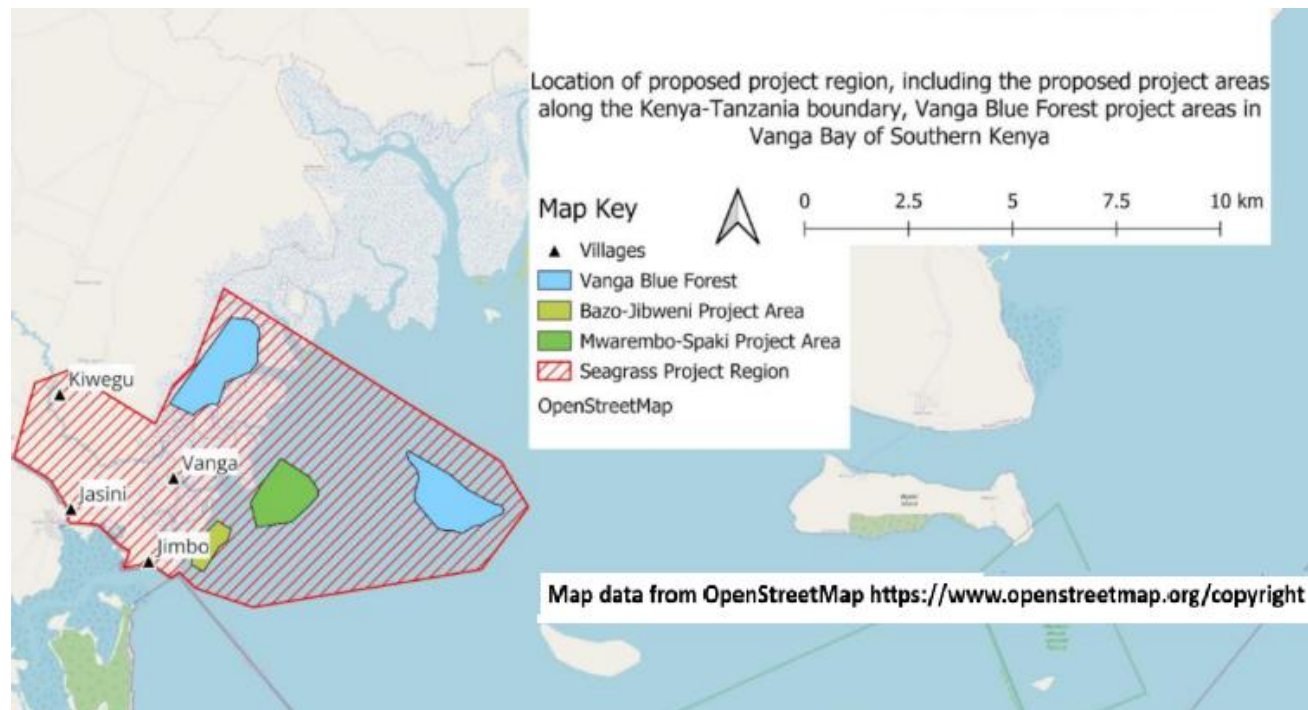


Figure 3: A map to show location of project participants within the project region

2.4 Participatory Design

Around 30% of jobs in the Vanga community are in the fisheries sector. The community increasingly recognises the importance of seagrass as a nursery habitat for fish, which boosts fish stocks and therefore fisheries thanks to continued awareness raising efforts by the in-country team. As this project is one of the first seagrass biodiversity projects worldwide, ensuring community awareness, participation, and agreement is key to ensuring the success and sustainability of this project under the new standard of PV Nature. Seagrass conservation efforts have been present in Vanga Bay for some time. The community wished to protect seagrass through the already-established VBF and as a result, a Carbon-Plus approach was developed with seagrass conservation added to the VBF PDD. This approach was a donations-based (not offsets) approach to seagrass conservation, with citizen science activities carried out to monitor seagrass health.

Efforts to protect seagrass have continued in the region and this project is a natural progression of the Locally Managed Marine Area (LMMA) which was developed thanks to UNEP funding in 2023; thanks to the establishment process of the LMMA, the Project Coordinators have been working with the representatives of the Local and Primary stakeholders and project interventions have already been defined and developed in detail by the project participants. The Beach Management Units (BMU) of Vanga and Jimbo 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 at the Vanga BMUs General Assembly in January 2023. Participants of the meeting included BMU members, government agencies, civil society and community members concerned with an ecosystems approach to fishery management. KMFRI then held a further 3 day community consultation in March 2023 with local stakeholders and Vanga and Jimbo BMU members to discuss and review LMMA boundaries, sensitise the community to the project objectives and give further information on community-led conservation projects. Mapping activities were held to review and 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. Part of the development of this project has been 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.

VBF Community-based Organisation (CBO) 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 and enable 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 Act 2022 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 VSPC is a sub-committee within VBF CBO, this will be a minimum standard that this project will follow (see Governance Structure section for more information on the integration of the Seagrass committee within VBF CBO).

The governing committee of VBF has, in the past, elected to prioritise vulnerable groups. This has included the provision of sanitary items 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 Stakeholder Consultation

2.5.1 Design Phase Consultations

We have held a number of consultations with the community throughout the project design and set-up process. Details of consultations can be found in the table below:

Table 11: Key consultations summary

Date of consultation	Consultation info	Stakeholder groups	How feedback on project interventions was encouraged	Feedback received
January 2023	Vanga BMU general assembly where plans to implement a seagrass LMMA (or Tengefu) within their fishing grounds were discussed and agreed.	Vanga and Jimbo BMU members, local fishers	Open discussion forum and Q and A sessions	Stakeholders present raised concerns on the BMUs capacity to monitor, patrol and enforce management interventions, as well as challenges associated with Illegal, Unreported and Unregulated (IUU) fishing practices within Vanga Bay.
10th February 2023	The Project facilitated a consultative meeting with the BMU. The meeting was chaired by Madam Mwanatumu Kadau, Vanga BMU chairlady	Participants of the meeting included government agencies, civil society and local village community members	Open discussion forum and Q and A sessions	encouraged the BMU to hold a meeting with the broader Vanga community to sensitise them on the seagrass enclosure, and to invite other stakeholders to deliberate on the same. Emphasis was made on patrolling and adherence to the law for sustainability.
2nd - 4th March 2023	KMFRI team held 3-day community consultations on the 2nd – 4th March 2023	KMFRI, Vanga and Jimbo	Open discussion forum and Q and A sessions	Agreement was made on LMMA boundaries and project management interventions.

	with stakeholders, Vanga and Jimbo BMU members. Sensitisation on project aims and objectives, community-led conservation projects and a review of LMMA boundaries.	BMUs, local community.		
20th March 2024	Meeting between Vanga and Jimbo BMU executive committee members and VBF executive committee members. The BMU members were sensitised on the carbon offset project benefit sharing structure through; a recap of VBF's history in formulating their own benefit sharing plan, and an explanation of Plan Vivo's guidelines for benefit sharing. It was an interactive group discussion that involved an extensive question and answer session.	Vanga and Jimbo BMU executive committee members and VBF executive committee members.	Open discussion forum and Q and A sessions	Receptive to a similar benefits-sharing mechanism to VBF.
27th February 2024	Objectives of seagrass LMMA governance meeting in Vanga: To recap on 2023 project	Vanga and Jimbo BMU members, VBF	Presentation, Open discussion	Members present voiced alternative governance options and the group came to a consensus on a governance option that was a variation of option one. The community option entails the

	activities and key outputs; To deliberate on the LMMA governance structure; To inform on biodiversity accreditation; and To deliberate on a name for the LMMA.			integration of the seagrass LMMA into VBF wherein the LMMA is semi-autonomous
19th March 2024	Objectives of seagrass LMMA committee formulation meeting in Vanga: To recap on agreed governance structure; To deliberate on seagrass committee representation; and To revise the name for the LMMA.	VBF, Vanga & Jimbo BMUs, Local Government, KMFRI, KeFS, village elders from the four villages within the project area.	Presentations, open discussion, Q&A	Members proposed new names and cast a vote. They agreed on the name 'Vanga Seagrass Project'. The next step is to vote in the seagrass committee. Members agreed that the election should be held after the Muslim holy month of Ramadan. This will also give ample time for community awareness and sensitization for active participation in the election. BMU members will registers candidates interested in vying for the seagrass committee positions within the designated representative groups. Other key stakeholder such as ACES, KMFRI, KeFS and Village Elders will oversee the process to make sure its free and fair.
30th May 2024	Objectives of seagrass LMMA constitution orientation meeting in Vanga: To orient the seagrass project members on the VBF constitution; To inform members on the	Executive committee members from Vanga and Jimbo BMUs, VBF, VSP project staff, elders from the four	Presentations, open discussion, Q&A	Participants agreed on criteria for people wanting to run for VSPC positions. It was noted by members that during awareness creation campaigns emphasis should be placed on fishers that engage in basket trap, handline, fence trap, cast net, and ring net fisheries which are the most common within the locality and project areas. It was agreed that every village would

	process of seagrass committee registration; To develop an election strategy; and To agree on an election date(s).	villages within the project area, KMFRI, Department of Gender and Social Services, KeFS.		have its own election day within the first week of July, 2024.
Elections for the VSPC were conducted from 2nd-5th July, 2024, a day per village. Prior to this, project sensitisation meetings were held in all 4 villages in June 2024	Objectives of seagrass committee elections: To sensitize the local community on the seagrass project aim and governance; To document community perceptions; and To conduct seagrass committee elections.	VBF, Vanga & Jimbo BMUs, Local Government, KMFRI, KeFS, State Department of Gender and Social Services	Presentations, open discussions, democratic elections.	218 community members present at project sensitisation meetings. 246 people attended the committee member elections, 86 attendees were women and 47 attendees were youth. The Vanga Seagrass committee were democratically elected with representation from each of the participating villages. The committee will now drive project direction and manage the benefits sharing mechanism.

2.5.2 Stakeholder Engagement Plan

The democratically elected VSPC includes representation from each of the 4 participating villages, Vanga and Jimbo BMUs and people from marginalised groups such as women, youth and people with disabilities. This committee will represent local opinions on the project and will drive project direction and decision making.

The committee will be in charge of disseminating project information within the communities locally, with support from the VSP project staff. This will include developing resources, posters and leaflets for local distribution, utilising community noticeboards and using channels such as the village chairs to share information.

Feedback, sensitisation and consultation with the local community will be encouraged through open discussion with the VSPC members representing them, local barazas and community consultations and regular outreach, awareness and engagement events. Barazas will be held once per year and it is expected that outreach and engagement events will be held at least 4 times per year.

If anyone wishes to raise a grievance the VSPC will follow an established grievance procedure that community members are made aware of and encouraged to use if required. This grievance mechanism will be the same as the one used under Vanga Blue Forest as both projects are under the VBF CBO constitution. Section 12 of the VBF CBO constitution outlines a thorough grievance process.

The VSPC will also be responsible for informing the BMUs, the Vanga-Shimoni JCMA, KMFRI and KeFS of any project activities relevant to them through their already-established communication channels. The BMUs have strong representation within the VSPC so will be directly involved in developing and progressing the project.

The VSP staff will also be responsible for ensuring that all professional bodies are updated on project activities and will act as a liaison between the committee and participating organisations (ACES, ENU, KMFRI, KeFS, KWS, CGK).

2.6 Free, Prior and Informed Consent (FPIC)

2.6.1 FPIC Legislation

Please see below table for relevant FPIC legislation.

Table 12: National Legislation and International Standards on FPIC

Legislation /Standard	Relevance to Project	Compliance Measures
Constitution of Kenya 2010	Focus on national values, governance principles, and rights. It underscores the state's obligations in safeguarding human rights and the environment, as well as ensuring representation for marginalized groups. The Constitution mandates that all to adhere to principles such as democracy, human rights, public participation and sustainable development. Furthermore, the Constitution guarantees every individual the right to a clean environment and obligates the state to protect these rights through legislative measures. It also emphasizes the necessity of affirmative action to ensure the participation and representation of minorities and marginalized groups.	The project adheres to the Constitution of Kenya through its democratic, consultative approach to participation. Furthermore, the project ensures that there is fair participation of minorities and marginalised groups through the inclusion of a diverse committee which includes representation from women, youth and people with disabilities.
Carbon Markets Regulations 2024	Although not directly relevant, we decided to align our project with the Carbon Market Regulations as much as possible. Our reasoning for this is that there are likely to be similar regulations developed in the near future for biodiversity credits so we wanted to ensure we aligned with latest Kenyan recommendations.	Community consultations were held in accordance with the laws of Kenya. Reports and attendance records are kept for all community consultations so that we are able to provide documentation of compliance to regulations and of free, prior, informed consent.

		An Environmental and Social Impact Assessment was completed and a licence from the National Environment Management Authority obtained.
UNDRIP	While the entire UNDRIP is relevant to the project in its ethos, the most relevant passages have been identified below. The Declaration states that: "Indigenous peoples, in the exercise of their rights, should be free from discrimination of any kind." "Indigenous peoples have suffered from historic injustices as a result of, inter alia, their colonisation and dispossession of their lands, territories and resources, thus preventing them from exercising, in particular, their right to development in accordance with their own needs and interests." And "The urgent need to respect and promote the inherent rights of indigenous peoples which derive from their political, economic and social structures and from their cultures, spiritual traditions, histories and philosophies, especially their rights to their lands, territories and resources." And "that control by indigenous peoples over developments affecting them and their lands, territories and resources will enable them to maintain and strengthen their institutions, cultures and traditions, and to promote their development in accordance with their aspirations and needs." "That respect for indigenous knowledge, cultures and traditional practices contributes to sustainable and equitable development and proper management of the environment."	The project recognises the primacy of the rights of indigenous peoples with regards to land and resource rights and has ensured that these are not compromised by the Project Interventions or activities. Kenya is a former British colony, and whilst the Project Region is almost exclusively populated by native Kenyan people, it is recognised that colonialism has a lasting impact on societies and the project design is sensitive to this. The community-based governance and participatory design of the project allows for local needs and interests to be prioritised, and for consent to the Project Interventions to be wholly subject to the consent of the local community. The participatory design of the project allows for community feedback on interventions and management measures, providing opportunity for Traditional Ecological Knowledge (TEK) to be incorporated into project design.
ILO 169	This Treaty can be considered relevant to the project area according to criteria "(b) peoples in independent countries who are regarded as indigenous on account of their descent	The community engagement and Baraza process allows the community to express their views on and influence how the community benefit funds (gained from the sale of biodiversity

from the populations which inhabited the country, or a geographical region to which the country belongs, at the time of conquest or colonisation or the establishment of present state boundaries and who, irrespective of their legal status, retain some or all of their own social, economic, cultural and political institutions.” The majority of the community in the Project Region belong to the Digo ethnicity, indigenous to the southern coast of Kenya. As with the UNDRIP, the ILO 169 in its entirety is relevant to the project in its ethos and general principles. However, the most pertinent articles have been highlighted below: Article 7 1. The peoples concerned shall have the right to decide their own priorities for the process of development as it affects their lives, beliefs, institutions and spiritual well- being and the lands they occupy or otherwise use, and to exercise control, to the extent possible, over their own economic, social and cultural development. In addition, they shall participate in the formulation, implementation and evaluation of plans and programmes for national and regional development which may affect them directly. Article 8 1. In applying national laws and regulations to the peoples concerned, due regard shall be had to their customs or customary laws. 2. These peoples shall have the right to retain their own customs and institutions, where these are not incompatible with fundamental rights defined by the national legal system and with internationally recognised human rights. Procedures shall be established, whenever necessary,	certificates) are spent, ensuring that community development is locally directed and appropriate. Local customary rights and laws have been assessed as part of the project design process. The existence and status of land and resource conflicts or disputes have been assessed. The project will monitor and assess on an ongoing basis, any land or resource disputes, including those relating to indigenous rights, that may arise during the project term.
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	to resolve conflicts which may arise in the application of this principle. and Article 15 1. The rights of the peoples concerned to the natural resources pertaining to their lands shall be specially safeguarded. These rights include the right of these peoples to participate in the use, management and conservation of these resources.	
(Draft) National Policy on Community Development (2017)	This policy document details the coordination, implementation and Management recommendations of community development practice for national development, applicable to, inter alia, CBOs. The policy recognises the importance of community participation for sustainable development. The policy recognises that “inequitable distribution of resources contributes to marginalisation of some communities and perpetuation of inequalities”.	The Policy recognises the importance of mainstreaming gender, disability, ageing and youth. There is a requirement for 30% representation by women on the governing Committee, and the safeguarding policy commits the project to ensuring that there is no discrimination on grounds of race, gender, disability status, age or other demographic factors. The participatory design, FPIC process and community governance framework meet the recommendation for community participation in sustainable development. The benefits sharing process is designed to ensure maximum community participation in the distribution of funds and burdens of the project
Environmental Management and Coordination Act (EMCA), 1999	Establishes the National Environment Management Authority (NEMA) as the primary regulatory body for environmental protection and management.	NEMA requires projects to complete and Environmental and Social Impact Assessment and will be the authority to complete project screening.

2.6.2 FPIC Process

This project includes multiple village communities: Vanga, Jimbo, Jasini and Kiwegu. These villages are represented within the VSPC who will lead the project and is the vehicle through which the project will receive support from ACES (who offer technical support and the prudential management of the project), and other organisations - including KMFRI (technical support), KeFS, and ENU.

Project sensitisation work has been held in the region by KMFRI, the BMUs and the VSP project staff. This has included printed materials such as posters and information sheets and direct engagement through well-advertised community consultations held in conjunction with the four participating villages. Although fishing is a male-dominated activity, women also engage in fishing activities to sustain their households and have been part of the decision-making process and, where it is deemed appropriate, separate meetings for women are held to ensure equal opportunities for contributing and participating.

Through these community consultations, the project participants reviewed multiple options for managing the project and decided to form a committee within VBF CBO that is autonomous and will manage activities related to the VSP. After community 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. It was agreed that this democratically-elected committee will represent the community in project direction, decision-making and overseeing the benefits-sharing mechanism.

Based on the 13-member seagrass committee structure agreed during the community consultations, the committee will include representation from all participating villages and also consist of a wide demographic with representation for fishers, women, youth and people with disabilities from the community. 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 VSPC 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.

2.6.3 Initial FPIC

Free, Prior, and Informed Consent (FPIC) is a specific right that pertains to Indigenous Peoples and is recognised in the United Nations Declaration on the rights of Indigenous Peoples (UNDRIP). It allows them to give or withhold consent to a program that may affect them or their territories. We work very closely with communities and the projects we develop are only done so with communities who actively want to engage with us and the work that we do. For

example, VBF came from the Vanga communities witnessing the success of the longest standing project supported by ACES, Mikoko Pamoja. Indigenous Peoples and Local Communities have been and continue to be stewards for nature. It is well documented that they currently protect the majority of remaining biodiversity and that land under IPs and LCs stewardship recognised tenure. The recognition of rights pertaining to IPs and LCs is a crucial part of engaging with communities and developing successful conservation (and crediting) projects. Free, Prior, and Informed Consent is a fundamental right for IPs and LCs, upheld by the United Nations Declaration of Rights for Indigenous Peoples. FPIC is defined by Plan vivo as:

Free = consent is given voluntarily and without coercion, intimidation, or manipulation.

Prior = consent is sought sufficiently in advance of any authorisation or commencement of activities to allow time to understand, access, and analyse information on the proposed activity

Informed = information provided prior to seeking consent is accessible, objective, and complete

Consent = a collective decision ("Yes", "No", or "Yes with conditions") made by the rights-holders following their own timelines and decision-making processes with the option to reconsider if the proposed activities change or if new information relevant to the proposed activities emerges.

From the beginning of this project, strong participatory processes have been used to enable the decision on the initial project areas and boundaries of Mwarembo-Spaki (168ha) and Jibweni-Bazo (56.7ha). Furthermore, many project participants are already familiar with conservation project processes and are beneficiaries of the Vanga Blue Forest Project and as a result, the protection of the seagrass beds developed directly from local interest to conserve these environments. 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 community considered the CMA boundaries when delineating project boundaries so these boundaries agree with those of the Mwarembo and Spaki fishing grounds in the CMA. Decisions were also 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.

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.

This project has naturally evolved by and with the community. Initially ACES supported with establishing a 'Carbon-Plus' approach which was a donations-based approach that funded small-scale community-led seagrass conservation. This approach however, wasn't providing a reliable long-term funding stream that could also fund community development work in the way that VBF carbon credits could. Community consultations were held with VBF and the BMUs to sensitise the community – who were already engaged and executing seagrass conservation work – on establishing a seagrass project that would aim to be funded through the sale of biodiversity credits. Further consultations were then held with BMU members to represent the fishing community (as fishers are a key stakeholder in this project) and village elders from each of the 4 participating villages to agree on a governance structure and committee member requirements. It was agreed that this community-led project would be headed by a 13-member democratically elected committee made up of participants from each of the 4 villages. It was agreed that the committee would include representation from women, youth and people with a disability to ensure diverse demographics are taken into consideration during project decision making activities.

Following this, outreach and sensitisation events were held in each of the 4 communities to discuss the project more broadly and increase awareness of the upcoming democratic elections that had been agreed by the BMUs and the village elders. Elections were held across 4 days in each of the participating villages and a strict democratic process was followed. This elected committee will be bound by VBF CBOs constitution and will lead on project decision-making, community outreach events and will manage the community benefits-sharing mechanism in due course.

Evidence of key decisions will be listed in section 2.5.1 with a sample of community consultation reports provided in Annex 4 and 5.

3 Project Design

Baselines

3.1 Baseline Scenario

In Kenya, co-management of fisheries with Beach Management Units (BMUs) began in 2007 with the aim that they would help the Department of Fisheries better manage fish stocks. As a result, current management of the project areas has been driven by Vanga and Jimbo BMUs.

Currently, the project areas are primarily used as fishing grounds by the local communities; Vanga Bay is known as an important fishing ground with many people reliant on fishing as a source of income. Although seine netting is illegal in Kenya, beach seining is common within

Vanga Bay and across coastal Kenya ([Mwikamba et al., 2024](#)), ring netting is also currently a common fishing practice within the project areas. Therefore, despite the local implementation of BMUs there continues to be illegal fishing practices in Vanga Bay. Declines in seagrass coverage, fish abundance and fish biomass can be partly due to the continued and intensive use of illegal fishing methods in Vanga Bay.

Overpopulation, unemployment and poverty among coastal communities drive noncompliance and the use of illegal and highly efficient fishing gears ([Ochiewo 2004](#); [Mangi et al. 2007](#)). Catches in Vanga are dominated by ring net fishing, especially during the Northeast Monsoon season ([Thoya et al., 2020](#)). Despite ring net fishing being associated with pelagic species in deeper waters, in Vanga this practice is currently used in-shore within the seagrass and infringing reef habitats ([Thoya et al., 2020](#)). The high concentration of ring net fishing in the inshore waters of Vanga is believed to be due to economic drivers such as reduced fuel costs which can maximise profits ([Thoya et al., 2020](#)). Indeed, ring net fishing within the project areas was witnessed by project staff in November 2024, demonstrating that this is a current and relevant baseline scenario for land use without project interventions.



Figure 4: Ringnet fishers fishing in the LMMA despite closures – November 2024. This shows the need for interventions such as awareness campaigns and LMMA patrols. © Dona Bertarelli Philanthropy.

The most likely and only baseline scenario for the project areas without project interventions is its current use as a multi-gear fishing ground as this is its current pre-project land use. Table 13 has been designed following procedures described in Plan Vivo's Additionality and Baseline Scenario Tool and includes a summary of barriers that prevent change to this baseline scenario without the support of the project, a summary of project interventions that overcome these barriers and the benefits that are likely to be experienced as a result of interventions.

Please note that even though there are two distinct project areas within this project, they have been included under the same baseline scenario; both project areas are in close proximity to each other within Vanga Bay and face the same challenges and baseline scenario in absence of this project. This baseline scenario must be reassessed when the crediting period is renewed, and at least every 10 years throughout the project period.

Table 13: Barrier analysis

Type of barrier	Alternative Land use - Multi-gear fishery		
	Description of specific barriers	How barriers will be overcome by project activities	Expected benefits from the project
Financial/economic	Lack of finances to support management of the LMMA especially regarding patrols. Lack of community benefit to encourage a movement away from this land use. Lack of finances to support biodiversity monitoring which is essential to show that protection/interventions are working to improve community buy-in. Lack of finances to support training an equipment to develop the skills to conduct patrols and monitoring. Lack of finances for general project development.	For initial project development, ACES and ENU have secured grant and philanthropic funding to support the development and implementation of a LMMA monitoring and enforcement plan. Once the project is established and able to sell biodiversity certificates (PVBCs) on the international market, finances from the sale of these credits can be used to invest in community projects that address specific local need. Through our benefits-sharing mechanism, the distribution of these funds and selection of these projects are community-led. We are in a strong position to leverage community buy-in as the Vanga Bay area has already benefited from the successful Vanga Blue Forest project and therefore, they have an	At this point in time, there is currently no clear way to include seagrass conservation under a carbon crediting project. We have managed to secure funding for developing a biodiversity credits pilot project. Sale of PVBCs to provide long-term sustainable funding for project activities and interventions. Increased fish biomass

		understanding of how funding from these projects work and the scope of community investment that can occur. Through grant funding we are able to provide some training around LMMA patrolling and biodiversity monitoring during the project development phase. Further training can be funded through biodiversity credits or other fundraising mechanisms in the future at the discretion of the democratically elected committee that will lead this project.	
Technical	Limited funding for technical support and training without interventions. Technical support is required for training, conducting patrols, creating and delivering awareness campaigns and for biodiversity monitoring. Support would be needed to develop a project of this magnitude and development is	Collaboration between project partners and technical advisors. Employment of staff through project funding and long-term through biodiversity credits sale.	Knowledge-sharing among collaborators. On site generated research and capacity building of local experts. Key staff to support the committee and carry out project-related activities.

	unlikely without technical support from stakeholders such as KMFRI and ACES.		
Institutional/political	The BMUs lack funding and equipment to patrol the LMMA without interventions. The LMMA (locally called a tengefu) are recognised in customary law however, there is a lack of funding for effective patrols and management, resulting in a lack of compliance without interventions.	Funding through grants and in the long-term through biodiversity credit sales will support with LMMA patrols, equipment and monitoring. Having a structured project and established committee will increase opportunities for collaboration with the BMUs and other relevant institutions	Effective LMMA management – contributing to project aims as well as local and national goals. Local collaboration between communities, academics and research institutions, non-governmental organisations, and government institutions.
Ecological or resource	The current use of the LMMA is unsustainable with environmental degradation and overexploitation of fish stocks occurring. This has been seen by a 30% decline in catches and practices used are associated with negative impacts on important fish nursery sites, vital habitats and IUCN registered species.	The project will carry out patrols to ensure management interventions within the LMMA are followed. Awareness and education campaigns will be carried out to increase project awareness. The project will offer community benefits through the sale of biodiversity credits which will incentivise the community to protect local biodiversity.	Increased biodiversity within the LMMA. Increased fish abundance, easier catches; increased fish biomass; increased revenue from catches, increased catch per unit effort. Increased seagrass cover within the LMMA. Potentially a spill-over effect will occur, increasing local fisheries captures.

Social or cultural	Some fishing gears/ techniques that are damaging to the seagrass and related biodiversity have been used by fishers in the region and therefore, there may be opposition to change.	Awareness and education campaigns will be carried out to increase understanding of the implications of damaging gears and improve understanding of alternative gears and techniques. Awareness campaigns on the project as a whole will be carried out to increase community understanding and buy-in. Some of the fishing techniques used are illegal methods under Kenyan law. The project will work with the BMUs and KeFs to improve compliance. The project will carry out patrols to ensure management interventions within the LMMA are followed.	Local collaboration and community cohesion. Improved local understanding of the project, its interventions and benefits. Collaboration among the project, community and government institutions. Financial benefits for community members involved in patrols.
Infrastructural	The LMMA is sub-tidal which provides challenges for both patrols and monitoring. Specialised equipment, training and boats are required to access and effectively	The project will provide funding, staffing and technical expertise to address challenges around patrols and monitoring.	Ability to carry out patrols and monitoring to meet requirements of PV Nature.

	monitor the project areas, which is not possible without project interventions due to lack of funding and technical support. One of the sites specifically is not able to be viewed from the shoreline due to mangrove cover in the intertidal zone, this means that patrols must be conducted via boats and monitoring from the shore using binoculars is not possible.		
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3.2 Biodiversity Baseline

Current habitat types within the project areas and wider project region include seagrass beds, infringing reef systems and sandy bottom. Currently, there are some areas in good habitat health but the ecosystem is quite fragmented with high levels of degradation throughout. Fish within the project areas appear to be small in size, likely because size distribution of exploited species is predicted to shift toward small individuals due to size-selective fishing ([Tu et al., 2018](#)). Indeed, fish catches in Vanga (measured in kg landed) have seen a >30% reduction over the past decade ([Fortnam et al., 2021](#)), suggesting declining fish, crustacean and cephalopod stocks in the region.

In the absence of this project, there would be no established long-term protection for the project areas. Although the LMMA has been designated, there are currently no patrols or enforcement of restrictions due to lack of funding and therefore, a lack of compliance with protection measures. As a result, the current and continual pressure on the seagrass and its biodiversity would continue under the baseline scenario; these drivers of seagrass degradation are expected to increase due to a required increase in effort needed to catch fish as the seagrass habitat and fish populations decline. The sale of PVBCs that would be generated from this project would secure the sustainability of the interventions, enable community development projects and support alternative income generating activities for the local communities. There is evidence of the destruction from the frequent use destructive

fishing methods - notably seine netting and anchoring - that are used in the Mwarembo-Spaki seagrass meadows. The frequent use of these fishing methods do not allow for the recovery of the seagrass meadow ([Wanjiru et al., 2021](#); [Awadh et al., 2024](#); [Mwikamba et al., 2024](#)). Under the baseline scenario, without enhanced enforcement capacity to limit the fishing activity within the proposed project areas, the seagrass meadow habitat and associated biodiversity will continue to be lost due to human activity.



Figure 5: 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. © Edward Mtwiri and KMFRI.

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](#)). Sea urchin overgrazing is likely due to the overfishing of urchin predators, leading to an unnatural increase in populations. Seagrasses offer indication of ecosystem health, in the study of the Kenyan coast by [Awadh et al., \(2024\)](#) it was noted that 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 other pressures on the seagrass meadow contribute to the threat of survival of important and IUCN Red Listed species such as dugongs in Vanga Bay and coastal Kenya. This degradation is seen throughout Vanga Bay and is likely impacting nearby protected areas and wildlife migratory corridors, further impacting the IUCN Red List species listed in the table below.

Table 14: IUCN Red List endangered species sighted within the project region of Vanga Bay

Animal group	Scientific name	Common name	Local name	IUCN Red List Status
Reptiles	<i>Chelonia mydas</i>	Green turtle	Ziwa	Endangered
	<i>Eretmochelys imbricate</i>	Hawksbill turtle	Ng'amba	Critically endangered
Mammals	<i>Tursiops aduncus</i>	Bottlenose dolphin	Pomboo mwenye pua ya chupa	Near-threatened
	<i>Sousa chinensis</i>	Indopacific humpback dolphin	Pomboo wa nundu	Vulnerable
	<i>Dugong dugon</i>	Dugong	Nguva	Vulnerable – East African sub-population critically endangered

3.3 Socioeconomic Baseline

3.3.1 Initial Socioeconomic Status

The project region covers part of Vanga Bay, which is the most important fisheries landing site on the south coast of Kenya and contains 14% of the nation's seagrass (Harcourt et al., 2018). Local livelihoods are heavily dependent on fishing with limited other employment opportunities available, leading to low employment levels and high poverty rates (Vanga Blue Forest (VBF) PDD, 2021). Household monthly income is estimated to range between KES 2,065-16,112 (US\$ 20-156) (VBF PDD, 2021). According to recent studies, seagrass coverage in Vanga Bay is declining (Harcourt et al., 2018; Awadh et al., 2024) along with the fish catches which have reduced by >30% over the past decade (Fortnam et al., 2021). These declines undermine food security, the leading factor in Kenya's multidimensional poverty index (20%) (UNDP, 2023). The Vanga Bay area has a poverty index just marginally higher than the Kenyan average. Destructive and overfishing is the leading source for this decline, negatively impacting the ecosystem and biodiversity, undermining local health, water, food, security and economic and cultural services. This is further compounded by changes to the climate impacting weather patterns, sea temperatures and sea level rise.

For each of the local stakeholder groups identified in Section 2.1.1, descriptions of livelihood status immediately prior to the start of the project, disaggregated by gender where appropriate, have been provided. In June 2025 KMFRI conducted a social survey, led by Anne Wanjiru, a social scientist at KMFRI. The survey included all 4 participating villages, surveying

a total of 270 households (Vanga 117, Kiwegu 77, Jimbo 53, Jasini 23) including 157 female respondents and 113 male respondents with participation across all age categories.

The majority of the households (74.7%) are male headed and family units in the villages average at 6 family members, which is higher than the Kenyan average of 3.9 individuals. Islam is the most prevalent religion, with more than 95% of the population following its practices. More than 50% of respondents reported having lived in the area for over 20 years, indicating a deep familiarity with local environmental changes and a potential for long-term stewardship. Fishing was found to be the most dominant livelihood source in Vanga. Fish catches have remained low due to overreliance on, and overexploitation of, nearshore fisheries; hence low income was noted in the survey report. Other livelihood activities included small-scale enterprises such as shops, food vending, motorcycle transport, fish processing/trading, farming and other activities. This concentration of marine-based livelihoods poses sustainability risks, particularly in the absence of effective marine resource management or if socioeconomic pressures increase. Continued pressure on these ecosystems increases the likelihood of overexploitation and heightens household vulnerability to environmental and economic instability. The project will contribute to addressing these concerns by protecting vital fish nursery grounds, aiding species recovery and increased environmental resilience. The social survey found that the majority of respondents were aware of the seagrass project and believed it would bring various environmental and community benefits. Furthermore, there is an abundance of indigenous knowledge and traditional practices in Vanga Bay which can be applied to this project. used for conservation and management of the marine resources within this community-led project.

“We initiated the “tengefu” due to the realization that the seagrasses were under threat and most areas were degraded. This was to ensure the seagrass recovers and for fish to have a conducive environment for breeding and feeding.” Vajiki Chairman

While protecting local coastal ecosystems would present opportunities for local economics, climate change mitigation and adaptation, there are limited frameworks available that support and empower communities to do so. Most of the local communities involved in this proposed project are beneficiaries of the established mangrove conservation project VBF and are aware of the processes, efforts and benefits of a Plan Vivo certified project. The income from VBF carbon credits have supported various community development projects annually, including the building of classrooms, furnishing a local dispensary, donating science laboratory equipment for a local school, and renovating a mosque. Nevertheless, it is important to explore novel methods to secure financial streams and incentivise the initiation of conservation projects to address the global biodiversity crisis, and to 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.

Extreme climate events (e.g. El Niño) have caused flooding, mangrove die-backs 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 and nutrition are heavily reliant on marine habitats as fisheries resources.

The majority of respondents of the survey pointed out that they had not received any sort of education or training on the importance of conserving seagrasses. Those who had participated were primarily BMU members involved in research conducted through KMFRI. Yet, most respondents were aware of the seagrass project and believed it would bring various environmental and community benefits. Among the most highly perceived benefits provided by seagrass were their ecological function as breeding and feeding grounds for fish.

Furthermore, it is understood that, 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 sales of PVBCs.

3.3.2 Expected Socioeconomic Change

The local stakeholders are defined in Section 2.1.1 as the VSPC, the communities of Vanga, Jimbo, Jasini and Kiwegu, the BMUs and associated fishers and the VBF CBO. All of these stakeholder groups are local and live within the project region and are the group that will be negatively impacted under the baseline scenario.

Under the baseline scenario, without this project, the negative trends would continue, fishing would continue at its current rate with no restrictions on location and gear as there is a lack of sustainable funding to support LMMA management and seagrass conservation. Seagrass in Vanga Bay are already in decline and this trend is expected to continue under the baseline scenario, this would mean a significant decline in Vanga Bay and on a national scale as Vanga Bay is home to over 14% of Kenya's seagrass (Harcourt et al., 2018). The current >30% reduction in fish catches over the past decade (Fortnam et al., 2021) would continue due to continued overexploitation and destructive practices and catches would be dominated by small juvenile fish of lower economic and nutritional value. These declines would undermine food security, which is already the leading factor in Kenya's multidimensional poverty index (20%) (UNDP, 2023). Socioeconomic pressures and nutritional challenges would increase the pressure on the fishers and local communities as employment opportunities and sustenance from fishing activities will continue to decline and could lead to people, especially youth, moving away from the area in search of employment opportunities. People's health will be at risk as the loss of fish and income will pose nutritional challenges as well as financial challenges.

As a result of this, community cohesion could decline. Furthermore, under the baseline there is a lack of resources to support the implementation and co-learning of traditional

conservation practices that the community outlined for consideration in the social survey. These include traditionally utilised gear which are non-destructive to the seagrass bed and a system called “ngambi” - this practice included imposing a temporary ban to allow for replenishment of resources, such as fish.

Seagrass ecosystem services also include carbon sequestration and coastal protection, these too will be lost with the loss of seagrass and its associated biodiversity in Vanga Bay. 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 of Vanga Bay 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). Vanga has a seawall due to the impacts of coastal erosion – and one of the VBF community development projects was the building of a seawall to protect a primary school in Jimbo, which was also renovated through VBF carbon credit income – the loss of seagrass will remove a natural buffer and the coastal villages will be more vulnerable to coastal erosion and intense storm impacts exacerbated by climate change.

3.4 Environmental Baseline

3.4.1 Initial Environmental Conditions

The ecological conditions immediately prior to the start of the project are generally one of decline. Seagrass ecosystems constitute the primary ecosystem within the project areas with some areas of shallow reef and sandy bottom. Generally, the seagrass beds within Vanga Bay are made up of diverse species occurring in varying densities and compositions depending on water depth, substrate, tidal patterns, exposure (e.g. intertidal vs subtidal) and interaction with human pressures such as fishing.

Currently, there are some areas in good habitat health but the ecosystem is quite fragmented with high levels of degradation throughout. Seagrasses have been rapidly declining in Kenya at a rate of 1.59% annually ([Harcourt et al., 2018](#)). This reduces the ecosystems’ ability to provide habitat to species of commercial, cultural and conservation concern. Seagrass habitats offer important nursery ground provision and the declining nature of this ecosystem service can be seen in the declines in fish catches locally ([Fortnam et al., 2021](#)).

Total greenhouse gas captured by this habitat and the project areas has not been formally 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, the associated co-benefits of a seagrass ecosystem of increased water quality, shoreline protection, and fisheries enhancement are in decline and would likely continue to do so in the absence of the project.

3.4.2 Expected Environmental Change

Under the baseline scenario, there would be no sustainable funding stream for the long term continuation of the LMMA, resulting in unpatrolled boundaries and a lack of compliance. This would lead to the degradation of the habitat and biodiversity currently being seen in the project areas to continue. Carbon stores would continue to be degraded and suspended sediment would increase due to a decline in seagrass condition and therefore, its ability to trap sediment, reducing overall water quality. This could further impact the seagrasses ability to photosynthesise, further degrading the seagrass environment.

3.5 Project Logic

Table 15 is a summary of the causal links between project activities and expected outcomes and identifies key assumptions.

Table 15: Project Logic

	Description	Assumptions/Risks
Outcomes		
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. 3. Potential for a spillover effect as biodiversity improves, benefitting wider biodiversity in Vanga Bay and contributing to local fisheries economics. 4. The project's proximity to the VBF PV Climate project may generate additional biodiversity benefits by increasing local habitat connectivity. Seagrasses, mangroves and coral reefs work in synergy.	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. 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. Likelihood: The likelihood of these risks are minimal as the ACES team are working closely with both the Vanga Seagrass Project team, KMFRI 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, developing outreach on the importance of seagrass, supporting regulation of fishing activities and promoting sustainable fishing activities and value addition. 2. Secured income from PVBCs which can be used to employ local people (e.g. for patrols) and support community development projects, these are likely to be similar to those funded through the PV Climate project, VBF. 3. Potential spillover effect into local fisheries as biodiversity recovers, improving catches of commercially and culturally important species. 4. Improved opportunities for community members which may support employment opportunities. Examples of roles with transferable skills include committee positions, monitoring and data collection team members, seagrass assessors and LMMA patrollers.	Assumptions 1. The community is engaged in understanding the project and utilising available opportunities. 2. There is sufficient interest and participation from community members. 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. 6. There is collaboration and capacity among partners to offer adequate training and support for project roles. 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. Project interventions and 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. Likelihood 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 VBF will enhance the ecosystem connectivity and subsequent environmental benefits. (Seagrass sequesters 5.06 t CO₂ ha per year, hence 225ha will sequester 1,138 t per year (Mcleod et al., 2011). In addition, work by the current team at a nearby site showed seagrass losses caused 8.36 t CO₂ ha per year. Additional research, using remote sensing, showed an average rate of seagrass loss in Kenya of 1.59% per year (Githaiga et al., 2019); 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.) 3. Protecting and enhancing biodiversity through the project will restore habitat for IUCN Red List species. 4. Conservation of seagrass beds will provide increased resilience to stressors such as changes to ocean and climatic	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 VBF will enhance ecological conditions through increased connectivity of ecosystems. 6. No natural disasters that disturb the seabed. 7. Project interventions will be successful. Risks 1. Project interventions not adhered to. 2. Monitoring methods are not effective, or too expensive. 3. Changes in environmental conditions may affect the relationship between proxy measures and carbon storage.

	conditions through increased diversity of species. 5. 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.	4. Increasing impacts of climate change such as increased sea temperatures, ocean acidification, and extreme weather events could hinder seagrass recovery. Likelihood 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 and activities		
Output 1	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 - LMMA patrols schedule established and local captains/assessors hired. - Community continues to be engaged in the project. - Data collection methods that work for PV accreditation are accessible to the community. - Monitoring training carried out by interested community members.
Activity 1.1	LMMA management activities - Seasonal closure of protected area, gear restrictions, LMMA monitoring and patrols.	Risks: - Risk of low compliance with LMMA management restrictions. - Risk that patrols are ineffective. - Risk that Kenya Fisheries Service may not follow up on any reported illegal fishing in the project area,

		reducing impact of patrols and therefore compliance. Mitigations: The above risks have been mitigated by the community-led nature of this project. The project area, management interventions and gear restrictions were decided by the local community themselves and therefore, engagement and awareness for this project is high. Patrols are currently scheduled to occur 4 times per month and will record both observed real-time activities and will also assess the seagrass for signs of damage from banned fishing gears to understand if banned activities are taking place outside of patrol times. Training will be carried out in conjunction with KeFS and KMFRI to ensure that patrollers are adequately trained. KeFS are the enforcement entity who will be able to act on any reported banned activity. KeFS have been engaged from the beginning and have been attending community meetings around LMMA management and enforcement. the Vanga seagrass committee has stressed the need for action from KeFS from the beginning to ensure management is effective.
Activity 1.2	Community engagement and decision-making activities to implement this community-led project	Risks: - Lack of engagement from the community. - Breakdown in decision-making process. Mitigations: This project is community-led and as a result, we have had high engagement from the beginning. The successes of the VBF PV Climate project in the region has allowed the community to see the benefits of PV projects first-hand

		and as a result, project understanding and engagement is high. Decision-making processes are well-established as the VSPC has been set up under the VBF community benefits organisation and replicated the tried and tested VBF committee that makes decisions on the carbon project. The VSPC is managed through a constitution that was developed by the committee themselves and has clear direction on assigning office-holder positions, how decisions are made and has a clear grievance mechanism. As a result, the committee has a clear and understood process to follow when making project decisions and implementing activities.
Activity 1.3	Documentation and monitoring protocol required for accreditation developed and completed.	Risks: - Monitoring protocol does not yield data with good enough quality for digital analysis. - Monitoring protocol is expensive to execute, creating difficulties for baselining. Mitigations: The project are working closely with Plan Vivo to develop a monitoring protocol and identify equipment that will yield good quality data that is applicable to machine learning systems. The VSP has some initial funding (until March 2026) to support some of the cost of initial baseline data collection. Plan Vivo are also exploring options to support with the initial equipment purchases.
Activity 1.4	Community-accessible seagrass biodiversity monitoring protocol developed and baselining carried out.	Risks: - The monitoring methods required are not accessible to the community and require scientific expertise.

		- Monitoring protocol is expensive to execute, creating difficulties for baselining. Mitigations: The team are working closely with Plan Vivo to ensure the monitoring protocol is community-accessible and interested community members can be involved in data collection. The project staff with support from KMFRI will be equipped to carry out training for interested community members. Some members of the community are already trained as Seagrass Assessors through some previous funding and therefore, already have some monitoring and water skills. The VSP has some initial funding (until December 2025) to support some of the cost of initial baseline data collection.
Activity 1.5	Collaboration with technical partners and relevant institutes.	Risks: - Relationship breakdowns between institutions. - Increased confusion due to differing bureaucratic processes among institutions. Mitigations: Technical partners for this project have a well-established way of working having collaborated on the PV Climate projects VBF and Mikoko Pamoja, reducing the risk of relationship breakdowns. Institutions liaise regularly to ensure all involved understand processes and timelines. Key staff members within organisations act as liaisons to ensure collaboration and knowledge-sharing runs smoothly.
Output 2	Support of Community development. Establishment of funding stream from the sale of the PVBCs.	Assumptions

		- A market for PVBCs emerges and sales generate enough income to fund community development. - Committee effectively manages the community funds and benefits sharing mechanism. - Decisions on community development projects are democratic. - Community are engaged with the project and participate in suggesting development proposals and voting.
Activity 2.1	Education on the project and how funding will reach the local community.	Risks: - The community does not understand benefits sharing mechanism leading to mistrust or confusion. Mitigations: The VSP is in the same region as the successful PV Climate project, VBF. Both projects use the same framework for their benefits sharing structure and therefore, the community are well-versed in the process and have seen tangible community benefits from VBF funding. Furthermore, community engagement has been high from the start and the project is ran by a local committee. The project staff will continue community engagement activities and educating people on the benefits sharing mechanism.
Activity 2.2	Establishment of a committee to oversee benefits sharing activities and manage community funds and projects.	Risks: - Mishandling of community funds or projects. Mitigations: The committee has been established through a democratic process and is made up of 13 members from diverse backgrounds within the community. The committee is

		bound by the constitution that outlines how the committee will make decisions and manage funds. The funds are also held by ACES who act as project coordinators and as a charity, are legally bound to financial transparency. Spending of the funds is decided by democratic community-wide voting where the community development projects with the highest votes are funded.
Activity 2.3	Establishment of a market for PVBCs, locating buyers and marketing credits.	Risks: - Lack of trust of biodiversity crediting projects - Lack of buyers or markets for PVBCs Mitigations: The project is working with Plan Vivo due to their high-integrity and community focused approach. As a result, we hope this will increase trust that the projects have a wide range of benefits are carried out with full community buy-in (and in our case, the project is community-led). Despite biodiversity credits being an emerging market with uncertain demand, 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. Furthermore, credits will be bundled with VBF carbon credits and ACES has already established some early interest from current carbon credit buyers. Plan Vivo are also supporting with educating the market on PVBCs.

TECHNICAL SPECIFICATION

Please find VSP technical specification in Annex 6

3.6 Project Activities

Table includes detail on project activities and inputs.

Table 16: Project Activity Summary

Project Intervention	Project Activities	Inputs
Improved management: Seasonal closure to protect biodiversity and reduce fishing pressure in the project areas. 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.	Patrols of the LMMA to ensure compliance with the closure with a record of all patrols kept. Local engagement and awareness raising led by the Project staff and the VSPC.	Boat hire for patrols. recruitment of competent community members to captain boats. Training organised in conjunction with Kenya Fisheries Service (KeFS) and Kenya Marine Fisheries Research Institute (KMFRI).
Protection: Enforcement of restrictions and closures. And Gear restriction to protect fish and reduce damage to seagrass. 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.	Patrols of the LMMA to ensure compliance with the closure with a record of all patrols kept. Engagement with BMUs and KeFS. Local engagement and awareness raising led by the Project staff and the VSPC.	Boat hire for patrols. recruitment of competent community members to captain boats. Project staff building relationships with the BMUs and KeFS. Collaboration with the BMUs, KeFS and CGoK fisheries department. Training organised in conjunction with Kenya Fisheries Service (KeFS) and Kenya Marine Fisheries Research Institute (KMFRI).
Education: Raising awareness; education on the seagrass ecosystem and the biodiversity found	Awareness campaigns will stem from the project itself, such as the focus on the conservation of the	Staff time led by project staff and ACES to develop project materials such as leaflets/posters.

within, co-benefits generated, and the importance of seagrass conservation for humans, biodiversity and climate.	seagrass meadow to showcase the importance of this ecosystem. Awareness on the carbon and biodiversity of seagrass can be shared in culturally appropriate ways, such 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'.	Workshops and campaigns developed by the project staff with support from ACES.
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3.7 Additionality

To achieve protection of the seagrass and natural regeneration, an additionality assessment was conducted to summarise the main barriers to project implementation and how they will be overcome through VSP interventions.

Table 17 Additionality Assessment Summary

Project Intervention	Main Barriers	Activities to Overcome Barriers
1. Seasonal closure and enforcement of LMMA restrictions and closures (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.	1. Direct involvement of the fishers 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

	- Monitoring and enforcing closures can be resource-intensive and challenging, especially in areas further from the shore. - Fishers may resist closures due to perceived short-term economic losses or lack of trust in the management body. - Limited options for alternative income sources during the closure period can hinder acceptance. - Lack of understanding about the ecological benefits of closures among fishers.	long-term benefits for fisheries. Tracking the effectiveness of the closure and communicating results to the community.
2. Gear restriction (improved management)	- Gear restrictions might disproportionately affect groups using restricted gears. - Insufficient personnel and equipment to monitor and enforce regulations. - Difficulty in ensuring adherence to gear restrictions. - Lack of viable alternative income sources for fishers affected by restrictions. - Deep-rooted fishing practices and traditions can hinder the acceptance of new regulations. - Weak community governance structures and	- Train community members in alternative livelihood options. - Establish effective monitoring and surveillance systems by sourcing for long-term funding. - Foster open dialogue and build trust through participatory decision-making. - Educate fishers about the ecological benefits of gear restrictions and the impact of the restricted gear on seagrass and the marine environment. - Raising awareness on the importance of seagrass as a blue carbon ecosystem and its co-benefits for

	decision-making processes.	humans, biodiversity and climate. 6. Emphasis on the use of traditional/artisanal and/or legal gears. Raising awareness about this.
3. Raising awareness (Education)	1. Lack of capacity to carry out awareness raising activities. 2. Lack of skills in the project region to conduct awareness campaigns or access training to increase skills.	1. Funding through PVBCs and grant funding (through the development stage of this project) will fund a project staff member to lead on awareness raising activities. 2. Project staff to also carry out training to improve local skills.

3.8 Proposed Biodiversity Monitoring

The PV Nature Methodology stipulates 3 target groups for marine projects which will feed into the species pillars. For VSP, the 3 selected groups are seagrasses, fish and slow-moving epibenthic macroinvertebrates.

Vanga Bay contains 9 seagrass species and supports around 14% of all seagrasses in Kenya (Harcourt et al., 2018). Differing seagrass species provide different habitats, structural complexity and food sources for a wide range of species, showing the value of monitoring seagrass at species level. Seagrass species composition is also an <https://goosocean.org/what-we-do/framework/essential-ocean-variables/> Essential Ocean Variable metric which are metrics considered critical for understanding ocean change. Furthermore, *Zostera Capensis*, a IUCN RedListed vulnerable species of eelgrass has been noted in the region. Monitoring seagrass at species level will allow the project to identify if this vulnerable and fragmented species is present in the project areas.

The second target group selected is fish species due to their cultural and commercial importance in Vanga Bay. Fisheries in Vanga have a high diversity in catches however, there has been a noted reduction in biomass of catch and yields in recent years (McClanahan et al., 2025; Fortnam et al., 2021). One study referred to fisheries in Vanga as 'highly overexploited sites' (McClanahan et al., 2025), which could heavily impact communities for both sustenance and economics whilst also degrading biodiversity and ecosystem resilience. As a result, a focus on fish species is imperative as conservation and hopefully natural regeneration and a spillover affect will be a vital biodiversity recovery indicator for the region. Due to the complexities of identifying fish to species-level using digital data collection methods, we aim to identify fish species to family level (e.g. emperor, grouper, snapper, barracuda etc).

The final group is slow-moving epibenthic macroinvertebrates such as sea urchins. Vanga Bay is experiencing seagrass overgrazing by sea urchins due to urchin overpopulation. It is noted that protected areas are important in controlling sea urchin populations in Kenya and globally due to their ability to allow predators of urchins (e.g. invertivore fish species which are also often targeted by fisheries) to recover (Tyrrell, 2014). Monitoring this group will allow the project to monitor the threat of overgrazing and hopefully see an increase in species diversity within this group.

Table 18 provides more details on the tools that may be used to monitor these 3 target groups.

Table 18 Biodiversity Monitoring Tool(s)

Selected Biodiversity Monitoring Tool	Taxonomic Groups(s) the Biodiversity Monitoring Tool will target	The reason why this tool has been selected	Considerations for PV Nature when selecting and monitoring these groups in the Project Region
Required Target Groups			
High-resolution stationary Remote Underwater Video (RUV)	Fish	Captures best data-quality when compared with roving video. RUVs are a common and well-tested sampling method for monitoring fish.	1. Our project areas have high levels of sedimentation due to the ecosystem type and proximity to an estuary. IDing fish to species level from video footage is therefore a challenge. Instead, fish could be ID'd to family level (e.g. snapper, emperor, grouper) 2. Biodiversity patterns within this region remain largely unexplored. 3. Neap tides are best for water calmness and clarity which will aid video quality. 4. High tide data collection best for fish species prevalence.
High-resolution images And High-resolution satellite imagery	Seagrass vegetation	Photo-quadrats are a common and recommended tool for monitoring seagrass ecosystems. They have high prevalence of use in citizen science approaches such as Seagrass-Watch .	1. Water turbidity, seagrass distribution including the occurrence of bare patches, siltation from nearby river mouths during the long and short rainy seasons. 2. Neap tides are best for water calmness and clarity which will aid video quality. 3. Low tide can help facilitate better image quality as it reduces freediving distance that relies on breath hold in sub-tidal areas. 2. Biodiversity patterns within this region remain largely unexplored.
High-	Slow-moving	Slow-moving	1. Biodiversity patterns within this region

resolution images And High-resolution roving (snorkelling) underwater video	epibenthic macroinvertebrates	invertebrates are quite difficult to monitor digitally in seagrass ecosystems due to their ability to hide within the seagrass beds – making them difficult to capture in an image. The team plan to use both photo and video digital data collection to ensure a representative sample can be obtained.	remain largely unexplored. 2. Distribution of epibenthic macroinvertebrates in project areas largely unexplored. 3. Water turbidity, seagrass distribution including the occurrence of bare patches, siltation from nearby river mouths during the long and short rainy seasons. 4. Neap tides are best for water calmness and clarity which will aid video quality. 5. Low tide can help facilitate better image quality as it reduces freediving distance that relies on breath hold in sub-tidal areas. 6. Team members may need to look within seagrass beds to capture imagery or videos of the invertebrates within the sampling plot.
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RISK MANAGEMENT

3.9 Environmental and Social Safeguards

3.9.1 Environmental and Social Screening

The Environmental and Social Screening (E&S Screening) was completed as part of the Project Idea Note (PIN) phase of PV Nature accreditation. The screening was completed by the ACES team who have extensive experience in coordinating community-led projects and ensuring appropriate safeguards are in place and risks are identified. Table 19 shows a summary of the E&S Screening. In addition to the E&S screening, a community-level review and assessment was completed by the VSPC to identify any further risks or mitigations and ensure a participatory approach to risk identification and management was conducted. Finally, NEMA required an Environmental and Social Impact Assessment (ESIA) to be conducted as part of their licensing process and a copy of this has been provided to Plan Vivo directly.

Table 19 Environmental and Social Risks

Risk Area	Likelihood (1-5)	Magnitude (1-5)	Significance (low, moderate, severe, high)
Vulnerable Groups	3	3	Moderate
Gender Equality	1	2	Low
Human Rights	3	2	Moderate

Community, Health, Safety & Security	2	2	Low
Labour and Working Conditions	3	3	Moderate
Resource Efficiency, Pollution, Wastes, Chemicals and GHG emissions	2	2	Low
Access Restrictions and Livelihoods	2	2	Low
Cultural Heritage	1	1	Low
Indigenous Peoples	2	3	Moderate
Biodiversity and Sustainable Use of Natural Resources	1	1	Low
Land Tenure Conflicts	2	2	Low
Risk of Not Accounting for Climate Change	2	2	Low
Other – e.g. Cumulative Impacts	1	1	Low
Overall Project Risk			Low

3.9.2 Environmental and Social Assessment

Environmental and social risks and impacts were reviewed for the project areas and all villages included within the project region. Risks were assessed by the project team and then evaluated by Plan Vivo's Technical Review Panel as part of the PIN process. Legislation such as the Kenyan Constitution was reviewed to develop this plan.

Project staff involved with the development of this plan includes the ACES team, who have extensive experience developing and working with community-led projects, including Plan Vivo-certified projects, and assessing and mitigating risks as part of these projects. The Project staff in Vanga carried out a committee meeting to review risks and compile community suggestions on risk mitigation. This collaborative approach ensures that there is both local community knowledge and technical expertise is included in the report. Significance and mitigations were assessed and developed collaboratively by the project team and community. Annex 8 includes the full E&S Screening report and a community risk review conducted by the VSPC.

As part of the National Environment Management Authority (NEMA) regulations, a NEMA-approved independent consultant was hired to conduct an ESIA of VSP. The ESIA included an extensive desk-based review of all VSP documentation to date, a multi-day in-person assessment of the project, community and key stakeholder consultations to understand perceptions of VSP and an ~160 page report. The ESIA concluded that "the proposed Vanga Seagrass Project is environmentally sustainable, socially acceptable, and consistent with national and international conservation, climate change, and sustainable development objectives. The project presents a significant opportunity to strengthen marine ecosystem conservation, improve fisheries sustainability, enhance climate resilience, and support community livelihoods within Vanga Bay." And that VSP is "expected to positively influence gender inclusion and social equity by promoting participation of women, youth, and vulnerable groups in conservation planning, governance, and benefit-sharing mechanisms."

The ESIA along with key project documentation and the independent assessors recommendations has been submitted to NEMA as part of the project's licensing requirements and we have also shared a copy directly with Plan Vivo.

3.9.3 Environmental and Social Management Plan

Table 20 includes an assessment of the risks identified in the previous assessments and the mitigation measures that have been proposed. This has been cross referenced with project activities.

Table 20 Environmental and Social Risk and Impact Mitigation Measures

Risk/Impact	Mitigation Measures	Project Activity
Risk of project impacting vulnerable groups. <i>For further information on risks and impacts, please see Annex 9.</i>	1. As ACES has been working closely with the community in Vanga for nearly 10 years, the community and the vulnerable or disadvantaged groups are well understood. 2. The project committee is representative of the community and has representatives of these groups (including women, youth, fishers, people with disabilities). The project is led by a 13-member democratically elected committee from the 4 local villages involved. The committee structure ensures the inclusion of at least 4 fishers, 4 women, 2 youth and one person with a disability to ensure there is a diverse committee to represent community interests. 3. If required, we will also hold separate meetings for vulnerable groups such as women to ensure their voices are heard. 4. Overall, we have included vulnerable groups at all stages of project design and development.	Activities: 1.2, 2.1, 2.2
Risk of project impacting gender equality.	1. The project promotes women's leadership and participation in project decision-making evidenced in its committee structure. 2. Empower women with skills and knowledge related to project activities and alternative livelihoods.	Activities: 1.2, 2.2

	3. Social norms and stereotypes that hinder women's participation will be addressed in community outreach forums.	
Risk to Human Rights.	1. This is a community-led project with a democratically elected committee who represent the local communities and villages involved in the project, significantly decreasing impacts to human rights. 2. This project and its interventions have been decided by the local community through a consultation process. 3. The project areas are a relatively small area of Vanga Bay so there are still plenty of other accessible fishing grounds in the region. Furthermore, a spillover effect is likely to be seen in the future, increasing local fishing catches. 4. The VSPC sits under VBF CBO and adheres to its constitution and governance structures. 5. All Plan Vivo projects must ensure equitable benefits sharing with the communities within the project region.	Activities 1.1, 1.2, 1.5, 2.2
Risk to community, health, safety & security.	1. Training will be given to community members involved in project interventions such as monitoring and LMMA patrols. 2. Interventions will include monitoring, patrolling and reporting. No enforcement activities will be carried out by the project and instead, reports will be handed over to the correct institution (e.g. KeFS). 3. We do not foresee any way that our project could exacerbate human-wildlife conflict or increase disease spread. Instead, healthy, diverse seagrass ecosystems can improve access to healthy sustenance and improve coastal defence from storms.	Activities 1.1, 1.2, 1.4,

Risk related to labour and working conditions.	1.The project functions within VBF CBO so is beholden to local employment laws. 2. Training will be given before involvement in relevant project activities (e.g. monitoring and patrols).	Activities 1.1, 1.4, 2.1
Risks related to resource efficiency, pollution, wastes, chemicals and GHG emissions.	1.This project is designed to improve the local ecosystem health, by preserving local seagrass meadows, replenishing the important fish stocks upon which these communities rely and ultimately improve the ecosystem services provided by this habitat.	Activity 1.1
Risk to access restrictions and livelihoods.	1.The project is community-led with a consultative approach taken when designating the LMMA and management interventions (e.g. seasonal closures.) Project areas were designated by those that use and rely on the ecosystem services of the seagrass and designated project areas. 2. This project has been designed to improve the local ecosystem health and replenish the important fish stocks upon which these communities rely and ultimately improve access to their rights. 3. The project has an equitable benefits sharing mechanism to fund community development projects.	Activities 1.1, 1.2, 2.1, 2.2, 2.3
Risk to cultural heritage.	1.The project is not a cultural site under national or international designations. 2. The protection of the seagrass and biodiversity at the site will support important aspects of the communities' culture and heritage.	Activity 1.2
Risk of impact to Indigenous Peoples.	1.This is a community-led project with project direction decided by the democratically elected committee of local community representatives. 2.The designation of the project areas was achieved through a participatory approach	Activities 1.2, 1.5, 2.2

	through consultation with local communities. As was the case for the project design and the benefit-sharing agreement. This project has been designed over two years of work with local stakeholders, including the local community.	
Risk to biodiversity and sustainable use of natural resources.	1.This project is designed to improve the local ecosystem health and replenish the important fish stocks upon which these communities rely and ultimately improve the ecosystem services provided by this habitat.	Activity 1.1
Risk of land tenure conflicts.	1. Vanga Bay seascape is government owned and is part of Kenya's Exclusive Economic Zone (EEZ) however, the BMUs have co-management rights and are actively involved stakeholders in this project.	Activity 1.5
Risk of not accounting for climate change.	1. Project partners, KMFRI, is a national research institution with decades of on-site experience, including in climate change and impacts assessments, observations by KMFRI and the local community have contributed to a good understanding of climate impacts locally including variable rainy seasons and drought. 2. This project will work in the same area as the already established mangrove conservation project, Vanga Blue Forest, which already provides positive benefits for the climate, community and biodiversity and increases the communities' protection from the impacts of climate change and marine-related natural disasters.	Activities 1.1, 1.4, 1.5

3.9.4 Native Species

No non-native species will be introduced to the project area.

3.10 Reversal of Biodiversity Benefits

Table 21 describes and provides supporting evidence for the Impact and Likelihood of risks to the long-term maintenance of Biodiversity Benefits from the project.

Table 21: Risk of Reversals

Risk Factor	Impact	Likelihood	Mitigation Measures*	Score
Social				
Land tenure and/or rights to biodiversity are disputed	3 - High impact as disputes could jeopardise the project being carried out.	0 - There are no land disputes in the project areas, they are effectively managed by the BMUs who have permanent user rights under the current Kenyan constitution.	Activity 1.5 - Collaboration with technical partners and relevant institutes. The project works closely with the BMUs who have permanent user rights under the current Kenyan constitution.	0
Political or social instability	3 - High impact as coastal waters are managed by government institutions.	0 - Since independence in 1963, Kenya has maintained remarkable stability, despite changes in its political system and crises in neighbouring countries.	Activity 1.5 - Collaboration with technical partners and relevant institutes. The project works closely with multiple government institutions such as KMFRI and KeFS.	0
Community support for the project is not maintained	3 - High impact as the project is community-led and relies on high levels of community engagement.	1 - This is extremely unlikely given the community-led nature of our project. Furthermore, the local community	Activity 1.2 - Community engagement and decision-making activities to implement this community-led project.	3

		have seen tangible benefits from VBF and have a high level of buy-in	Activity 2.1 - Education on the project and how funding will reach the local community. Activity 2.2 - Establishment of a committee to oversee benefits sharing activities and manage community funds and projects.	
Economic				
Insufficient finance secured to support project activities	3 - High impact as project needs finance to be sustainable.	2 - We have funding to support the development of this project however, the biodiversity credits market is emerging and demand for biodiversity credits are unknown.	Activity 2.3 - Establishment of a market for PVBCs, locating buyers and marketing credits. This risk will remain high until the market is established as the biodiversity market is currently emerging and demand is unproven.	6
Alternative land uses become more attractive to the local community	2 - Medium impact as the project area will remain multi-use with seasonal	1 - Unlikely as project area designations and management interventions	Activity 1.2 - Community engagement and decision-making activities to	2

	closures and some gears permitted when open to fishing.	were made by the local community. As a result there is a high level of buy-in and decisions were made with both the community and biodiversity in mind.	implement this community-led project. Activity 2.1 - Education on the project and how funding will reach the local community. Activity 2.2 - Establishment of a committee to oversee benefits sharing activities and manage community funds and projects. Activity 1.5 - Collaboration with technical partners and relevant institutes.	
External parties carry out activities that reverse biodiversity benefits	3 - High impact as could affect projects ability to generate credits.	1 - Unlikely as activities can only be carried out with support from the BMUs as they manage user rights. BMU members are included on the project committee and both BMUs have a high level of involvement	Activity 1.5 - Collaboration with technical partners and relevant institutes.	3

		with the project as they are support with LMMA management and patrols.		
Environmental				
Fire	1 - Extremely unlikely to impact sub-tidal ecosystem.	1 - Fire itself will not affect sub-tidal biodiversity. Pollution from ash and increased sedimentation blocking seagrass photosynthesis could theoretically impact the seagrass beds but it is extremely unlikely for a fire of this nature to occur.	No mitigation activities as risk is minimal.	1
Pest and disease attacks	2 - There are some risks such as Seagrass Wasting Disease.	1 - Seagrass Wasting Disease does impact seagrasses globally. However, it has not been noted as a major risk in the project region, instead seagrasses are much more likely to be impacted by	No mitigation activities as risk is minimal.	2

		anthropogenic activity (Mwikamba et al., 2024) which this project aims to address.		
Extreme weather or geological events	2 - Storms do pose a risk of uprooting seagrass and damaging seagrass beds.	1 - The most prevalent extreme weather in the region is droughts which is unlikely to impact subtidal seagrass biodiversity. Extreme storms do occur on rare occasions however, seagrass is a dynamic habitat that can bounce back and we hope that by protecting the project area, resilience will increase.	Activity 1.1 - LMMA management activities - Seasonal closure of protected area, gear restrictions, LMMA monitoring and patrols.	2
Administrative				
Capacity of the project staff to support the project is not maintained	3 - Project staff are an essential team member for coordinating project activities.	1 - Project staff are formally employed through the Vanga seagrass committee. They have formal contracted work hours and report to the VSP Chairman.	Activity 1.5 - Collaboration with technical partners and relevant institutes. Activity 2.2 - Establishment of a committee to oversee benefits sharing	3

		Furthermore, ACES supports with line-management of project staff.	activities and manage community funds and projects.	
Technical capacity to implement project activities is not maintained	3 - Monitoring work especially requires extensive technical capacity.	1 - The project has an extensive support system of international partners and in-country technical support. ACES and KMFRI offer technical insight into the project and support the VSPC to execute project activities and identify training opportunities.	Activity 1.5 - Collaboration with technical partners and relevant institutes. Activity 2.2 - Establishment of a committee to oversee benefits sharing activities and manage community funds and projects.	3

3.11 Leakage

Table 21 describes the projects leakage risk and if required, the mitigation measures for each project intervention.

Table 21: Leakage Risk Mitigation

Project Intervention	Leakage Risk	Mitigation Measures
1. Seasonal closure and enforcement of LMMA restrictions and closures (protection)	There is a risk that the closure could displace fishing activities to outside the project areas, impacting biodiversity of commercially and culturally important fish species.	Activity 1.1 and 1.4: We expect this impact to be mitigated by a spillover effect from the project areas. As seagrass habitat is an important nursery site for juvenile fish species, we are likely to see fish stocks recovering within the project areas and then

		spilling out into the surrounding project region, increasing the amount of culturally and commercially important fish species.
2. Gear restriction (improved management)	There is a risk that rather than switching to more sustainable gears, fishers continue using the same gears, just outside the project areas.	Activity 1.1 and 1.5: We aim to mitigate this risk through awareness campaigns on the benefits of sustainable fishing gears. Furthermore, there will be 4 patrols per month taking place within the project areas. Patrol boats will pass through the project region as a whole to reach the project areas (coming from either Vanga or Jimbo landing sites to the project areas). Currently, fishers do fish with illegal gears within the project region but it is likely that an increase in seeing patrol boats in the region will increase compliance with Kenyan law both inside and outside the project areas.
3. Raising awareness (Education)	This intervention does not pose a leakage risk and instead may improve habitat health outside of the project areas if uptake of less destructive gears among fishers increases.	Activity 1.2, 2.1 and 2.2: VSP will hold community engagement and decision-making activities to implement this community-led project. VSP will provide education on the project, project interventions and the benefits for biodiversity and the community.

3.12 Stacking - Double Counting

Table 22 includes details on Vanga Blue Forest (VBF) a neighbouring PV Climate project that shares a similar Project Region but is based in a different ecosystem (mangroves) with different project areas.

Table 22: GHG Emission Reduction and Removal Projects and Programmes in the Project Region

Project, Programme or Initiative	Scope	Carbon Credit Generation	Risk Mitigation
Vanga Blue Forest (VBF)	VBF has enabled the protection of 460 hectares of mangroves and community development projects supporting the livelihoods of nearly 9,000 people in three villages: Vanga, Jimbo, and Kiwegu through the sale of carbon credits. VBF also features a 'Carbon Plus' approach (see VBF PDD for more details) which takes a donations-based approach to protecting seagrass. VBF is in the same project region, but not the same project area (See Appendix 1 for maps), therefore, there is no stacking with VSP. Furthermore, the seagrass will remain in the VBF carbon PDD under the carbon plus approach as the seagrass area that was monitored as part of the carbon-plus activity was not the project area defined in this PDD under the VSP, so there is no overlap.	Vanga Blue Forest is a PV Climate project certified by Plan Vivo and listed on the S&P Global Environmental Registry.	Not required as not in the same project area and no plans to stack credits.

AGREEMENTS

3.13 Land Management Plans

Management of the project areas was developed through community consultation to agree and designate the LMMA. Plans to implement a LMMA were first discussed and agreed upon at the Vanga BMUs General Assembly in January 2023. Participants of the meeting included BMU members, government agencies, civil society and community members concerned with an ecosystems approach to fishery management. KMFRI then held a further 3 day community consultation in March 2023 with local stakeholders and Vanga and Jimbo BMU members to discuss and review LMMA boundaries, sensitise the community to the project objectives and give further information on community-led conservation projects. Mapping activities were held to review and 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.

The LMMA designation and agreement on management interventions was a community-led process and as a result, considerations around livelihoods and food security were at the forefront. Decisions were made based on local and historical knowledge of fishing and ocean conditions in the region. The project areas are also a relatively small area of Vanga Bay so there are still plenty of other accessible fishing grounds in the region. Furthermore, a spillover effect is likely to be seen in the future, increasing local fishing catches. A copy of the finalised LMMA Management Interventions (land management plan) can be found in Annex 9.

3.14 Crediting Period

Initial crediting period: 30 years

Plans for extension: yes

3.15 Benefit Sharing Mechanism

This project includes multiple villages: Vanga, Jimbo, Jasini and Kiwegu. These villages are represented within the VSPC 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 (in country host institution), KeFS and CGoK.

The project participants decided to form a subcommittee (VSPC) 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 and 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.

As per Plan Vivo requirements, at least 60% of the income from credit sales will go directly to VBF CBO and the VSPC to fund CBO activities and local community benefit and development projects. Community funds will be transferred to the committee bank account and will be managed by the VSPC. The income set aside for community development will be split across the four villages involved each village will use their share to implement their own community development projects (please see section 5.5 Financial Management for further details on how this is managed). Income splits between the villages were decided by the community as part of community meetings in September 2026.

Due to the Biodiversity Market being nascent and VSP to be the first marine project to undergo certification by any biodiversity standard, please note that the following percentage breakdowns are to the best of our current understanding of costs and may vary as the project progresses. Under current estimates, the Vanga Seagrass project pot will be split as follows; 12% will cover administration costs, 25% will cover biodiversity monitoring, 25% will cover project interventions and 38% will be directed to development funds (See Figure 6). Community development projects will be decided on by the community via public meetings known as barazas. The project staff and the VSPC will obtain quotes, manage payments and ensure that projects are implemented and completed in a timely manner. Community projects are decided by the community and driven directly by local need, however, through the neighbouring VBF project, the community have funded local school development, medical equipment for hospitals and repair work on local mosques to name a few. We expect the funding through VSP to be used on similar projects. Furthermore, villages can also explore pooling funds from both projects to undertake community development projects that have previously been too expensive for them to consider.



Figure 6: A breakdown of funding flows for the PVBC income including benefits sharing

3.16 Grievance Mechanism

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. It also means that both the VBF committee and VSPC sit under the same VBF CBO constitution, aligning goals, structure and processes between the two projects. The constitution was reviewed through joint-committee meetings in December 2024 – January 2025 to add seagrass conservation to its objectives and ensure processes work for both committees. Through this overarching constitution, the seagrass committee will benefit from the already established VBF CBO 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.”

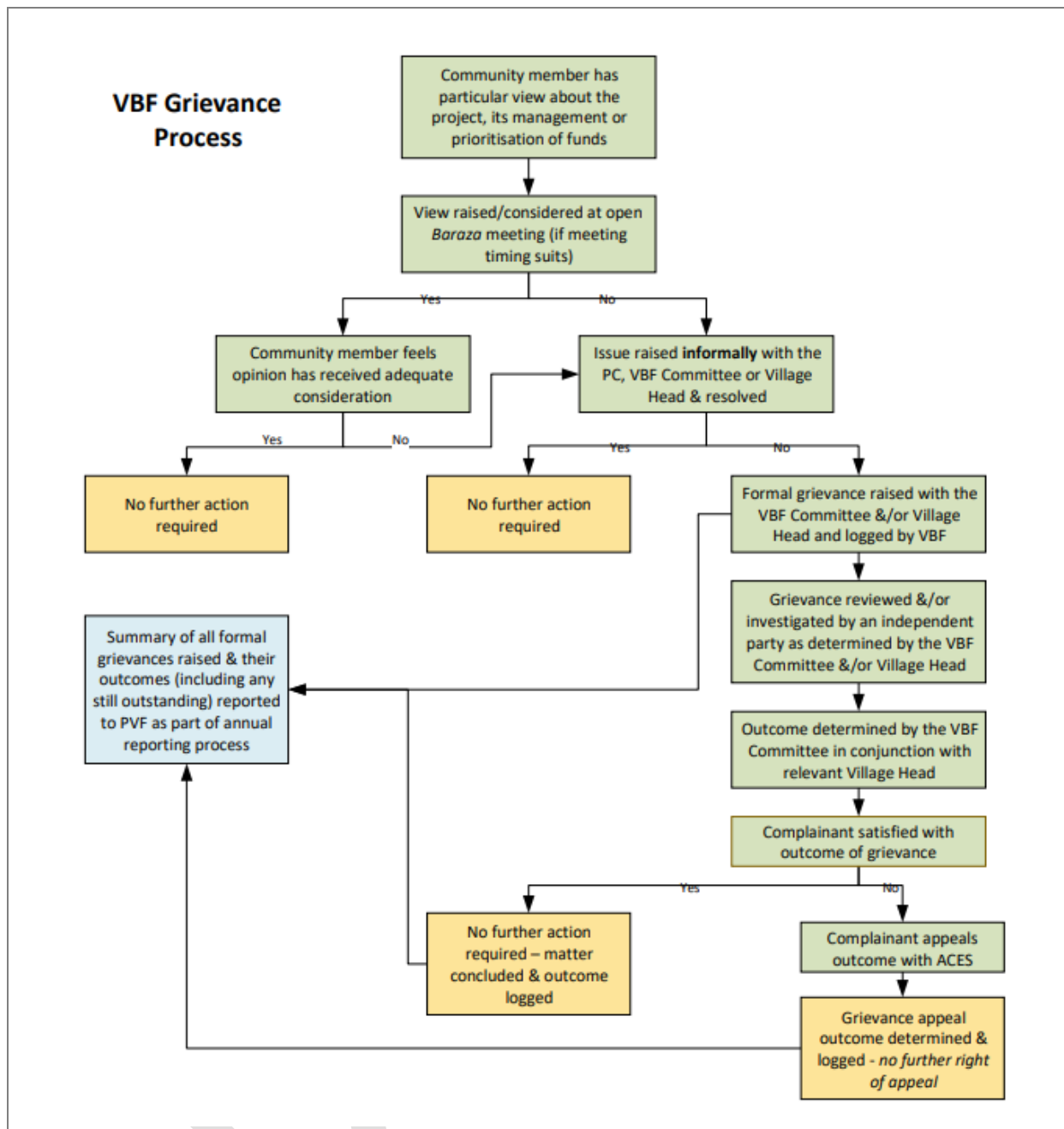


Figure 7: A direct copy of the VBF CBO grievance mechanism from the overarching VBF PDD and constitution.

3.17 Project Agreements

The project agreement was drafted by ACES in line with other community agreements used for similar projects such as VBF and Mikoko Pamoja. The agreement was then reviewed by the VSP project staff and aligned with their inputs. The VSP project staff then translated the Project Agreement to Kiswahili before holding a committee meeting with the VSPC where all members of the committee could read the agreement and then deliberate. This iterative process happens until all parties are happy with the draft document and a collaborative agreement is agreed upon. The agreement is then signed by multiple committee members and ACES, a copy of the agreement is in Annex 10

The agreement is outlined for a 30-year period in line with the crediting period for the project as this will ensure that the community are receiving sustainable financing from the sale of biodiversity certificates to effectively implement and monitor project interventions in line with this PDD with support from ACES, KMFRI and other partners. The project agreement included a withdrawal mechanism as any party has the right to give 30 days notice to withdraw.

The project agreement outlines the leadership role of the VBF CBO, a local community-based organisation representing the wider community. No part of the project agreement can diminish or threaten project participants' rights to land and/or resources.

4 Monitoring and Reporting

Indicators

4.1 Progress Indicators

Progress Indicators (Table 23) will be measured annually and will give an indication as to the success of the project activities.

Table 23: Progress Indicators

Output/Activity	Indicator	Means of Verification
Output 1 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.	PI1: PV Nature accreditation achieved by 2026. Certification maintained through annual reporting and verification events (estimated every 5 years).	Formal confirmation of PV Nature accreditation by PV. Submission of annual reporting and monitoring requirements to ensure continued PV Nature accreditation is achieved.
Activity 1.1 LMMA management activities - Seasonal closure of protected area, gear restrictions, LMMA monitoring and patrols.	PI2: At least 2 patrols completed per month to monitor and encourage adherence to management activities.	Patrol reports that are completed by the VSP project staff after every patrol.
Activity 1.2 Community engagement and decision-making activities to	PI3: Completion of committee meeting reports by the VSP project staff	Reports submitted to ACES following committee meetings by VSP project

implement this community-led project	following decision-making meetings, reports reviewed at least quarterly by ACES. PI4: Records kept of community engagement activities. At least 4 community engagement activities or training/workshop events per year.	staff. Attendance records and feedback recorded from outreach and training events.
Activity 1.3 Documentation and monitoring protocol required for accreditation developed and completed.	PI5: Monitoring protocol developed by January 2026 ready for baseline data collection.	Successful monitoring protocol developed and approved by PV. PDD approved by PV.
Activity 1.4 Community-accessible seagrass biodiversity monitoring protocol developed and baselining carried out.	PI6: Baseline data collection completed in conjunction with participating community members using accessible data collection protocols in early 2026.	2x training events held by VSP project staff to train participating community members in data collection techniques. Attendance records collated. Attendance records and reports produced from baseline data collection activities.
Activity 1.5 Collaboration with technical partners and relevant institutes.	PI7: Vanga-based technical partners engaged in relevant meetings by VSPC throughout project development (e.g. KeFS Fisheries Officer attended the committee meeting on LMMA patrols). PI8: Research-based partners engaged in delivering technical expertise to the project (e.g. Kenyan-based ENU PhD student to support the development of the monitoring plan).	Attendance records and reports from VSPC meetings/activities. Engagement of PhD students during monitoring protocol development. Established technical partner ways-of-working e.g. proof of recurring catch-ups.

	PI9: Regular communication between key partners (e.g. ACES has monthly meetings with VSP staff).	
Output 2 Support of Community development. Establishment of funding stream from the sale of the PVBCs.	PI10: Sale of PVBCs to begin in 2028. At least 60% of funds to be given to the community from the sale of PVBCs annually. PI11: Funds will be managed and spent by the VSPC following community decision on projects to fund.	Reports from VSPC and in-country project staff. Receipts, invoices, pictures.
Activity 2.1 Education on the project and how funding will reach the local community.	PI12: Committee meetings and outreach events covering the benefits sharing mechanism to be conducted by March 2026. Materials (e.g. posters) to be developed by end of 2026 to be displayed in the VBF office (similar to materials used for VBF project).	Reports from VSPC meetings, attendance records, reports from VSP project staff, pictures showing displayed materials.
Activity 2.2 Establishment of a committee to oversee benefits sharing activities and manage community funds and projects.	PI13: Committee to be established alongside project development. Sensitisation work on managing funds and updates on PV Nature to be given throughout 2025-2028 by the project staff member. Committee to lead on decision-making and project activities. Full management of the funds and community project development to commence in 2028 alongside the first planned sale of PVBCs.	Committee meeting attendance records and reports.

4.2 Socioeconomic Indicators

Table 24 describes VSPs indicators that will be used to monitor livelihood status of project participants and other local stakeholders.

Table 24: Socioeconomic Indicators

Socioeconomic Indicator	Means of Verification
Amount of income from sale of PVBCs used for community development projects and type of community development projects funded (disaggregated by village).	Annual monitoring and reporting
Number of training sessions delivered and number of community members trained (disaggregated by gender).	Training attendance records/registration sheets.
Number of partnerships with local, national and international institutions.	Annual monitoring and reporting
Amount of income from sale of PVBCs used for community development projects and type of community development projects funded (disaggregated by village).	Annual monitoring and reporting

4.3 Environmental Indicators

Table 25 describes VSPs indicators that will be used to monitor ecological conditions.

Table 25: Environmental Indicators

Environmental Indicator	Means of Verification
Seagrass habitat health will be monitored under the PV habitat pillars (pillars 4 and 5).	Annual monitoring and reporting
Hectares of mangroves protected in the project region through VBF (mangroves and seagrass work in synergy).	VBF annual monitoring and reporting

MONITORING

4.4 Monitoring Plan

The requirements of PV Nature stipulate that the biodiversity monitoring plan for this project will be developed by the VSP team in conjunction with Plan Vivo and the data analysis provider. This plan will be agreed by all parties and data-collection will take place as stipulated by this plan. This is a requirement to be able to issue and sell PVBCs. The digital

data collection approach that can be third-party audited ensures there is a strong degree of transparency within the project. The sample selection, frequency of assessment and the groups chosen for the biodiversity monitoring is decided in collaboration with researchers, both local and international to ensure decisions are evidence-based. Full details will be included in the biodiversity monitoring plan in Annex 11. Progress Indicators (see Section 4.1) and Environmental Indicators (see Section 4.3) will be monitored for the project areas. As some parts of the project areas are sub-tidal, local boats and boat crews will need to be hired for biodiversity monitoring and extensive equipment is needed for the digital data-collection (GoPros, Cameras, Phones etc.). Biodiversity monitoring will be carried out by the VSP project staff member and trained members of the local community.

This project will follow the same procedure as other ACES managed projects (Mikoko Pamoja and Vanga Blue Forest); Annual Reports will be used to report on annual monitoring activities and Socioeconomic Indicators. Other activity-based and project indicators will be reviewed as part of the annual reporting process that will be submitted to Plan Vivo. Furthermore, the project will need to be validated and then verified every 5 years as per the PV Nature protocols.

4.5 Progress Monitoring

Please see below progress indicators and milestones

Table 26: Progress monitoring

Indicator	Milestones	Potential corrective actions
PV Nature accreditation achieved by 2026.	Approved PDD.	Work with the project team and Plan Vivo to meet accreditation requirements.
2 patrols completed per month to monitor and encourage adherence to management activities.	24 patrols per year.	Work with VSPC, KEFS and BMUs to identify why patrols aren't occurring as scheduled. Address any concerns and barriers.
Completion of committee meeting reports by the VSP project staff following decision-making meetings, reports reviewed monthly by ACES. Records kept of community engagement activities. At least 4 community engagement activities or training/workshop events per year.	250 community members actively engaging with outreach events, training or workshops. 100% of committee meeting reports submitted to ACES annually.	Provide training for project staff. If capacity is preventing milestones being reached, explore hiring an assistant staff member support the current team with activities and reporting.
Monitoring protocol developed by early 2026	Fully developed and approved	Collaboration between the VSP team, PV and data analysis provider to develop the

ready for baseline data collection. PDD to be completed in 2026	monitoring protocol that is functional and robust. Approved PDD.	monitoring plan. Report back on any barriers or areas of concern to ensure the plan is functional. Work with the PV and VSP teams to address any areas of concern in the PDD.
Baseline data collection completed in conjunction with participating community members using accessible data collection protocols in Spring 2026.	100% of baseline data and subsequent yearly biodiversity monitoring data collected and submitted to PV/data analysis provider.	Review any barriers with the VSP project staff and community. Address any challenges (e.g. capacity challenges, extreme weather preventing data collection). Work closely with the PV team to keep them informed and review actions to address barriers.
Vanga-based stakeholders/partners engaged in relevant meetings by VSPC throughout project development (e.g. KeFS Fisheries Officer attended the committee meeting on LMMA patrols). Research-based partners engaged in PV Working Group and PV-Project meetings on monitoring/data-collection throughout project development. (e.g. Kenyan-based ENU/KMFRI PhD student to support the development of the monitoring plan). Regular communication between key partners (e.g. ACES has fortnightly meetings with VSP project staff).	Local stakeholders (e.g. BMUS, KeFS) present in 100% of relevant meetings (e.g. meetings on management of the LMMA). Engagement of ENU/KMFRI PhD student in relevant monitoring meetings (that they can attend within their own capacity) throughout the duration of their PhD (2024-2027).* <i>*Please note that PhD student is supporting the development of the monitoring plan during project set-up phase however, support from a PhD student will not run throughout the full 30-year crediting period.</i>	Discuss reasons for disengagement of local stakeholders with the VSPC and project staff. Support the team with relationship building and engagement with stakeholders as required. Reach out to PhD student to understand reasons for disengagement. Work with student and supervisors (ENU/KMFRI) to address concerns and barriers.
Sale of PVBCs to begin in 2028. At least 60% of funds to go to the	Proof of at least 60% of funds going to VSPC annually.	Will be achieved as is a strict requirement of PV Nature.

community from the sale of PVBCs annually. Funds will be managed and spent by the VSPC following community decision on projects to fund.		
Committee meetings and outreach events covering the benefits sharing mechanism to be conducted by March 2026. Materials (e.g. posters) to be developed by May 2026 to be displayed in the VBF office (similar to materials used for VBF project)	Five outreach events/committee meetings or barazas on the project to be conducted annually. 3 VSP materials/posters to be publicly displayed in VBF office. Annual review of materials/posters to ensure they remain relevant and out-of-date materials updated and replaced.	Work with the VSP project staff and VSPC to understand and address barriers.
Committee to be established alongside project development. Sensitisation work on managing funds and updates on PV Nature to be given throughout 2025 by the project staff member. Committee to lead on decision-making and project activities. Full management of the funds and community project development to commence in 2028 alongside the first planned sale of PVBCs.	Democratic and functional committee to be in post and working in compliance with the VBF CBO Constitution.	Work with project staff and VSPC to address any non-compliance.

SOCIOECONOMIC AND ENVIRONMENTAL MONITORING

4.6 Progress Monitoring

For each of the socioeconomic indicators, we identified targets for each period of 5- years throughout the crediting period.

Table 27: socioeconomic progress monitoring

Socioeconomic indicator	Baseline	5-year rolling target
Number of people in the project region.	Community of Vanga (population of ~10,000 people), Jimbo (891 people) Jasini (130), and Kiwegu (6,503)	Review community figures every 5 years via latest Kenyan census or most appropriate means for gathering this data.
Amount of money given to VSP for community projects.	0	Difficult to set a target in KESH with biodiversity credits being an emerging market. Ensure 60% of funds from the sale of PVBCs have gone to the community annually.
Types of community projects funded by VSP (disaggregated by participating village).	0	5 projects funded per village, 25 projects funded in total (1 project per year per village).
Total number of trainings delivered.	0	1 training per year, 5 trainings in a 5-year period.
Number of community members trained (disaggregated by gender).	0	15 community members annually with 30% being women as per Kenyan Constitution requirements for female engagement.
Employment creation/hiring.	1 full-time staff member	1 full-time staff member employed throughout the 5-year period. At least 3 casual hired roles e.g. paid boat captains for LMMA patrols.
Number of partnerships with national and international institutions.	5 (VSP + ACES, VBF, KeFS, KMFRI, ENU)	At least 5 partnerships maintained by VSP at all times.

4.7 Environmental Monitoring

For each of the environmental indicators, we identified targets for each period of 5- years throughout the crediting period.

Table 28: Environmental progress monitoring

Environmental indicator	Baseline	5-year rolling target
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Seagrass habitat health will be monitored under the PV habitat pillars (pillars 4 and 5).	To be assessed as part of the baseline data collection.	Seagrass habitat health to be maintained or above the baseline data collected (requirement for conservation projects).
Hectares of mangroves protected in the project region through VBF (mangroves and seagrass work in synergy).	460 hectares of mangroves protected.	VBF to maintain or increase the number of hectares protected.

4.8 Sharing Monitoring Results

Annual reports will be developed by the project staff and VSPC with support from ACES. An annual committee meeting will be organised to review and discuss the final annual report. The meeting will cover the report findings, key project activities, project partner feedback and decisions will be made by the committee regarding adjusting project ways of working if required.

Reports will be shared with all project partners and stakeholders and feedback from these stakeholders will be encouraged. In addition, annual reports and verification reports will be published publicly on the Plan Vivo website.

Changes in Livelihood and Ecosystem Indicator values for the community groups will be reported to all relevant stakeholders, including relevant technical partners and national authorities in an agreed manner e.g. brief reporting document or section from Annual Report. Feedback from these stakeholders will be welcomed and specifically sought as to the likely causes of any negative trends in these indicators and their relationship with the project.

REPORTING

4.9 Annual Report

This project will follow the same procedure as other ACES managed projects (Mikoko Pamoja and Vanga Blue Forest); annual reports will be made for each calendar year (reporting period will be January to December of each year) with expected submission date before December 31st of each year. The first report is expected to cover the period of 2026 - the expected project launch year.

The annual reports will be compiled using the Annual Report Template provided by Plan Vivo and made publicly available on the Plan Vivo website (with sensitive information redacted). If any of this or other information results in the requirement of necessary changes to the original Project Design Document (PDD), this will need to be summarised in the Annual Report and an amended PDD will be submitted to Plan Vivo.

4.10 Record Keeping

Record keeping will be managed by the VSP project staff (who reports to the VSPC) and ACES. ACES will manage record keeping of PVBCs and the project staff will manage all record keeping for project-related activities. A project database chart can be seen in Annex 12.

Table 29: VSP record keeping

Record title	Recording	Storage
Project agreements	Formal documents signed by relevant parties. The project staff are responsible for obtaining relevant signatures.	Stored in a shared drive that is managed by ACES and accessible to the VSP staff. Also stored in the VBF CBO offices.
Land management plans	LMMA management was agreed and recorded during community consultations led by the BMUs. The final document is stored on the ACES shared drive in English and within BMU records in Kiswahili.	Stored in a shared drive that is managed by ACES and accessible to the VSP staff.
Geographic locations of project areas	Shapefiles of the project areas have been developed by KMFRI and ACES. The project staff are responsible for collaborating with partners to obtain these and ensure they are relevant.	Coordinates of the project area are held by ACES, KMFRI and the relevant BMUs. Shapefiles are stored within ACES shared drive and accessible to the project staff. KMFRI and the BMU store copies of the shapefiles in their own internal systems.
Monitoring results	Monitoring results are collected by the project staff with the support of community members. Monitoring results will be digital files (e.g. photo/video).	Monitoring results are stored on the ACES shared drive (where possible given potential large file size of videos and upload times) and an external hard drive. When not in use, the external hard drive will be stored behind a lock.

		Monitoring results will be shared with Plan Vivo and the data analysis provider as required.
Plan Vivo Certificates	PVBCs will be issued from this project from Plan Vivo to ACES.	PVCs issued from this project will be stored on the Trusticate registry within ACES' Trusticate account.

5 Governance and Administration

5.1 Governance Structure

This project includes multiple villages: Vanga, Jimbo, Jasini and Kiwegu. These villages are represented within the VSPC which is the vehicle through which the project will be managed. ACES offer technical and management support in collaboration with other organisations - including KMFRI, KeFS, CGK 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 VSPC 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 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.

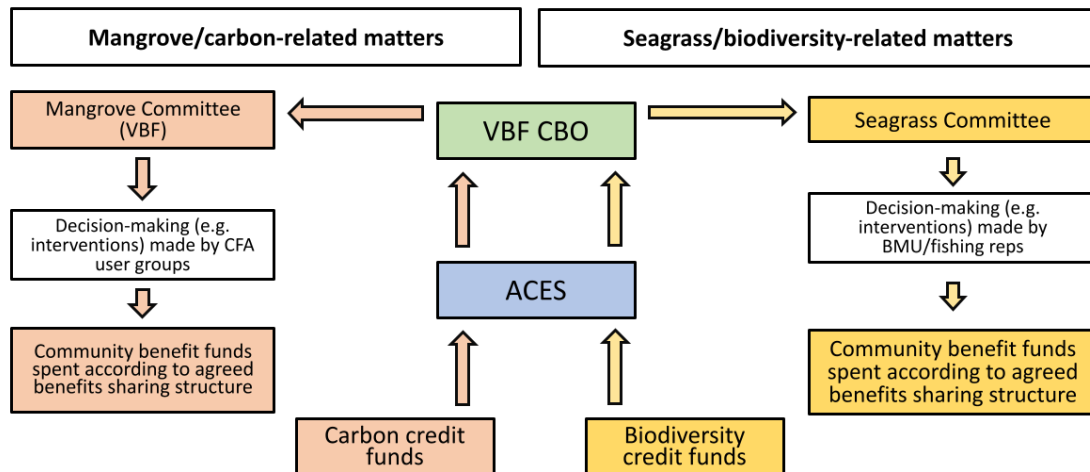


Figure 8: The VSPC within the already established VBF CBO, decided in a community consultative meeting in February 2024.

The VSPC composition was decided in a consultative meeting held in March 2024.



Figure 9: © 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.



Figure 10: © 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 VSPC structure, committee member selection was discussed; 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 – due every 3 years - ensuring a full rotation for all the villages per group. Local stakeholders are represented by the VSPC which was formed as an inclusive committee representing women and youth. Members of the current committee were elected in mid-2024 and are working collaboratively with ACES and relevant stakeholders on project development.

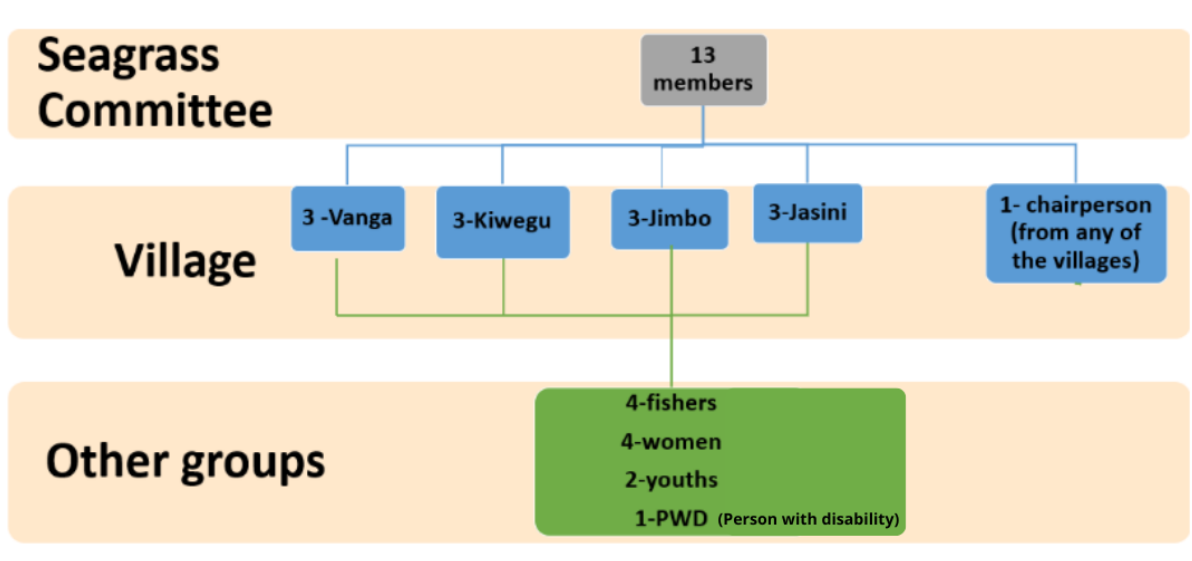


Figure 11: The VSPC structure, decided in a community consultative meeting in March 2024.

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 proposed project areas. Barazas, open community meetings, will be used to keep the project participants informed by the project staff and committee (for example, updates on income generated from the project). Display boards, and other culturally appropriate notification methods (e.g. disseminating information via village chairs) are established and used by VBF and will also be used by VSP to make information relating to this project publicly accessible.

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

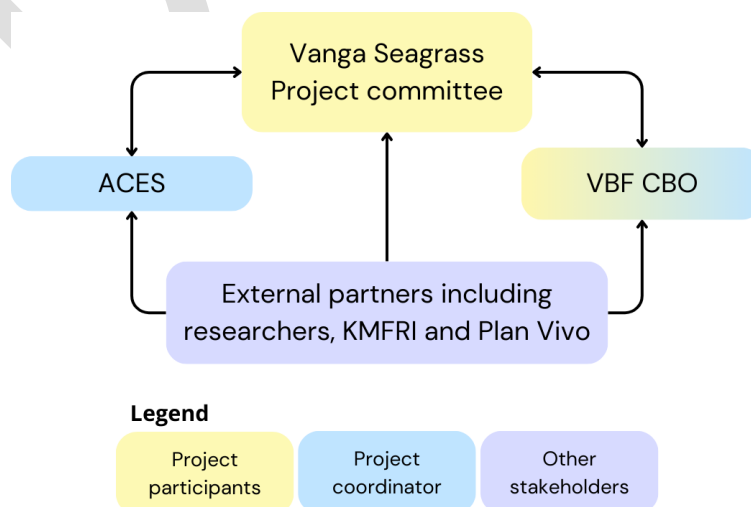


Figure 12 Organigram that demonstrates how the Project participants, Project coordinators and other stakeholders will be involved in this project. For full information on stakeholders please review section 2.0 Stakeholder Engagement.

5.2 Equal Opportunities

Avoiding unfair discrimination

The project works hard to prevent unfair discrimination at all levels of work. The committee includes a set number of places for women, fishers, youth and people with disabilities to ensure demographics are not excluded and the project has fair representation. This reduces the likelihood of unfair discrimination as a wide range of the community is represented in the committee and their perspectives can be voiced when planning project interventions and activities.

When recruiting staff, such as the VSP project officer, the project ensures that we are an equal opportunities employer. Job descriptions actively encourage applications from minority or underrepresented groups. Interview panels are diverse to reduce bias and to not discriminate based on protected characteristics. For the project officer role funded by ORRAA to support project development advertised in October 2024 and successfully recruited in November 2024, the interview panel included representation from the community, local government and KMFRI and consisted of a range of ages, genders and backgrounds, reducing the likelihood of unfair discrimination.

Elite capture of project benefits minimised

Elite capture of project benefits is minimised through the community-led approach to managing the project. The project is led by a 13-member committee who are democratically elected, reducing the opportunity for a few individuals to capitalise on the project. Furthermore, committee member terms are served for a period for 3 years and can be renewed once. Executive committee member posts (chairperson, treasurer etc.) can be held for a period of 3 years and are non-renewable. This ensures a fair turnover of community representation to prevent elite capture. The committee is also governed by a constitution which outlines how decisions are made, finances are managed and project activities are planned, further reducing the opportunity for elite capture of project benefits. As a project offering funding for community projects through the sale of biodiversity credits, all decisions on which projects are to be funded are made on a community level. Community members can nominate projects for consideration and decisions are made through community-wide voting in barazas. This ensures project benefits are decided on at the community level and not by a small number of individuals.

Key mechanisms, including the benefit sharing mechanism, are explicitly communicated; the VBF benefit sharing mechanism is represented in a poster in the VBF office space, where community consultations are usually held and that people are free to visit.

Opportunities for local people

This project is community-led and governed by a 13-member committee made up of democratically elected local community members. The committee includes representatives from a wide demographic including women, youth and people with disabilities. Within the committee there are a number of key positions such as chairperson, secretary and treasurer and a number of sub-committees that elected members can participate in. This offers local opportunities to lead on biodiversity conservation and develop skills. Committee positions are voluntary but travel costs are covered and sustenance is provided at meetings and activities.

Other voluntary opportunities include partaking in monitoring activities. community members are able to volunteer as seagrass biodiversity monitoring assistants with activities supervised by the VSP project staff. Volunteers can gain skills in a wide range of inter and sub-tidal biodiversity data collection activities such as seagrass identification and BRUV drops. Monitoring volunteers will also be offered training opportunities such as water safety and swim training when available.

The Project officer/coordinator position is one that is almost certainly given to someone from the Kenyan coast; as has been the case in VBF and Mikoko Pamoja. Social justice research in the project site revealed a desire for merit-based appointment of this position over hiring exclusively from the local community; however, it is likely that a qualified candidate from the community would be favoured. Other paid employment may arise from the project, including an assistant project coordinator.

The project also offers a number of paid opportunities for the local people, namely for fishers as they are a key stakeholder in this project. In order to encourage compliance with the LMMA management interventions, LMMA patrols will be carried out. For these, the project will hire local boat captains to conduct patrols in collaboration with VSP. This provides a paid opportunity to the community and also an opportunity for skills development. Community members participating in LMMA patrols will be offered training from KMFRI and KeFS in conducting patrols and also identifying seagrass and recognising signs of damage from prohibited activities.

5.3 Legal and Regulatory Compliance

Table 30 shows the national and international policies, laws and regulations that affect the project.

Table 30: Legal and Regulatory Compliance

Policy, Law or Regulation	Relevance	Compliance Measures
Constitution of Kenya, 2010	Local people are formally recognised as primary resource users.	The project recognises the local communities as primary resource users.
	The Constitution also upholds a two-thirds gender rule to increase inclusion of women and encourage	The project upholds the Constitutions two-thirds gender rule. An example of

	women to assume leadership roles and involvement in decision-making processes. The Constitution details the right to a clean and healthy environment.	this is the inclusion of 4 women within the VSPC. The Constitution provides a basis for the project activities surrounding environmental protection and management
Environmental Management and Coordination Act (EMCA), 1999	Establishes the National Environment Management Authority (NEMA) as the primary regulatory body for environmental protection and management.	NEMA will be consulted to review the project as required. Currently, Environmental and Social Impact Assessments are required. The project will consult with NEMA and will conduct an Environmental and Social Impact Assessment.
Wildlife Conservation and Management Act, 2013	Provides for the protection, conservation, sustainable use, and management of wildlife in Kenya.	This Act applies to all wildlife resources on public, community and private land, and Kenya territorial waters. It stipulates that Kenya Wildlife Service (KWS) must advise on community wildlife conservancies/sanctuaries. As a result, the project will engage with KWS regarding the project.
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. 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	This act provides a basis for establishing community conservation areas within the marine environment (Such as the LMMA). This act also highlights the need for the project to engage closely with the local BMUs.

	involvement in fisheries management and development.	
Community Land Act, 2016	Recognizes the rights of communities to manage their land and resources.	Supports the development of the LMMA (Tengefu).
Kwale County Climate Change Action Plan 2023 – 2027 and the supporting Kwale County Spatial Plan 2022 -2032:	Outlines a Climate Change Action Plan to protect and restore ecosystems The County Spatial Plan seeks to transform the livelihoods of the people of Kwale and improve their quality of life	The project aligns with section 3.2.3 Water and the Blue Economy interventions in the Climate Change Action Plan to protect and restore ecosystems aimed at improving the blue economy. The County Spatial Plan seeks to transform the livelihoods of the people of Kwale and improve their quality of life by creating employment opportunities, poverty reduction interventions, improvement of environmental conditions, delivery of infrastructure and services, harnessing the full potential of the County resources and good governance. The project aligns well with the County Spatial Plan.
National Biodiversity Strategy and Action Plan (NBSAP)	Outlines Kenya's overarching goals for biodiversity conservation. Highlights the importance of Kenya's biodiversity to national socio-economic and cultural sustainability.	Supports the importance of the project and local biodiversity to socio-economic and cultural dynamics. Encourages intensification of sustainable management and conservation of natural resources - highlighting support for biodiversity conservation activities.
International agreements	Kenya is a signatory to the Convention on Biological Diversity (CBD), which	Highlights Kenya's overarching commitment to biodiversity conservation,

	provides a global framework for biodiversity conservation.	showing that the project aligns with national and international goals and targets.
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5.4 Financial Plan

Financial support for the project development has been secured by multiple grants (including one philanthropic grant from Dona Bertarelli Philanthropy and a further grant from Ocean Risk and Resilience Alliance (ORRAA)); these grants will support the academic and developmental 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 data analysis providers as part of this co-learning and iterative experience in developing this project specifically for monitoring biodiversity in line with the principles of PV Nature and the methodology. A detailed financial plan will be provided to Plan Vivo as part of Annex 14.

5.5 Financial Management

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 as per the PV Nature requirements where At least 60% of income from the sale of PVBCs , after payment of any charges, taxes or similar fees levied by the host country, must directly benefit the Project Participants (please see Figure 6 for full details). The 60% will be managed by the VSPC within the VBF CBO to implement this community-based conservation project and also dedicate funds to local development.

In the carbon projects that ACES coordinates, they have never needed to retain the maximum of 40% meaning that the project participants receive more than 60% (usually around 80%) of the credit income. We hope to be able to achieve similar figures in this biodiversity project.

ACES will receive a maximum of 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 (see Figure 13 and Figure 6 in section 3.1.5 Benefit Sharing Mechanism). As a registered Scottish charity, ACES undergoes annual financial audits by a chartered accountant. Audited accounts are also submitted to the Office of the Scottish Charity Regulator for review. VSPC also holds its own bank account within VBF CBO for project funds. This bank account will be audited by an accountant registered with the Institute of Certified Public Accountants of Kenya on an annual basis.

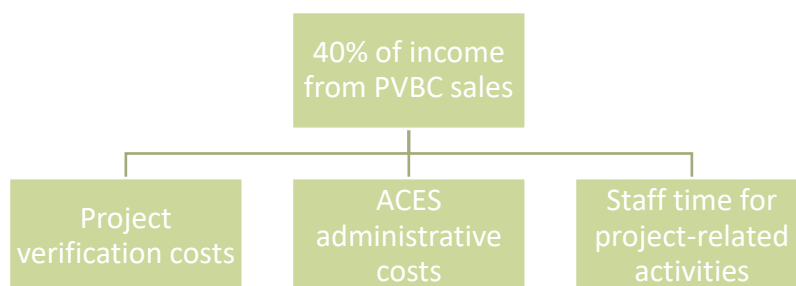


Figure 12: An outline of the intended use of 40% of the income from the sale of the PVBCs issued from this project.

At least 60% income sent to the VBF CBO community bank account and will be managed by the VSPC in line with the benefit sharing that has been agreed through stakeholder consultation and detailed in section 3.15 Benefit Sharing Mechanism in this PDD. Project activities and relevant administration costs will be covered by the income to ensure the sustainability of the project and community-led implementation. A portion of the income from PVBCs will be used to fund local community benefit and development projects. The Development Fund Pot (see Figure 6 section 3.15) will be divided between funding project sustainability and community development projects. The project sustainability fund will be managed by the Beach Management Units with the aims to support and uplift fishers. Fishers are the main user group of the LMMAs so it was prudent to have long-term funding to support fisher livelihood work through the project. Community development projects funding will be split across the four involved villages (see Figure 6 section 3.15); each village will use their share to implement their own community development projects. Income splits between the villages was decided through the VSPC committee and community meetings held in September 2026. The splits took into account population size and also resource splits (e.g. Vanga is home to a central hospital which is utilised by all villages).

The community development projects will be determined by community consultations involving the project staff and committee, where community priorities and costings will be determined by the VSPC and then presented to each village community at barazas for voting. The project staff and the VSPC will obtain quotes, manage payments and ensure that projects are implemented and completed in a timely manner. Community projects are decided by the community and driven directly by local need, however, through the neighbouring VBF project, the community have funded local school development, medical equipment for hospitals, maternity ward development, access bridge building and repair work on local mosques to name a few. We expect the funding through VSP to be used on similar projects. Furthermore, villages can also explore pooling funds from both projects to undertake community development projects that have previously been too expensive for them to consider.

DRAFT

6 Annexes

Annex 1 – Project Boundaries and Habitat Maps

Geospatial data files have been provided in a separate folder for the following figures:

Figure A1.1: Project region map showing both project areas and the presence of seagrass beds within Vanga Bay. Seagrass coverage data is from the mapping work conducted as part of Harcourt et al (2018).

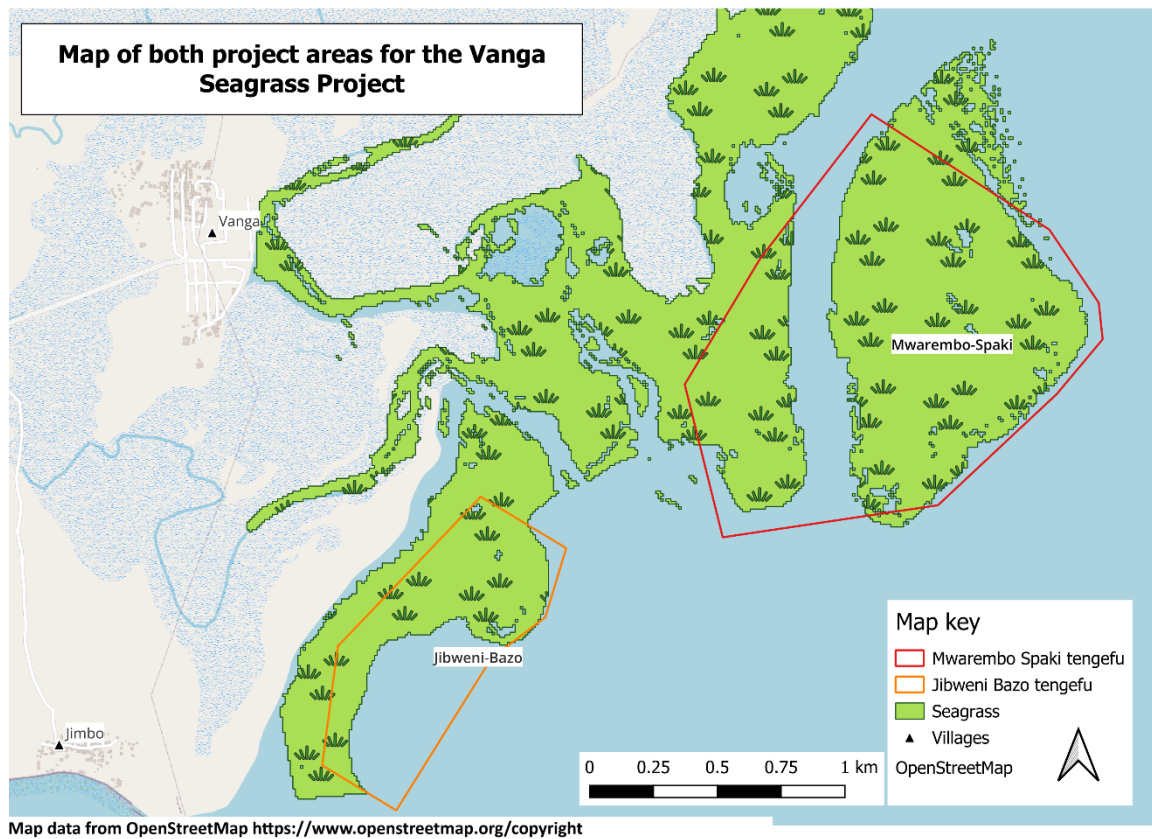


Figure A1.2: VSP project areas in relation to neighbouring protected areas

Map of Vanga Seagrass Project areas in relation to local protected areas

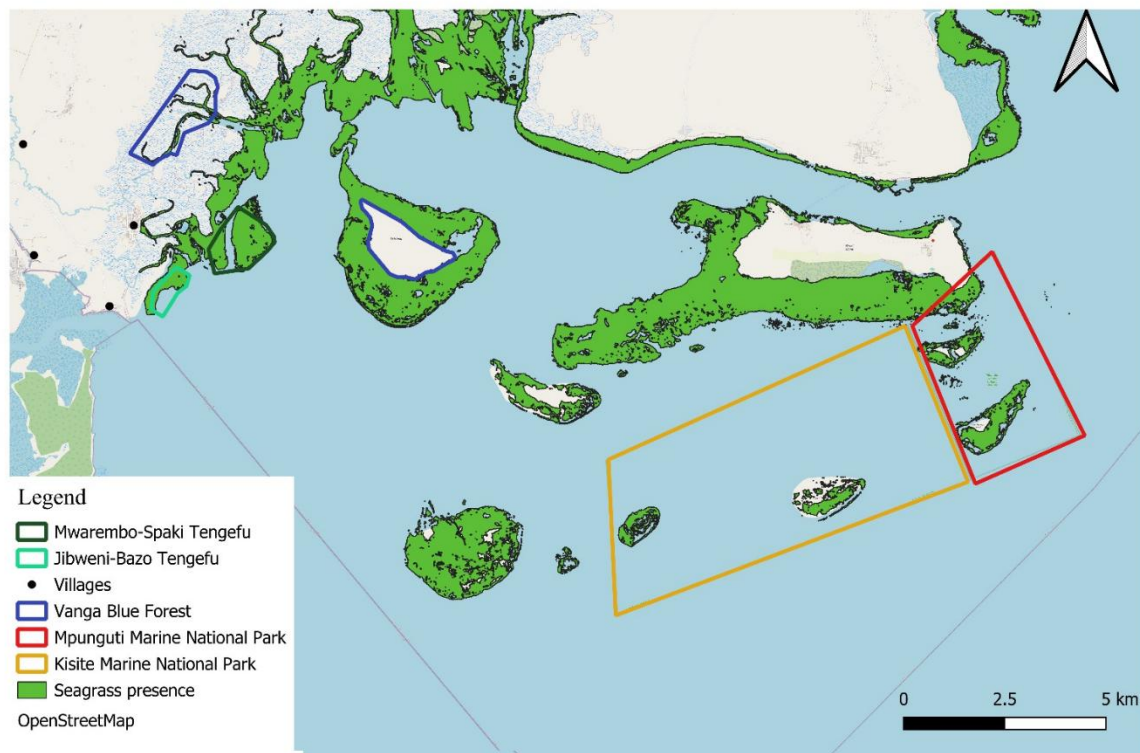
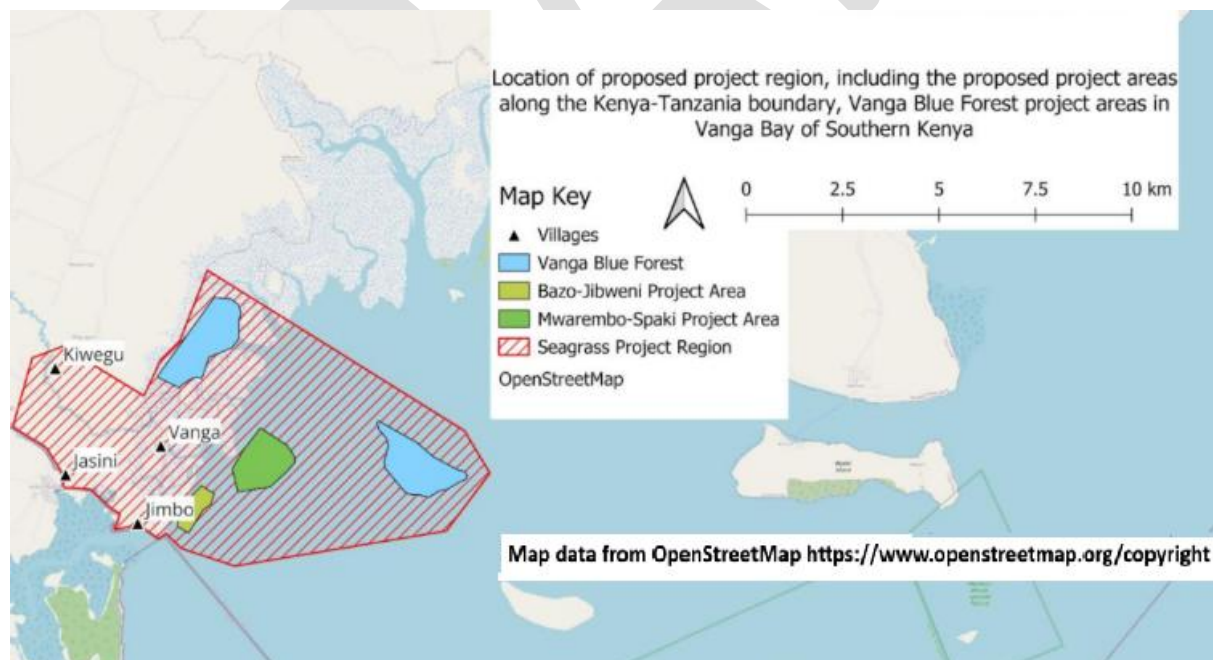


Figure A1.3: Vanga Seagrass Project Region



Annex 2 – Registration Certificate and Partner Agreements

Project coordinators ACES and VBF CBO (within which the VSPC resides) registration certificates are included below. In addition, we have included the Vanga and Jimbo BMUs certificates:

A2.1: The Association for Coastal Ecosystem Services registration certificate

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



Professor Mark Huxham
The Association For Coastal Ecosystem
Services

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:	
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

A2.6: Vanga Blue Forest CBO registration certificate

		Certificate No. 02622 
Republic of Kenya MINISTRY OF LABOUR AND SOCIAL PROTECTION STATE DEPARTMENT FOR SOCIAL PROTECTION DEPARTMENT OF SOCIAL DEVELOPMENT		
Certificate of Registration of Community Based Organization (CBO) <i>This is to Certify that</i> VANGA BLUE FOREST COMMUNITY BASED ORGANIZATION-CBO		
VANGA Sub-Location / Ward	VANGA Location	LUNGA LUNGA Division
LUNGA LUNGA Sub-County	LUNGA LUNGA Constituency	KWALE County
EAC&SP/DSD/LUNG/CBO/49219/2019 Registration No.	Is registered with the Department of Social Development by:	
		4/11/2019 Date of Registration
Name SYDNEY MOCKHOY 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.		

RENEWAL

DATE

Year 2 2025

08/07/2025



Year 3

Year 4

Year 5

Year 6

Year 7

A2.2: Vanga BMU fisheries registration certificate



A2.3: Vanga BMU community group registration certificate



A2.4: Jimbo BMU community group registration certificate



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 UNIT (REPL NO. 40564/2010)
 Group Name / Project

Registration No. EACL&SP/DS/MSAMB/LUNG/308890/2018	Date of Registration 6/11/2018
Sub-location / Ward VANGA	Constituency LUNGA LUNGA
Location VANGA	Sub County LUNGA LUNGA
Division LUNGA LUNGA	County KWALE

**is registered with the Department of
 Social Development Officer**

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

Date of Issue **6/11/2018**

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

A2.5: Jimbo BMU fisheries group registration certificate



**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: **SIMBU, KIGOMENI,
 KISIMA, BAAZO, JIMWENI, SH**

Postal Address of the BMU: **P.O. BOX 145, 80400 LUNGA LUNGA**

Registration No: **FISH/BMU/COAST/REG. NO. 046** Date: **20th May, 2013**

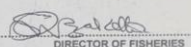
Physical Location of the office of Beach Management Unit:

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 6 (4) 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

Annex 3 – Initial Project Areas

Project region		Kenya, Kwale County, Lungalunga Sub-county, Vanga, Jimbo, Jasini and Kiwegu villages, Vanga Bay. See Annex 1 for maps.
Project areas	Mwarembo-Spaki (168ha)	Intertidal and subtidal seagrass meadows located in the Co-Management Areas (CMA) in Vanga Bay. See Annex 1 for maps.
	Jibweni-Bazo (56.7ha)	
Name of project participants		The communities of Vanga, Jimbo, Jasini and Kiwegu represented by the Vanga Seagrass Project committee
Location		Kenya, Kwale County, Lungalunga Sub-county, Vanga, Jimbo, Jasini and Kiwegu villages, Vanga Bay. See Annex 1 for maps.
Project interventions		The proposed project interventions are: - Seasonal closure (Conservation: 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 gear-restricted fishing activities. - Gear restriction (Conservation: Protection): Only legal and 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. - Enforcement of restrictions and closures

	(Conservation: Protection): Boat patrols will take place 2 times a month, with a record of all patrols kept. Two surveillance scouts will also be employed to monitor the LMMA. Violators will have actions taken against them with more detail provided in Table 1: Project Interventions below. Education (Conservation: Improved management/Protection): Raising awareness on seagrass as an ecosystem and how it generates co-benefits.
Extent of project areas	Total of 225 hectares
Project agreement reference	Signed copy supplied to Plan Vivo as a PDF. Copy of the agreement terms included in Annex 10.
Start date	Development started in January 2024. With a Start Date of May 2025 when the project interventions were first implemented (LMMA monitoring and patrols launched). We aim to collect baseline data in 2026 with the plan to sell Plan Vivo Biodiversity Credits from 2028.
Project Requirements 2.3.1 and 2.3.2 met?	Yes

Annex 4 – Participatory Design

This project is a natural progression of the Locally Managed Marine Area (LMMA) which was developed thanks to UNEP funding in 2023; evidence of stakeholder involvement during key decision making meetings since then has been provided below.

2023 – Designation of project areas by local community members.



Figure A4.1: © 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.



Figure A4.2: © 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.

2024 – Discussion and decision on number of patrols and alignment across organisations and associated projects (VBF CBO and local Beach Management Units).



Figure A4.3: © Amy Mumo. VSP committee meeting with local stakeholders (Vanga and Jimbo BMUs, KeFS, KMFRI, VBF) on LMMA patrols 9th November 2024.

09 Nov

VANGA

ACES
Association for Coastal Ecosystems

VBF & VSP COMMITTEE MEET WITH ACES
VAJIKI HALL, VANGA

ATTENDANCE REGISTER

No.	Name	Institution	Position	Contacts	Date	Signature
1	Saji Juma Hamisi	VSP	Chairman	[REDACTED]	9/11/2024	[Signature]
2	JABU HAMAD Mchande	VSP	Member	[REDACTED]	9/11/2024	[Signature]
3	Mohamed J. Mohamed	VSP	Secretary	[REDACTED]	9/11/24	[Signature]
4	Mwanakombwa Salim Ali	VSP	Member	[REDACTED]	9/11/24	[Signature]
5	Ali Abdulla M.	VBF	F.Scholar	[REDACTED]	9/11/2024	[Signature]
6	Bakari M. Mwakurimu	VSP	Member	[REDACTED]	9/11/24	[Signature]
7	Mwanamitama Mohamed	VSP	Chairman	[REDACTED]	9/11/24	[Signature]
8	FATUMA NASSORO	VSP	MEMBER	[REDACTED]	9/11/24	[Signature]
9	HAFIFE SAID MUSA	VBF	MEMBER	[REDACTED]	9/11/24	[Signature]
10	SUMA ISI RASHI	VSP	MEMBER	[REDACTED]	9/11/24	[Signature]

Figure A4.4: Photo above is an attendance record from 09th of November 2024 for the committee to meet with ACES and project funders to discuss project activities, updates, concerns and next steps.

2025 – Project development and implementation of management interventions continues
Below is an attendance list and photos from a LMMA patrol held on the 18th of June.

Annexes

Annex I

Participants list

S/No.	Name	Institution	Position
1	Mwinyi Hassan	VBF-VSP	Project Officer
2	Mohamed Mohamed	VSP	Secretary
3	Chrispus Lenapir	Kenya Fisheries Service	Fisheries Officer
4	Ishmael Ong'era	County Government of Kwale	Fisheries Officer
5	Mwalago Balozi	Vanga Seagrass Project	Member
6	Mohamed Bakari	Jimbo Seagrass Project	Project Manager
7	Saji Juma	VSP	Chairperson
8	Mwambwiza Tuweni	Vanga Seagrass Project	Member
9	Ali Usuma Faki	Jimbo BMU	Member
10	Mwanamtama Mohamed	Jimbo BMU	Member
11	Ali Shillingi	Jimbo BMU	Member
12	Kihawa Mohamed	Vanga BMU	Seagrass assessor
13	Khadija Abdalla	VSP	Member
14	Ndoro Tayo Nyae	Jimbo BMU	Secretary

Figure A4.5: An attendance list from a LMMA patrol held on the 18th of June 2025.

Annex IV Activity photos



Figure A4.6: Images from a LMMA patrol held on the 18th of June 2025.

2026 – Project development continues with PDD development, baselining and plans for community-inclusive data annotation.



Figure A4.7: VSP baselining 2026 – images from the 2-day community training event.
© Killian Chembe.



Figure A4.8: VSP baselining 2026 – images from Remote Underwater Video sampling.
© Killian Chembe.



Figure A4.8: VSP baselining 2026 – images from the photo-quadrat sampling © Killian Chembe.

Annex 5 – Initial FPIC

From the beginning of this project, strong participatory processes have been used to enable the decision on the initial project areas and boundaries of Mwarembo-Spaki (168ha) and Jibweni-Bazo (56.5ha); see evidence and examples provided in Annex 4. Furthermore, many project participants are already familiar with conservation project processes and are beneficiaries of the Vanga Blue Forest mangrove project and, as a result, the protection of the seagrass beds developed from local interest to conserve these environments.

Below is a copy of the full community consultation report with meeting minutes, photos and attendance lists from an early meeting in March 2024 to decide committee structure. Minutes were prepared by Ms Amy Mumo, interim project officer. As shown by this report, the project is community-led and owned with decisions made by the community themselves.

Meeting Minutes: Objectives of seagrass LMMA committee formulation meeting in Vanga

To recap on agreed governance structure;

To deliberate on seagrass committee representation; and

To revise name for the LMMA.

Implementation of the meeting's objectives

Seagrass committee representation

The seagrass project coordinator did a recap of the agreed governance structure in which a separate seagrass committee will be formed under VBF to oversee all activities and benefits directly linked to the seagrass project. ACES Board of Trustees member, Prof. Mark Huxham, spoke on the roles and key tasks of the committee which include a strict adherence to agreed benefit sharing structure. Senior Research Scientist – KMFRI, Dr. Amina Hamza gave a brief history of committee formulation processes for similar Payment for Ecosystem Services (PES) projects, VBF and Mikoko Pamoja. Dr. Hamza emphasized on equal representation, accountability and a willingness to serve for the common good instead of individual gain as some of the key principles for committee success. VBF Coordinator, Ms. Mwanarusi Mwafrica, gave a brief summary of the by-laws that govern the VBF committee. She said that attendance was key, along with creating meeting rules that encourage equal and fare participation of all members.

Plate 1 Seagrass committee formulation discussions by different stakeholders.



Prof. Mark Huxham



Dr. Amina Hamza



Ms. Mwanarusi Mwafrica	Ms. Amy Mumo

The Seagrass Coordinator, Ms. Amy Mumo presented a possible committee representation structure (Fig. 1). This example was for demonstrating how equal representation of key local stakeholder groups can be captured within the committee structure.

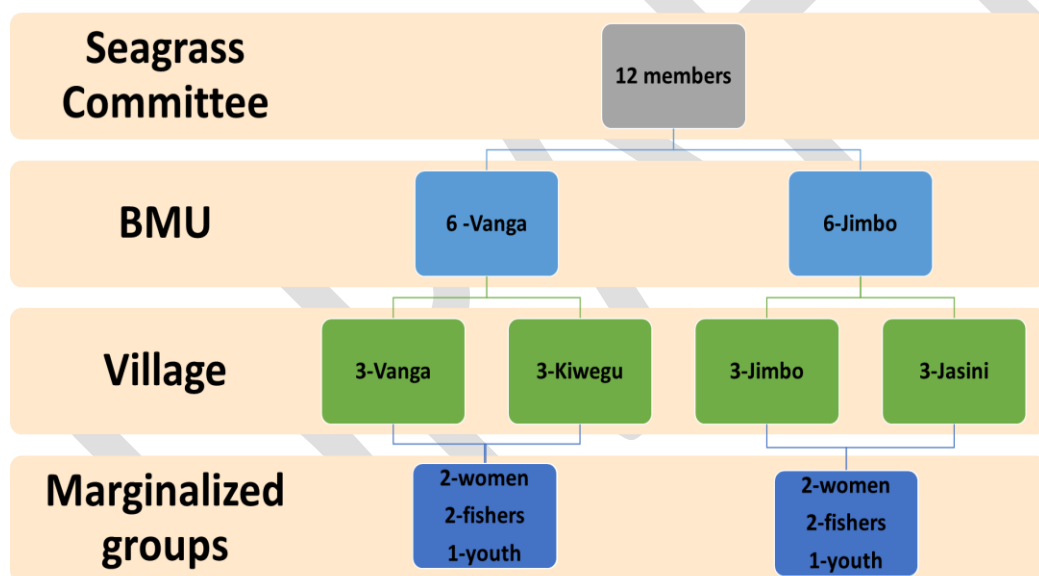


Figure 1: Example committee structure

BMU members had been tasked from the previous consultation meeting to make the following representation considerations:

- How many people would be in the committee
- Gender and youth representation
- Equal representation for each BMU
- Committee elections (who gets to vote, community and stakeholder engagement)

Another consideration that was included was the fisher community which is a key stakeholder for the project. This group was highlighted because fisherfolk tend to be underrepresented in most public

meeting forums and the BMU represents not only fisherfolk but also processors, traders, dealers, boat owners and operators, and local couriers.

Vanga BMU from deliberations following the last community meeting on governance suggested a 9-member seagrass committee structure (Fig. 2). Jimbo BMU did not propose any structure. The representative stated that the committee had agreed to come and listen to suggestions given and to participate in formulating an agreeable structure during the meeting.

Plate 2 BMU representatives presenting proposed seagrass committee structures.

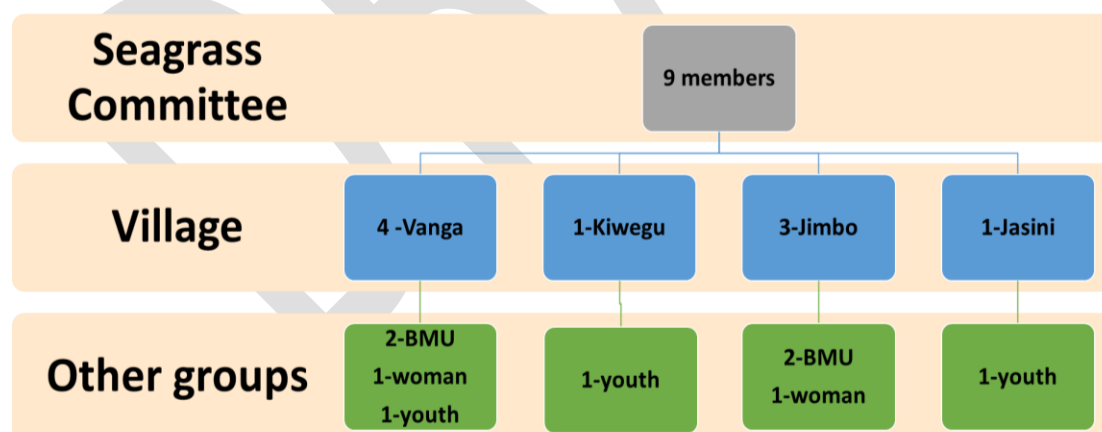
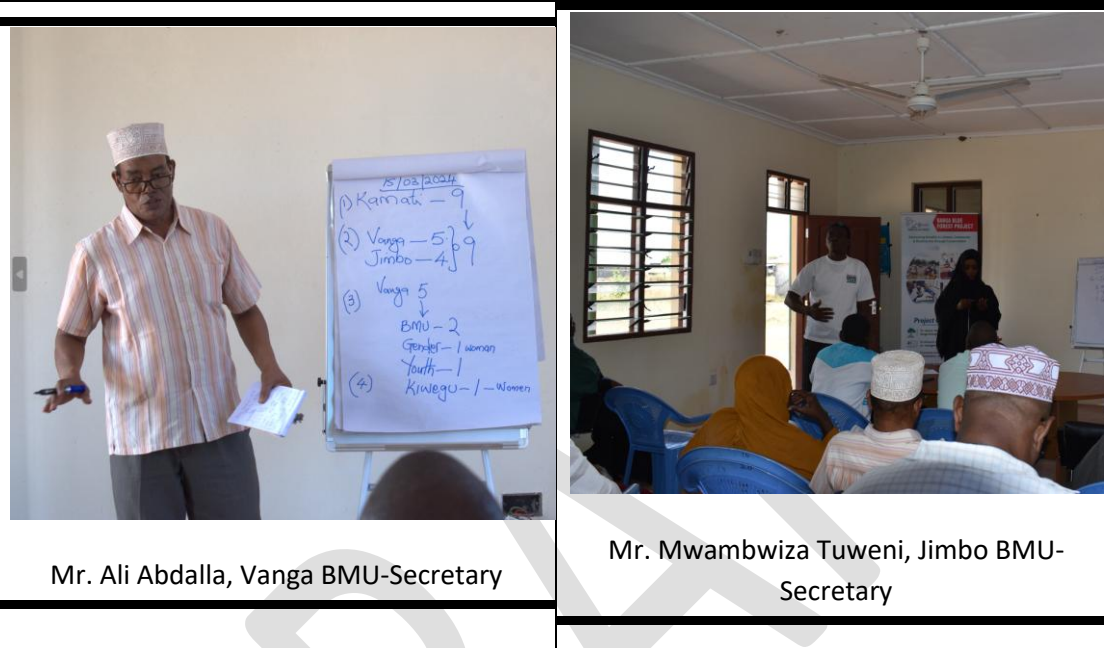


Figure 2: Suggested Vanga BMU committee structure

After deliberations 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 (Fig. 3).

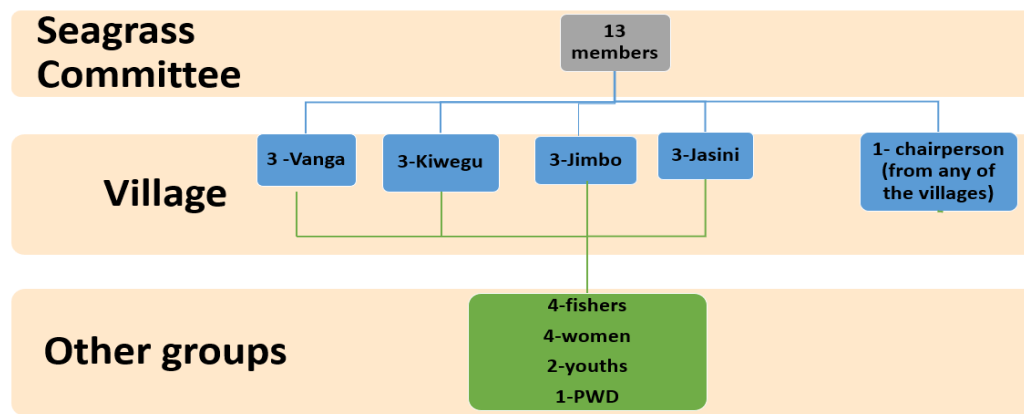


Figure 3 Agreed seagrass committee structure.



Plate 3 Members voting on seagrass committee structure.

Seagrass project name

Members present revisited the name for the seagrass project. From the previous meeting they had agreed on 'Vanga Seagrass Carbon'. They were encouraged to revise to a more general name that could be applicable to the project in the long run. Something that was not limiting, but inclusive of all the conservation activities that the project plans on undertaking. Members proposed new names and cast a vote. They agreed on the name 'Vanga Seagrass Project'.

Way forward

The next step is to vote in the seagrass committee. Members agreed that the election should be held after the Muslim holy month of Ramadhan. This will also give ample time for community awareness and sensitization for active participation in the election. BMU members will registers candidates interested in vying for the seagrass committee positions within the designated representative groups. Other key stakeholder such as ACES, KMFRI, KeFS and Village Elders will oversee the process to make sure its free and fair.

Annexes

Annex I Meeting program.

Committee Formulation Meeting	
February 27 th 2024	Activity
10:00 am – 10:15 am	Opening remarks
10:15 am – 10:30 am	Recap of governance meeting agreements
10:30 am - 12:00 pm	Committee formulation discussion • Committee tasks & roles – ACES • VBF committee by-laws – VBF coordinator • Case studies; Mikoko Pamoja & VBF - KMFRI • Presentation of committee representation options – seagrass coordinator. • Presentation of community proposed committee structures - Vanga & Jimbo BMUs • Open discussion on committee options.
12:00 pm - 12:15 pm	Revisit Seagrass LMMA name discussion
12:15 pm – 12:25 pm	Key highlights of the day
12:25 pm – 12:30 pm	Closing remarks

Annex II Participants list.

S/No.	Name	Institution
1	Zahira Adhuhuri	Jimbo BMU
2	Mwambwiza Tuweni	Jimbo BMU
3	Masika Mohamed	Village Elder Jimbo
4	Mwakiraa Mohamed	Vanga BMU
5	Mwanamvua Kassim	Jimbo BMU
6	Saumu Mbwana	Jimbo BMU
7	Abdalla Shee Renge	Village Elder Vanga
8	Shee Mrihi	Jimbo BMU
9	Hamad Omari	Village Elder Jasini
10	Mwanatumu Kadau	Vanga BMU

11	Salim Musa Mwachangare	Vanga BMU
12	Idrissa Mohamed	Vanga BMU
13	Rajabu Twaha	Village Elder Kiwegu
14	Mark Huxham	ACES
15	Hamadi Tsunusi	VBF
16	Jane Njoki	KeFS
17	Mwanarusi Mwafrika	VBF
18	Amina Juma Hamza	KMFRI
19	Amy Mumo	Seagrass Project
20	Yusuf Omar	Jimbo BMU

Annex 6 – Technical Specifications

Version:	1.0	
Date Approved:		
Certificate Type(s):	Conservation with restoration included if data allows.	
Target group being monitored (minimum 4 groups required):	Biodiversity Monitoring Tool. Include equipment specifications including the name of the tool, make and model.	Monitoring activities. Detail why this group was selected and project specific considerations for monitoring this target group.
Fish	High-resolution Remote Underwater Video (RUV). GoPro Hero 11 in Video Default mode (1x speed Wide digital lens) weighted RUV stand 0.5mx0.5m cube. 	1. Our project areas have high levels of sedimentation due to the ecosystem type and proximity to an estuary. 2. IDing fish to species level from video footage is therefore a potential challenge. Annotation will be done to the best of the teams abilities but may also include family and genus level ID. 3. Biodiversity patterns within this region remain largely unexplored. 4. Neap tides are best for water calmness and clarity which will aid video

		quality. 5. High tide data collection best for fish species prevalence.
Seagrass vegetation	High-resolution underwater photo. GoPro Hero 11 set to Photo mode (SuperPhoto mode with Linear digital lens) 1mX1m quadrants.	1. Water turbidity, seagrass distribution including the occurrence of bare patches, siltation from nearby river mouths during the long and short rainy seasons. 2. Neap tides are best for water calmness and clarity which will aid photo quality. 3. Low tide can help facilitate better image quality as it reduces freediving distance that relies on breath hold in sub-tidal areas. 4. Biodiversity patterns within this region remain largely unexplored.
Slow-moving epibenthic macroinvertebrates	High-resolution underwater photo. GoPro Hero 11 set to Photo mode (SuperPhoto mode with Linear digital lens) And High-resolution roving (snorkel) video. GoPro Hero 11 in Video Default mode (1x speed Wide digital lens) Covering a 50m x 50m sampling area per point.	1. Biodiversity patterns within this region remain largely unexplored. 2. Distribution of epibenthic macroinvertebrates in project areas largely unexplored. Monitoring methods may need to be adjusted as understanding and data increases. 3. Water turbidity, seagrass distribution including the occurrence of bare patches, siltation from nearby river mouths during the long and short rainy seasons. 4. Neap tides are best for water calmness and clarity which will aid video quality.

		5. Low tide can help facilitate better image quality as it reduces freediving distance that relies on breath hold in sub-tidal areas. 6. Team members may need to look within seagrass beds to capture imagery or videos of the invertebrates within the sampling plot.
Baseline Pillar Metric Values <i>(included after baselining, do not complete on first submission of PDD)</i>		
Pillar 1		
Pillar 2		
Pillar 3		
Pillar 4		
Pillar 5		

Applicability conditions

Geographical Area

The project is located in Kenya, Kwale County, Lungalunga Sub-county and includes the villages of Vanga, Jimbo, Jasini and Kiwegu villages. The project region is located in the transboundary conservation area between Southern Kenya and Northern Tanzania. The project areas are located in Vanga Bay (4°25'S, 39°17'E) which is located at the Southernmost tip of Kenya approximately 23 km North of the Tanzanian border and 118 km South of Mombasa Island. The project areas consist of 225ha of intertidal and subtidal seagrasses located across two sites called Mwarembo-Spaki (168ha) and Jibweni-Bazo (56.5ha). These are within the Co-Management Areas (CMA) in Vanga Bay. Jibweni-Bazo site is adjacent to the extensive mangrove forest along the waterline 6.0 km from the mouth of River Umba and approximately 4 km from Mwarembo-Spaki site. Mwarembo-Spaki site is further out from the shore with infringing mangroves between the site and the shoreline located approximately 2.5 km from the mouth of River Umba and 6.0 km to the mouth of River Mweni.

Baseline scenario

In Kenya, co-management of fisheries with Beach Management Units (BMUs) began in 2007 with the hope that they would help the Department of Fisheries better manage fish stocks. As a result, current management of the project areas has been driven by Vanga and Jimbo BMUs. Currently, the project areas are primarily used as fishing grounds by the local communities. Although seine netting is illegal in Kenya, beach seining is common within Vanga Bay and across coastal Kenya ([Mwikamba et al., 2024](#)), ring netting is also currently a

common fishing practice within the project areas. Overpopulation, unemployment and poverty among coastal communities drive noncompliance and the use of illegal and highly efficient fishing gears ([Ochiewo 2004](#); [Mangi et al. 2007](#)). Catches in Vanga are dominated by ring net fishing, especially during the Northeast Monsoon season ([Thoya et al., 2020](#)). Despite ring net fishing being associated with pelagic species in deeper waters, in Vanga this practice is currently used in-shore within the seagrass and infringing reef habitats ([Thoya et al., 2020](#)). The high concentration of ring net fishing in the inshore waters of Vanga is believed to be due to economic drivers such as reduced fuel costs which can maximise profits ([Thoya et al., 2020](#)). Indeed, ring net fishing within the project areas was witnessed by project staff in November 2024, demonstrating that this is a current and relevant baseline scenario for land use without project interventions. The most likely and only baseline scenario for the project areas without project interventions is its current use as a multi-gear fishing ground as this is its current pre-project land use. Section 3.1 of our PDD includes a summary of barriers that prevent change to this baseline scenario without the support of the project, a summary of project interventions that overcome these barriers and the benefits that are likely to be experienced as a result of interventions.

Technical Specification Conditions

This technical specification was developed in relation to seagrass biodiversity conservation in Vanga Bay, Kenya, namely for our two project areas Mwarembo-Spaki and Jibweni-Bazo. This document was developed by ACES in conjunction with VSP and will be used by the community-led VSP. It will also be used as a guideline for future activities and additions during monitoring and could also be adopted by other communities wanting to protect local seagrass biodiversity.

The objective of the project is to conserve vital seagrass beds and their associated biodiversity whilst also directing funds to the local communities who lead these projects. This will be achieved through the establishment of a Locally Managed Marine Area (LMMA) and the implementation of management interventions (Finalised management interventions document can be found in Annex 10). Project activities such as LMMA patrols, collaboration with other local entities (e.g. BMUs/KeFS) and community outreach/education will be used to encourage compliance.

As a result, technical specification conditions include:

1. Project areas must be areas that lie within a LMMA.
2. Project areas must be located within Vanga Bay.
3. Project areas must be part of the community-led VSP.
4. The project aim must be to conserve seagrass biodiversity.

Applicability for conservation projects (only applicable to conservation projects)

Please see the table below which outlines our IPA eligibility. Monitoring of the biodiversity attributes that triggered the IPA will be conducted as part of our annual monitoring and will

be reviewed as part of Plan Vivos 'pillar metrics' calculation of PVBCs. Seagrass will mainly be monitored through the habitat pillars (4 and 5) but will also make up part of our biodiversity data collected for pillars 1, 2 and 3. Via the data collected for the pillar metrics, we will understand seagrass percentage cover, seagrass meadow extent, seagrass species richness, diversity and taxonomic dissimilarity.

Table A6.1: 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 $\geq 3\%$ 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% ($\sim 32\text{km}^2$) of all seagrass in Kenya ($317.1 \pm 27.2 \text{ km}^2$). (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 $\geq 10\%$ of the national resource (area)	Vanga Bay contains around 14% ($\sim 32\text{km}^2$) of all seagrass in Kenya ($317.1 \pm 27.2 \text{ km}^2$). (Harcourt et al., 2018). Project region contains <i>Zostera capensis</i>, classified as a vulnerable seagrass species under the IUCN Red List: "<i>Zostera capensis</i> 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).

Additionality and Baseline Scenario

The additionality and baseline assessment tool was used to understand baseline scenarios, alternative land-use scenarios and project additionality. Details of this tool can be found below.

Additionality and Baseline Assessment Tool.

1.1. *Baseline scenario analysis*

1.1.1. *Describe alternative land-use scenarios*

When taking into account trends, Kenyan legislation and information gathering from the local community, the most likely and only baseline scenario for the project areas without project interventions is its current use as a multi-gear fishing ground as this is its current pre-project land use. Full details of this baseline scenario can be found in the Applicability conditions section of this Technical Specification

As per the assessment tool, we have a description of land-use created as a result of the proposed Project Interventions below.

The implementation of the Vanga Seagrass Project would lead to the sustainable management of 225 hectares of seagrass beds. Project areas and management interventions such as seasonal closures and gear restrictions were proposed by representatives of the Vanga and Jimbo BMUs in agreement with the fishing community to protect the fishery resources from further decline by limiting fishing activity. Land use will consist of 10 months of full-closure of the LMMA (April - January) and limited access for 2 months (February and March) in the mornings from 8:00 am till 11:00 am. This is so even when the fishing grounds are open, impact will be kept to a minimum. When the LMMA is open to fisheries activities, only legal and artisanal fishing gear is allowed (e.g. Hook and line, handline, basket traps, fence traps).

1.1.2. *Complete a comparative assessment of barriers*

The below assessment shows there are no barriers to the land being used as a multi-gear fishery, this is because this is the current baseline scenario and the only alternative land use to project interventions.

Table A6.2 Barrier assessment

Type of barrier	Alternative land-use 1 – <i>Current baseline scenario: multi-gear fishery</i>
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	Description of specific barriers	Score assigned to barriers from 1-5 (1 – very low, 5 – very high)
Financial/economic	No barrier, current scenario	1
Technical	No barrier, current scenario	1
Institutional/political	No barrier, current scenario	1
Ecological or resource	No barrier, current scenario	1
Social or cultural	No barrier, current scenario	1
Infrastructural	No barrier, current scenario	1
Market availability	No barrier, current scenario	1
Sum of scores	7	

1.2. *Additionality assessment*

1.2.1. *Barrier analysis*

Below is the barrier analysis completed for the only likely alternative land use to the project, a multi-gear fishery. This is also the current land-use scenario.

A6.3 Barrier analysis table

Type of barrier	Alternative Land use - Multi-gear fishery		
	Description of specific barriers	How barriers will be overcome by project activities	Expected benefits from the project
Financial/economic	Lack of finances to support management of the LMMA especially regarding patrols. Lack of community benefit to encourage a movement away from this land use. Lack of finances to support biodiversity monitoring which is essential to show that protection/interventions are working to improve community buy-in. Lack of finances to support training an equipment to develop the skills to	For initial project development, ACES and ENU have secured grant funding to support the development and implementation of a LMMA monitoring and enforcement plan. Once the project is established and able to sell biodiversity credits on the international market, finances from the sale of these credits can be used to invest in community	We have managed to secure funding for developing a biodiversity credits pilot project. Biodiversity credit sales to provide long-term sustainable funding for project activities and interventions.

	conduct patrols and monitoring. Lack of finances for general project development.	projects that address specific local need. Through our benefits-sharing mechanism, the distribution of these funds and selection of these projects are community-led. We are in a strong position to leverage community buy-in as the Vanga Bay area has already benefited from the successful Vanga Blue Forest project and therefore, they have an understanding of how funding from these projects work and the scope of community investment that can occur. Through grant funding we are able to provide some training around LMMA patrolling and biodiversity monitoring during the project development phase. Further training can be funded through biodiversity credits in the future at the discretion of the democratically elected committee that will lead this project.	
Technical	Limited funding for	Collaboration	Knowledge-sharing

	technical support and training without interventions. Technical support is required for training, conducting patrols, creating and delivering awareness campaigns and for biodiversity monitoring. Support would be needed to develop a project of this magnitude and development is unlikely without technical support from stakeholders such as KMFRI and ACES.	between project partners and technical advisors. Employment of staff through project funding and long-term through biodiversity credits sale.	among collaborators. Key staff to support the committee and carry out project-related activities.
Institutional/ political	The BMUs lack funding and equipment to patrol the LMMA without interventions. The LMMA (locally called a tengefu) are recognised in customary law however, there is a lack of funding for effective patrols and management, resulting in a lack of compliance without interventions.	Funding through grants and in the long-term through biodiversity credit sales will support with LMMA patrols, equipment and monitoring. Having a structured project and established committee will increase opportunities for collaboration with the BMUs	Effective LMMA management. Local collaboration between communities and organisations.
Ecological or resource	The current use of the LMMA is unsustainable with environmental degradation and overexploitation of fish stocks occurring. This has been seen by a 30% decline in catches and practices used are associated with negative	The project will carry out patrols to ensure management interventions within the LMMA are followed. Awareness and education campaigns will be	Increased biodiversity within the LMMA. Increased seagrass cover within the LMMA. Potentially a spill-over effect will

	impacts on important fish nursery sites, vital habitats and IUCN registered species.	carried out to increase project awareness. The project will offer community benefits through the sale of biodiversity credits which will incentivise the community to protect local biodiversity.	occur, increasing local fisheries captures.
Social or cultural	Some fishing gears/ techniques that are damaging to the seagrass and related biodiversity have been used by fishers in the region and therefore, there may be opposition to change.	Awareness and education campaigns will be carried out to increase understanding of the implications of damaging gears and improve understanding of alternative gears and techniques. Awareness campaigns on the project as a whole will be carried out to increase community understanding and buy-in. Some of the fishing techniques used are illegal methods under Kenyan law. The project will work with the BMUs and KeFs to improve compliance. The project will carry out patrols to ensure management interventions within	Local collaboration and community cohesion. Improved local understanding of the project, its interventions and benefits. Collaboration among the project, community and government institutions. Financial benefits for community members involved in patrols.

		the LMMA are followed.	
Infrastructural	The LMMA is sub-tidal which provides challenges for both patrols and monitoring. Specialised equipment, training and boats are required to access and effectively monitor the project areas, which is not possible without project interventions due to lack of funding and technical support. One of the sites specifically is not able to be viewed from the shoreline due to mangrove cover in the intertidal zone, this means that patrols must be conducted via boats and monitoring from the shore using binoculars is not possible.	The project will provide funding, staffing and technical expertise to address challenges around patrols and monitoring.	Ability to carry out patrols and monitoring to meet requirements of PV Nature.

1.2.2 Regulatory surplus

BMUs are fishers' association that have co-management rights established under The National Kenyan Fisheries Act regulations of 2007 to increase community participation in inshore marine management. As a result, BMUs are able to manage local marine resources and can conduct patrols of marine area through their co-management rights. However, Vanga and Jimbo BMUs do not have capacity or resources to complete the patrols necessary to effectively manage the LMMA alone. As a result, the Vanga Seagrass Project will support and work with the BMUs to complete patrolling activities and increase the effectiveness of management interventions on the LMMA.

Project activities

Project intervention implementation

For a description of activities and inputs needed to implement the project interventions, please see the tables below.

Table A6.4 Project activities and inputs and outcomes.

Aim: This project aims to protect the biodiversity within important seagrass meadows in Vanga Bay.			
Project Intervention	Project Activities	Inputs	Corrective Actions
Improved management: Seasonal closure to protect biodiversity and reduce fishing pressure in the project areas. 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.	Patrols of the LMMA to ensure compliance with the closure with a record of all patrols kept. Local engagement and awareness raising led by the project staff and the VSP committee	Boat hire for patrols. recruitment of competent community members to captain boats. Training organised in conjunction with Kenya Fisheries Service (KeFS) and Kenya Marine Fisheries Research Institute (KMFRI).	Direct involvement of the fishers in project design, implementation. Foster open dialogue and build trust through participatory decision-making. Work with VSPC, KMFRI, KEFS and BMUs to identify why patrols aren't occurring as scheduled. Address any concerns and barriers. Provide training for project staff. If capacity is preventing milestones being reached, explore
Protection: Enforcement of restrictions and closures.	Patrols of the LMMA to ensure compliance with the closure with a record of all patrols kept.	Boat hire for patrols.	

And Gear restriction to protect fish and reduce damage to seagrass. 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. And Enforcement of restrictions and closures.	Local engagement and awareness raising led by the project staff and the VSP committee	recruitment of competent community members to captain boats. Project staff building relationships with the BMUs and KeFS. Collaboration with the BMUs, KeFS and CGoK fisheries department. Training organised in conjunction with Kenya Fisheries Service (KeFS) and Kenya Marine Fisheries Research Institute (KMFRI).	hiring an assistant staff member support the current team with activities and reporting. Educate fishers about the ecological benefits of gear restrictions and the impact of the restricted gear on 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 about this. Discuss reasons for any disengagement of local stakeholders with the VSPC and project staff. Support the team with relationship building and
Education: Raising awareness; education on the seagrass ecosystem and the biodiversity found within, co-benefits generated, and the importance of seagrass	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.	Staff time led by project staff and ACES to develop project materials such as leaflets/posters.	

conservation for humans, biodiversity and climate.	Awareness on the carbon and biodiversity of seagrass can be shared in culturally appropriate ways, such 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'.	Workshops and campaigns developed by the project staff with support from ACES.	engagement with stakeholders as required
Outcomes			
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. 3. Potential for a spillover effect as biodiversity improves, benefitting wider	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. 4. Community members are willing to participate in data collection and provide accurate information. Risks: 1. Project unable to be certified by Plan Vivo.	

	biodiversity in Vanga Bay and contributing to local fisheries economics. 4. The project's proximity to the VBF PV Climate project may generate additional biodiversity benefits by increasing local habitat connectivity. Seagrasses, mangroves and coral reefs work in synergy. -	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. Likelihood: The likelihood of these risks are minimal as the ACES team are working closely with both the Vanga Seagrass Project team, KMFRI 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, developing outreach on the importance of seagrass, supporting regulation of fishing activities and promoting sustainable fishing activities and value addition. 2. Secured income from PVBCs which can be used to employ local people (e.g. for patrols) and support community development projects, these are likely to	Assumptions 1. The community is engaged in understanding the project and utilising available opportunities. 2. There is sufficient interest and participation from community members. 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.

	be similar to those funded through the PV Climate project, VBF. 3. Potential spillover effect into local fisheries as biodiversity recovers, improving catches of commercially and culturally important species. 4. Improved opportunities for community members which may support employment opportunities. Examples of roles with transferable skills include committee positions, monitoring and data collection team members, seagrass assessors and LMMA patrollers.	6. There is collaboration and capacity among partners to offer adequate training and support for project roles. 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. Project interventions and 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. Likelihood 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
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		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 VBF 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. 4. Conservation of seagrass beds will provide increased resilience to stressors such as changes to ocean and climatic conditions through increased diversity of species. 5. Protecting the seagrass will improve water quality and reduce erosion and	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 VBF will enhance ecological conditions through increased connectivity of ecosystems. 6. No natural disasters that disturb the seabed. 7. Project interventions will be successful. Risks 1. Project interventions not adhered to. 2. Monitoring methods are not effective, or too expensive. 3. Changes in environmental conditions may affect the relationship between proxy measures and carbon storage.

	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.	4. Increasing sea temperatures, ocean acidification, and extreme weather events could hinder seagrass recovery. Likelihood 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 and activities		
Output 1	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 that links the output to the activity - LMMA patrols schedule established and local captains/assessors hired. - Community continues to be engaged in the project. - Data collection methods that work for PV accreditation are accessible to the community. - Monitoring training carried out by interested community members.

Activity 1.1	LMMA management activities - Seasonal closure of protected area, gear restrictions, LMMA monitoring and patrols.	Risks: - Risk of low compliance with LMMA management restrictions. - Risk that patrols are ineffective. - Risk that Kenya Fisheries Service may not follow up on any reported illegal fishing in the project area, reducing impact of patrols and therefore compliance. Mitigations: The above risks have been mitigated by the community-led nature of this project. The project area, management interventions and gear restrictions were decided by the local community themselves and therefore, engagement and awareness for this project is high. Patrols are currently scheduled to occur 2 times per month and will record both observed real-time activities and will also assess the seagrass for signs of damage from banned fishing gears to understand if banned activities are taking place outside of patrol times. Training will be carried out in conjunction with KeFS and KMFRI to ensure that patrollers are adequately trained. KeFS are the enforcement entity who will be able to act on any reported banned activity. KeFS have been engaged from the beginning and have been attending community meetings around LMMA management and enforcement. the Vanga seagrass committee has stressed the need for action from KeFS from the beginning to ensure management is effective.
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Activity 1.2	Community engagement and decision-making activities to implement this community-led project	Risks: - Lack of engagement from the community. - Breakdown in decision-making process. Mitigations: This project is community-led and as a result, we have had high engagement from the beginning. The successes of the VBF PV Climate project in the region has allowed the community to see the benefits of PV projects first-hand and as a result, project understanding and engagement is high. Decision-making processes are well-established as the VSP committee has been set up under the VBF community benefits organisation and replicated the tried and tested VBF committee that makes decisions on the carbon project. The VSP committee is managed through a constitution that was developed by the committee themselves and has clear direction on assigning office-holder positions, how decisions are made and has a clear grievance mechanism. As a result, the committee has a clear and understood process to follow when making project decisions and implementing activities.
Activity 1.3	Documentation and monitoring protocol required for accreditation developed and completed.	Risks: - Monitoring protocol does not yield data with good enough quality for Pivotal's analysis. - Monitoring protocol is expensive to execute, creating difficulties for baselining.

		Mitigations: The project are working closely with Plan Vivo and Pivotal to develop a monitoring protocol and identify equipment that will yield good quality data that is applicable to Pivotal's systems. The VSP has some initial funding (until December 2025) to support some of the cost of initial baseline data collection. Plan Vivo are also exploring options to support with the initial equipment purchases.
Activity 1.4	Community-accessible seagrass biodiversity monitoring protocol developed and baselining carried out.	Risks: - The monitoring methods required are not accessible to the community and require scientific expertise. - Monitoring protocol is expensive to execute, creating difficulties for baselining. Mitigations: The team are working closely with Plan Vivo and Pivotal to ensure the monitoring protocol is community-accessible and interested community members can be involved in data collection. The project coordinator with support from KMFRI will be equipped to carry out training for interested community members. Some members of the community are already trained as Seagrass Assessors through some previous funding and therefore, already have some monitoring and water skills. The VSP has some initial funding (until December 2025) to support some of the cost of initial baseline data collection.

Activity 1.5	Collaboration with technical partners and relevant institutes.	Risks: - Relationship breakdowns between institutions. - Increased confusion due to differing bureaucratic processes among institutions. Mitigations: Technical partners for this project have a well-established way of working having collaborated on the PV Climate projects VBF and Mikoko Pamoja, reducing the risk of relationship breakdowns. Institutions liaise regularly to ensure all involved understand processes and timelines. Key staff members within organisations act as liaisons to ensure collaboration and knowledge-sharing runs smoothly.
Output 2	Support of Community development. Establishment of funding stream from the sale of the PVBCs.	Assumptions that links the output to the activity - A market for PVBCs emerges and sales generate enough income to fund community development. - Committee effectively manages the community funds and benefits sharing mechanism. - Decisions on community development projects are democratic. - Community are engaged with the project and participate in suggesting development proposals and voting.

Activity 2.1	Education on the project and how funding will reach the local community.	Risks: - The community does not understand benefits sharing mechanism leading to mistrust or confusion. Mitigations: The VSP is in the same region as the successful PV Climate project, VBF. Both projects use the same framework for their benefits sharing structure and therefore, the community are well-versed in the process and have seen tangible community benefits from VBF funding. Furthermore, community engagement has been high from the start and the project is ran by a local committee. The project coordinator will continue community engagement activities and educating people on the benefits sharing mechanism.
Activity 2.2	Establishment of a committee to oversee benefits sharing activities and manage community funds and projects.	Risks: - Mishandling of community funds or projects. Mitigations: The committee has been established through a democratic process and is made up of 13 members from diverse backgrounds within the community. The committee is bound by the constitution that outlines how the committee will make decisions and manage funds. The funds are also held by ACES who act as project practitioners and are part of the benefits sharing mechanism. Spending of the funds is decided by democratic

		community-wide voting where the community development projects with the highest votes are funded.
Activity 2.3	Establishment of a market for PVBCs, locating buyers and marketing credits.	Risks: - Lack of trust of biodiversity crediting projects - Lack of buyers or markets for PVBCs Mitigations: The project is working with Plan Vivo due to their high-integrity and community focused approach. As a result, we hope this will increase trust that the projects have a wide range of benefits are carried out with full community buy-in (and in our case, the project is community-led). Despite biodiversity credits being an emerging market with uncertain demand, 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. Furthermore, credits will be bundled with VBF carbon credits and ACES has already established some early interest from current carbon credit buyers. Plan Vivo are also supporting with educating the market on PVBCs.

Species selection

Species were selected for monitoring based on local knowledge, current research and expertise from technical partners (e.g. ACES/KMFRI/ENU).

Seagrass was chosen due to its importance as a vital habitat and the support it gives through its many ecosystem benefits. The seagrass ecosystem of Vanga Bay meets the Important Plant Area criterion required to establish a PV Nature project (for full details, see above 'Applicability for conservation projects' section of this Technical Specification). It also has huge cultural and economic importance to the communities through its role as a fish nursery ground.

The second group chosen was fish species. Fish have extensive cultural and commercial importance to the fishing villages of Vanga Bay. Decreased catches have been seen in recent years ([Fortnam et al., 2021](#)), so it is hoped that the project will be able to monitor recovery in the project areas.

The third group chosen was epibenthic macroinvertebrates, in particular crustaceans and echinoderms. Again, crustaceans and echinoderms such as sea cucumbers have commercial importance to the local communities ([Ochiewo et al., 2010](#)). Furthermore, research has shown that sea urchins are overgrazing on the seagrasses in Vanga Bay due to a lack of urchin predators, likely from overfishing ([Uku et al., 2021](#); [Awadh et al., 2024](#)).

Overall, it was agreed that this demographic of species also covers a range of ecosystem functions and general diversity therefore, it represents a good cross-section of biodiversity to be monitored within our project areas.

Long-term management

Long-term management of the project activities and monitoring benefits from the already-established working relationships and protocols of the PV Climate project, Vanga Blue Forest (VBF). Vanga Seagrass Project (VSP), which sits under VBF Community-benefits organisation will lead on the project activities and monitoring. VSP comprises of a committee and a project coordinator staff member, as the project grows an assistant project coordinator staff position may also be filled to ensure there is adequate capacity to conduct project activities.

ACES leads on overall prudential management of the project and supports the project coordinator staff and committee as required. ACES also oversees alignment of the project to the PV Nature standards and ensures the project carries out activities in line with project documentation.

Monitoring efforts will also be supported by the technical expert stakeholders involved with VSP. This includes ACES who can support with technical expertise and practitioner experience. Furthermore, KMFRI and ENU who as research institutions, can offer scientific and technical expertise as well as ensuring the project can benefit from the latest research and literature in the marine biodiversity field. KMFRI as in-country partners will also support VSP with ensuring activities are in-line with Kenyan legislation, frameworks and best-practice

approaches where these are available and can work with the project if new biodiversity markets legislation emerges in Kenya.

A6.5 Table of Progress indicators

Output/Activity	Indicator	Means of Verification
Output 1 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.	PI1: PV Nature accreditation achieved by 2026. Certification maintained through annual reporting and verification events (estimated every 5 years).	Formal confirmation of PV Nature accreditation by PV. Submission of annual reporting and monitoring requirements to ensure continued PV Nature accreditation is achieved.
Activity 1.1 LMMA management activities - Seasonal closure of protected area, gear restrictions, LMMA monitoring and patrols.	PI2: At least 2 patrols completed per month to monitor and encourage adherence to management activities.	Patrol reports that are completed by the VSP project staff after every patrol.
Activity 1.2 Community engagement and decision-making activities to implement this community-led project	PI3: Completion of committee meeting reports by the VSP project staff following decision-making meetings, reports reviewed at least quarterly by ACES. PI4: Records kept of community engagement activities. At least 4 community engagement activities or training/workshop events per year.	Reports submitted to ACES following committee meetings by VSP project staff. Attendance records and feedback recorded from outreach and training events.
Activity 1.3 Documentation and monitoring protocol required for accreditation developed and completed.	PI5: Monitoring protocol developed by January 2026 ready for baseline data collection. PDD to be completed in early 2026	Successful monitoring protocol developed and approved by PV/Pivotal. PDD approved by PV.

Activity 1.4 Community-accessible seagrass biodiversity monitoring protocol developed and baselining carried out.	PI6: Baseline data collection completed in conjunction with participating community members using accessible data collection protocols in early 2026.	2x training events held by VSP project coordinator staff to train participating community members in data collection techniques. Attendance records collated. Attendance records and reports produced from baseline data collection activities.
Activity 1.5 Collaboration with technical partners and relevant institutes.	PI7: Vanga-based technical partners engaged in relevant meetings by VSP committee throughout project development (e.g. KeFS Fisheries Officer attended the committee meeting on LMMA patrols). Research-based partners engaged in PV Working Group and PV-Project meetings on monitoring/data-collection throughout project development. (e.g. Kenyan-based ENU PhD student to support the development of the monitoring plan). Regular communication between key partners (e.g. ACES has fortnightly meetings with VSP project coordinator).	Attendance records and reports from VSP committee meetings/activities. Direct engagement between PV and ACES and PhD students on monitoring protocol development. Established technical partner ways-of-working e.g. proof of recurring catch-ups.
Output 2 Support of Community development. Establishment of funding stream from the sale of the PVBCs.	PI10: Sale of PVBCs to begin in 2028. At least 60% of funds to be given to the community from the sale of PVBCs annually.	Reports from VSP committee and in-country project coordinator staff. Receipts, invoices, pictures.

	PI11: Funds will be managed and spent by the VSPC following community decision on projects to fund.	
Activity 2.1 Education on the project and how funding will reach the local community.	PI12: Committee meetings and outreach events covering the benefits sharing mechanism to be conducted by March 2026. Materials (e.g. posters) to be developed by May 2026 to be displayed in the VBF office (similar to materials used for VBF project)	Reports from VSP committee meetings, attendance records, reports from VSP project coordinator, pictures showing displayed materials.
Activity 2.2 Establishment of a committee to oversee benefits sharing activities and manage community funds and projects.	PI13: Committee to be established alongside project development. Sensitisation work on managing funds and updates on PV Nature to be given throughout 2025 by the project staff. Committee to lead on decision-making and project activities. Full management of the funds and community project development to commence in 2028 alongside the first planned sale of PVBCs	Committee meeting attendance records and reports.
Socioeconomic Indicator	Means of Verification	
Amount of income from sale of PVBCs used for community development projects and type of community development projects funded (divided by village).	Annual monitoring and reporting	
Number of training sessions delivered and number of	Training attendance records/registration sheets.	

community members trained (divided by gender).	
Number of partnerships with local, national and international institutions.	Annual monitoring and reporting
Environmental Indicator	Means of Verification
Seagrass habitat health will be monitored under the PV habitat pillars (pillars 1 and 2).	Annual monitoring and reporting
Hectares of mangroves protected in the project region through VBF (mangroves and seagrass work in synergy).	VBF annual monitoring and reporting

Biodiversity benefits

Protection of the seagrass habitat is expected to benefit biodiversity by:

- Improved fish nursery habitat; there is currently high larvae concentration but low fish populations which show that fish are being overfished when they reach the size to fit in nets, demonstrating potential for high abundance in the area ([Ngisiange et al. \(2024\)](#)).
- Increased fish biomass and potential spillover into fishing grounds.
- Increased abundance of predatory fish will reduce sea urchin overgrazing on seagrass. Sea urchins were recently shown to have a high density in Vanga, one study showed that the density across the Southern Kenyan coast was highest in Vanga ([Awadh et al., 2024](#)).
- Improved habitat for megafauna (e.g. turtles and dugongs). [Awadh et al., \(2024\)](#) found that Vanga has the highest level of human activities that negatively affect seagrass meadows, threatening dugong survival.
- Improved resilience and adaptation. Biodiverse environments support complex ecosystems, improving resilience. As biodiversity grows, there is a higher chance of any one individual having the traits that enable them to adapt to a changing environment and adapt to climate change.

We have selected species monitoring methods that are commonly used in the scientific community to monitor fish, slow-moving invertebrates and seagrass species. Methods are tried and tested within literature. For the habitat monitoring methods, an Approved Approach for seagrass habitat monitoring is being developed to ensure

we take an evaluated and effective approach to monitoring the habitats within the project areas.

Crediting Period

State the crediting period over which biodiversity benefits are estimated.

Potential Leakage

Table A6.6 describes leakage risk, estimated risk score of the potential leakage and the mitigation measures in place.

Table A6.6 Leakage Risk Mitigation

Project Intervention	Leakage Risk	Leakage Risk Score (low, medium, high)	Mitigation Measures*
1. Seasonal closure (protection)	There is a risk that the closure could displace fishing activities to outside the project areas, impacting biodiversity of commercially and culturally important fish species.	Medium	Activity 1.1 and 1.4: We expect this impact to be mitigated by a spillover effect from the project areas. As seagrass habitat is an important nursery site for juvenile fish species, we are likely to see fish stocks recovering within the project areas and then spilling out into the surrounding project region, increasing the amount of culturally and commercially important fish species.
2. Gear restriction (improved management)	There is a risk that rather than switching to more sustainable gears, fishers continue using the same gears, just outside the project areas.	Medium	Activity 1.1 and 1.5: We aim to mitigate this risk through awareness campaigns on the benefits of sustainable fishing gears. Furthermore, there will be 4 patrols per month taking place within the project areas. Patrol boats will pass through the project region as a whole to reach the project areas (coming from either Vanga or Jimbo landing sites to the project areas). Currently, fishers do fish with illegal gears within the project region but it

			is likely that an increase in seeing patrol boats in the region will increase compliance with Kenyan law both inside and outside the project areas.
3. Raising awareness (Education)	This intervention does not pose a leakage risk and instead may improve habitat health outside of the project areas if uptake of less destructive gears among fishers increases.	Low	Activity 1.2, 2.1 and 2.2: VSP will hold community engagement and decision-making activities to implement this community-led project. VSP will provide education on the project, project interventions and the benefits for biodiversity and the community.

Risks and Assumptions

Table A6.7 summarises the key risks or assumptions that may impact biodiversity monitoring and the mitigations that are in place.

Table A6.7 Biodiversity monitoring risks and mitigations

Risks/Assumptions	Mitigations
Risk: Risk of bad visibility impacting monitoring photos/videos.	Monitoring should be preferentially done at Neap tides to allow for calm, clear seas. If visibility is poor due to runoff or sedimentation, monitoring to be rescheduled.
Risk: Risk of rough seas impacting monitoring boats getting to the project areas.	The Vanga Bay area is not known for rough seas however, we would abandon and reschedule monitoring efforts if there were safety concerns.
Risk: Risk to people involved due to in-water data collection work.	Training will be provided, and only competent swimmers will be allowed to enter the water.
Risk: Equipment is tampered with or removed when left to record.	Equipment to have surface markers attached so that the monitoring team can monitor from a distance. They will be able to see if anyone approaches equipment but will remain at a distance so not to affect data collection.
Assumptions	
Assumption: Equipment works correctly.	
Assumption: Monitoring plan meets both project and PV Nature requirements.	
Assumption: Monitoring approaches are community accessible.	

Knowledge Transfer and Capacity Building

This project is led by the local community of Vanga Bay and works in close collaboration with local stakeholders such as the BMUs. As a result, local capacity building and knowledge dissemination is integral to project success as it will be the VSP itself that drives project direction, completes project activities and carries out monitoring. The project benefits from international practitioners (e.g. ACES) and in-country experts (e.g. KMFRI) who can support the project, share knowledge and collaboratively implement pioneering approaches to community-led biodiversity monitoring.

DRAFT

Annex 7 – Exclusion List

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.	☐ Yes ☒ 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).	☐ Yes ☒ No
Trade in animals, plants or any natural products not complying with the provisions of the CITES/Washington convention [3].	☐ Yes ☒ No
Illegal, harvesting or trading in any wildlife resources.	☐ Yes ☒ No
Destructive fishing methods or drift net fishing with a net more than 2.5 km in length, explosives and/or poison.	☐ Yes ☒ No
Large-scale commercial logging operations for use in primary tropical moist forest.	☐ Yes ☒ No
Production or trade in wood or other forestry products other than from sustainably managed forests [4].	☐ Yes ☒ 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]	☐ Yes ☒ No
Activities involving harmful or exploitative forms of forced labour, [6] harmful child labour [7], modern slavery and human trafficking [8].	☐ Yes ☒ No
Projects that include involuntary physical displacement and/or forced eviction.	☐ Yes ☒ 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].	☐ Yes ☒ 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	☐ Yes ☒ No
Production or trade of arms, ammunition, weaponry, controversial weapons, or components thereof (e.g., nuclear weapons and radioactive ammunition, biological and chemical	☐ Yes ☒ No

weapons of mass destruction, cluster bombs, anti -personnel mines, enriched uranium).	
Procurement and use of firearms.	☐ Yes ☒ No
Provision of finances to military institutions involved in conservation or security activities.	☐ Yes ☒ No
Production or trade of strong alcohol intended for human consumption or other alcoholic beverages (excluding beer and wine).	☐ Yes ☒ No
Production or trade of tobacco and other drugs	☐ Yes ☒ No
Gambling, gaming establishments, casinos or any equivalent enterprises and undertaking [13].	☐ Yes ☒ No
Any trade related to pornography, prostitution or sexual exploitation of any form.	☐ Yes ☒ 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	☐ Yes ☒ 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%.	☐ Yes ☒ 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.	☐ Yes ☒ No
Transboundary trade in wastes, except for those accepted by the Basel Convention and its underlying regulations [14].	☐ Yes ☒ No
Any activity leading to an irreversible modification or significant displacement of an element of culturally critical heritage [15].	☐ Yes ☒ No
Production and distribution, or investment in, media that are racist, antidemocratic or that advocate discrimination against a part of the population.	☐ Yes ☒ No
Projects involving the planting or introduction of invasive species	☐ Yes ☒ No
Projects that increase the dependency of primary participants and other stakeholders on fossil fuels.	☐ Yes ☒ 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 8 – Environmental and Social Assessment Report

The Environmental and Social Risks of VSP have been thoroughly examined through multiple approaches. As part of the National Environmental Management Agency licensing requirements, VSP has undergone a full Environmental and Social Impact Assessment (ESIA) by an independent NEMA approved assessor. The subsequent 168 page ESIA report has been shared directly with Plan Vivo as a supporting document to this PDD.

In addition to this, the team also conducted a project-led Environmental and Social Assessment as part of the project development. This included the following key activities:

- The ACES and VSP teams completed a Risk Screening Report which was reviewed by Plan Vivo, details of the report and feedback can be seen in Table A8.1. Section 3.9.2 of the Risk Management section of this PDD includes details on mitigation measures.
- A further committee meeting was conducted by the VSP Project Officer to review risks and measures to reduce risk at community level with the results included in Table A8.2.
- As part of the social survey conducted by KMFRI social scientists in June 2025, participants were asked to consider project risks and potential mitigation opportunities. A summary of the Social Survey risk findings can be seen in Table A8.3.

Table A8.1 VSP Environmental and Social Assessment Report Summary (please note, a full E&S Screening was completed for VSP at PIN phase.

SECTION D: SCREENING REPORT	
<i>Name of E&S reviewer</i>	<i>Dianah Nalwanga</i>
<i>Date of E&S screening:</i>	<i>1st screening 23/10/2024</i>

Project risk rating:	Low: The potential risks have been identified in several risk areas and effective mitigation measures have been identified to mitigate these risks and most of these measures are in place and are already being implemented.																																																											
Principle risks and impacts	– Discrimination of vulnerable groups – Gender- based violence – Preventing people from fulfilling their economic or social rights – Exacerbating existing social and stakeholder conflicts – Occupational health and safety risk to project workers – Restriction of people’s access to land or natural resources – Inadequate consultation of Indigenous Peoples – Unsustainable use of natural resources – Influencing the effectiveness of project activities by Climate variability and changes <Populate summary table with risk significance> <table><tr><th>E&S topic/ risk area</th><th>Likelihood (1-5)</th><th>Magnitude (1-5)</th><th>Significance (moderate, severe, high)</th></tr><tr><td>Vulnerable Groups</td><td>3</td><td>3</td><td>Moderate</td></tr><tr><td>Gender equality</td><td>1</td><td>2</td><td>Low</td></tr><tr><td>Human Rights</td><td>3</td><td>2</td><td>Moderate</td></tr><tr><td>Community, Health, Safety & Security</td><td>2</td><td>2</td><td>Low</td></tr><tr><td>Labour and working conditions</td><td>3</td><td>3</td><td>Moderate</td></tr><tr><td>Resource efficiency, pollution, wastes, chemicals and GHG emissions</td><td>2</td><td>2</td><td>Low</td></tr><tr><td>Access restrictions and livelihoods</td><td>2</td><td>2</td><td>Low</td></tr><tr><td>Cultural heritage</td><td>1</td><td>1</td><td>Low</td></tr><tr><td>Indigenous Peoples</td><td>2</td><td>3</td><td>Moderate</td></tr><tr><td>Biodiversity and sustainable use of natural resources</td><td>1</td><td>1</td><td>Low</td></tr><tr><td>Land tenure conflicts</td><td>2</td><td>2</td><td>Low</td></tr><tr><td>Risk of not accounting for climate change</td><td>2</td><td>2</td><td>Low</td></tr><tr><td>Other – eg. cumulative impacts</td><td>1</td><td>1</td><td>Low</td></tr></table>				E&S topic/ risk area	Likelihood (1-5)	Magnitude (1-5)	Significance (moderate, severe, high)	Vulnerable Groups	3	3	Moderate	Gender equality	1	2	Low	Human Rights	3	2	Moderate	Community, Health, Safety & Security	2	2	Low	Labour and working conditions	3	3	Moderate	Resource efficiency, pollution, wastes, chemicals and GHG emissions	2	2	Low	Access restrictions and livelihoods	2	2	Low	Cultural heritage	1	1	Low	Indigenous Peoples	2	3	Moderate	Biodiversity and sustainable use of natural resources	1	1	Low	Land tenure conflicts	2	2	Low	Risk of not accounting for climate change	2	2	Low	Other – eg. cumulative impacts	1	1	Low
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Land tenure conflicts	2	2	Low																																																									
Risk of not accounting for climate change	2	2	Low																																																									
Other – eg. cumulative impacts	1	1	Low																																																									

<i>E&S assessment required</i>	The project developers should conduct a field-based Environmental & Social Risk (E&S) Assessment alongside the development of the PDD and overall project design. Focus should be on the risks assigned as ‘moderate’ in the above table.
<i>Likely safeguard plans required</i>	The ESMP may not be required in this project, but rather a field-based E&S Risk Assessment. The PDD should include clear descriptions of the safeguards mentioned and the results processes conducted. The E&S Risk Assessment should focus particularly on the risks identified as ‘moderate’ in this screening, describing the identified risks in detail including any additional risks identified in the process. ESA, ESA Report in PDD: Sections 3.10.2 and Annex 8

Table A8.2 Community-level risk review

Key areas of risk	Community discussion on the importance of risk <i>Are the risks significant? Are there already measures in place to address them?</i>	Potential additional measures to reduce risk?
Risk of project impacting vulnerable groups. <i>How are they represented and how can we avoid elite capture of benefits?</i>	Vulnerable people are represented in the project, though in smaller capacity.	To include a section in the constitution elaborating about vulnerable people representation in the project. To include vulnerable people in the project’s activities where they will also be given equal opportunities.
Risk of project impacting gender equality. <i>How are they represented in the project?</i>	Gender is represented in the project. There is a risk of not considering gender balance in the project activities. This may result to misunderstandings among community members.	To include a grievance committee in the project which will help in solving such kind of misunderstandings. The project’s leadership to be firm in considering gender balance.
Risk to Human Rights. <i>Is decision making</i>	Community members are involved in the decision making process of the	To make the project’s activities to be as much transparent as possible to the community during

<i>democratic, how is exploitation avoided and what are the impacts of the project?</i>	project. Benefit sharing process will be open and transparent.	the community meetings and barazas.
<i>Risk to community, health, safety & security. How is conflict avoided and how are risks assessed when VSP runs activities?</i>	Risk of people getting hurt when conducting the project's activities. Current measures put in place is the placement of a suggestion box at the office where community members can forward their suggestions.	A grievance committee to be formed which will help in solving conflicts arising during the project period. To include safety trainings and enforce safety measures during project activities. To hold briefing sessions before engaging in activities which will help in observing safety measures.
<i>Risk related to labour and working conditions. How does VSP manage risk related to staff and employment?</i>	The risk of workers being recruited from specific villages only, which may lead to biasness. There is a potential risk of lack of proper channels where workers can present their complains. Risk of recruiting underage people as casual laborers.	To engage only adult community members with valid ID cards in the project activities. To give priority of the VSP opportunities to local community members in the project villages. The opportunities will be given to outside people only when the relevant people are not found within the community. Visitors to communicate prior before visiting Vanga Seagrass Project for effective planning.
<i>Risks related to resource efficiency, pollution, wastes, chemicals and GHG emissions. How is pollution e.g. potential leaks from boats</i>	Waste oil and leaking boat engines used in the project activities might lead to pollution. Trash being dropped into the sea while doing activities or when going to sea with visitors coming to see the project areas.	To sensitize boat owners especially the ones used in the project activities on the importance of carrying out regular maintenance of their boats to avoid leakages. More awareness and pre visit briefing concerning waste management to be done regularly.

<i>managed, are they regularly checked?</i>		
Risk to access restrictions and livelihoods. Does the project impact people's livelihoods either positively or negatively, how can negative impacts be reduced?	Fishers restricted from carrying out their fishing activities in the seasonally closed areas, which at times might also result to conflicts.	To conduct trainings on diversification, which might help the fishers venture into other sources of livelihood apart from fishing.
Risk to cultural heritage. Is the project area in a national or internationally recognised site of cultural heritage? Are there any risks to local cultural heritage?	No potential risk related to cultural heritage.	
Risk of impact to Local Communities and/or Indigenous Peoples. How may the project impact the local community?	Reduction of the fishing areas due to the restrictions set in the locally managed marine areas.	Impacting the local community more by adding more community projects.
Risk to biodiversity and sustainable use of natural resources. Does the project pose any risks to	No potential negative risk to biodiversity and sustainable use of natural resources from the project.	To emphasize on the project intervention measures which will be of great help in ensuring seagrass and biodiversity protection and conservation.

<i>biodiversity or sustainable use of the project areas?</i>		
Risk of land tenure conflicts. <i>How is the projects location in a Transboundary area managed, are there any land tenure conflicts related to the project?</i>	Arising of conflicts between the project and conservation groups which are carrying out their activities in the closed areas or adjacent areas.	Creating clear boundaries through proper demarcations which will help in reducing conflicts and encroachment.
Risk of not accounting for climate change. <i>Could the effects of climate change impact the project?</i>	The risk of extreme weather events affecting the project areas and activities i.e. strong winds, extreme tides, silt deposition by Umba river.	Increasing the conservation efforts and more awareness on climate change mitigation measures. Proper planning of the project's activities to avoid the harmful effects of the extreme climatic conditions.
Any other risks? <i>Please advice of any other risks which may relate to this project, how likely are they and what mitigation measures could be implemented?</i>	Not any other potential risks.	

A8.3 Findings from KMFRI social survey on community perceptions of potential project risks and suggested mitigation measures .

Perceived threats associated with the VSP	N	Percent	Suggested mitigation measures

1. Restricted access	21	38.2	• Provide efficient gears/vessels to enable fishermen explore deep sea fishing • Seasonal closure of the “<i>tengefu</i>” to allow regulated access for fishing
2. Illegal fishing	12	21.8	• Increase surveillance by employing scouts to conduct regular patrols • Awareness creation on the benefits of the “<i>tengefu</i>”
3. Conflict of interest	11	20.0	• Awareness creation on the benefits of the “<i>tengefu</i>”
4. Reduced fishing ground	10	18.2	• Provide efficient gears/vessels to enable fishermen explore deep sea fishing • Seasonal closure of the “<i>tengefu</i>” to allow regulated access for fishing
5. Loss of livelihood	1	1.8	• Provide alternative livelihood activities

Annex 9 – Land Management Plans

The project areas have been formally designated as Locally Managed Marine Area (Tengefus) through a community consultation process with Vanga and Jimbo BMUs and led by KMFRI. Fishers designated the LMMA boundaries and agreed the finalised management interventions (listed below).

Management of the LMMA will take place to ensure compliance with the agreed interventions. Management of the LMMA was decided through a series of stakeholder consultations between Vanga Seagrass Project (VSP), Kenya Fisheries Service (KeFS) and Vanga and Jimbo Beach Management Units (BMUs).

Mwarembo-Spaki and Jibweni-Bazo LMMA Patrols

The VSP committee has engaged with KeFS, the County Fisheries Officer and both Vanga and Jimbo BMUs to collaborate on LMMA Patrols. It was agreed that at least 2 but ideally 4 patrols per month will be conducted covering both project sites, two led by VSP and two led by the BMUs (one each). To ensure the patrols follow established regulations, community fishers who participate in carrying out patrols must have a valid fishing license, have up-to-date BMU registration and only fish with legal fishing gear. Patrol costs will include hire of

the boat, coxswain and payment of remunerations to participating community members. All members involved in the patrol will receive training from Kenya Fisheries Service (KeFS) on monitoring and surveillance and a Fisheries Officer from KeFS and/or the County Government of Kwale Fisheries Department will be present during patrols to ensure adherence to regulations. Training from KMFRI is also planned to train the team as 'seagrass assessors' so that whilst they are out on patrols, they can assess the seagrass and note down indicators of health, damage or signs of destruction from illegal activity.

Below are the agreed LMMA management interventions:

Seagrass LMMA Management Interventions

Vanga Bay, Kwale County

Vanga and Jimbo communities are working to establish a seagrass Locally Managed Marine Area (LMMA) within Vanga Bay fishing grounds. The LMMA will be comprised of two sites namely; Mwarembo-Spaki managed by Vanga Beach Management Unit (BMU), and Jibweni-Bazo managed by Jimbo BMU. The BMUs have consolidated management interventions for the closure sites through a series of community consultations to strengthen enforcement efforts (Table 1).

Table 1 Vanga Seagrass LMMA Management Interventions.

Item	Description	Intervention
Type of closure	Temporary	Closed for 10 months April – January and opened for 2 months February – March. During open season fishing activities will be allowed from 8:00 am to 11:00 am.
Gear restriction	Only legal artisanal gears allowed	Hook & line, handline, basket traps, fence traps, gill nets with mesh size > 6"
	Prohibited gears/activity	Gleaning, harvesting of seagrass and seaweeds, anchoring, speargun, spear stick, poison, dynamite, reef seine, gill nets with mesh size < 6", aquarium fishing, scoop nets, monofilament nets

Item	Description	Intervention
Restricted activities	Swimming	Must seek prior permission from BMU to swim or conduct research within closure.
	Tourism	Visitors are encouraged to dress modestly i.e. long pants/skirts/dress, no tank tops allowed. Tour guides to be assigned from BMU office.
Monitoring, Control and Surveillance	Boat patrols	To be carried out four times a month and a record of patrols kept.
	Surveillance	To employ two scouts
	Monitoring	To conduct monitoring of seagrass cover, species composition and distribution bi-annually, once per season. Seagrass vegetation assessment and faunal biodiversity assessment to be conducted annually.
Enforcement of management interventions	Actions to be taken for violators	1st offense will be issued a warning. 2nd offense, the violator will be reported to local fisheries office (KeFS), fishing gear and/or vessel confiscated to be released upon payment of fine issued. 3rd offense, violator will be handed over to KeFS and action taken in line with the Fisheries Act (2016) and BMU

Item	Description	Intervention
		by laws and regulations.

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Annex 10 – Project Agreements

Please find below the VSP x ACES Project Agreement

Project Agreement

Between

The Association for Coastal Ecosystem Services
(ACES)

And

The Vanga Seagrass Project
(A committee sitting within Vanga Blue Forest
Community-benefit Organisation)

Preamble

1.1 This agreement

This agreement lays out the terms of mutual commitment and describes the roles and responsibilities of the project partners in relation to the Vanga Seagrass Project in Kenya, including the community/communities of Vanga, Jimbo, Jasini and Kiwegu and the terms and conditions governing the project interventions and implementation.

This project agreement is valid from **17th December 2025** and is valid for 30 years.

1.2 Project partners

- The project partners are: Vanga Blue Forest Community-Based Organisation hereinafter referred to as "VBF CBO" in particular, the Vanga Seagrass Project (VSP) Committee that sits within the VBF CBO will lead, manage and make decisions regarding the project and will manage the benefits-sharing mechanism. The VSP committee is democratically elected to represent the local communities and is bound by the VBF CBO constitution.
- The Association for Coastal Ecosystem Services, "ACES", a charity registered Scottish Charitable Incorporated Organisation (SCIO. REG SC043978) under the laws of the Scottish Government.
- (Technical Advisor) Kenya Marine and Fisheries Research Institute hereinafter referred to as "KMFRI" a State Corporation established in 1979 by the Science and Technology Act, Cap 250 of the Laws of Kenya, which has since been repealed by the Science, Technology and Innovation Act No. 28 of 2013 which has recognized KMFRI as a national research institution under section 53, fourth schedule. KMFRI's mandate is to undertake research in "marine and freshwater fisheries, aquaculture, environmental and ecological studies, and marine research including chemical and physical oceanography", in order to provide scientific data and information for sustainable development of the Blue Economy.

- (Technical Advisor) Edinburgh Napier University, “ENU”, is a charitable body registered in Scotland (Charity Number SC018373) incorporated under the Universities (Scotland) Acts.

1.3 The intention of the project

This project is to be a fully certified under the PV Nature Standard under the Plan Vivo Foundation. This project intends to secure long-term and sustainable funding to implement social and environmental improvements for the communities of Vanga, Jimbo, Jasini and Kiwegu based in Kwale County, Kenya through the implementation of the Vanga Seagrass Project.

To achieve this, the following project interventions will be implemented:

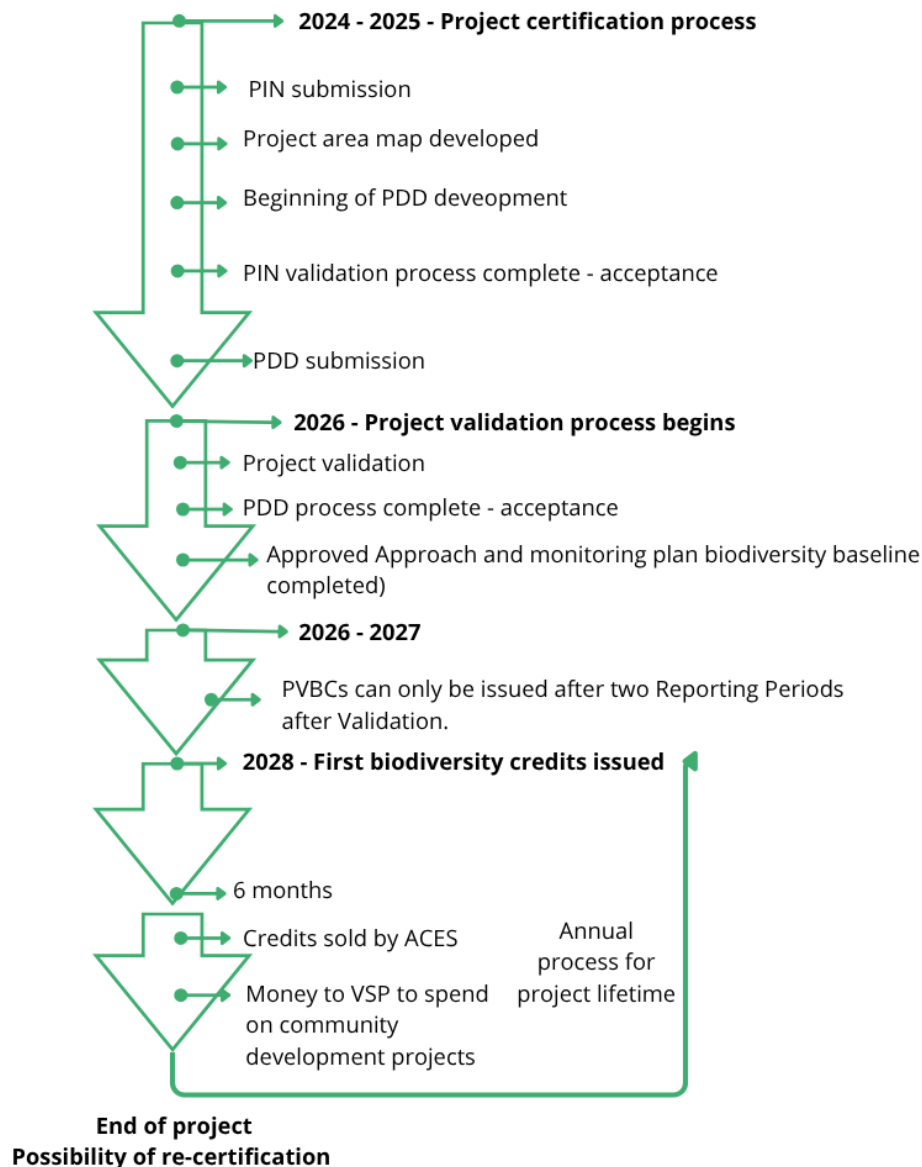
1. Seasonal closure (Improved management)
2. Gear restriction (Protection)
3. Enforcement of restrictions and closures (Protection)
4. Education (Improved management/Protection)

In addition, multiple mechanisms will be used to manage the project governance, including:

1. A benefit-sharing mechanism; this defines the distribution of project income, where at least 60% of income generated from the project will be directed to the community.
2. A Constitution including details on management, roles, responsibilities, terms and a grievance mechanism. The VBF CBO constitution governs the VSP committee.

1.4 Project timeline

During this project's lifetime, project participants (communities of Vanga, Jimbo, Jasini and Kiwegu) will not be able to generate, in the same project any other type of biodiversity credits or be involved in other programmes that deliver the same benefits with other parties or standards (See Annex 1 for project area/region map).



2. Objectives and roles

2.1 Mutual and general responsibilities

1. All parties shall commit to collaboratively working to achieve the objectives of this Agreement; including disclosing data and information as required for the execution of respective responsibilities, maintaining channels of communication necessary for collaboration, and committing to working in the primary interests of VSP and the community of Vanga Bay.
2. All parties shall adhere to relevant national legislation of Kenya; please refer to Annex B for details. All parties shall adhere to subsequent acts relating to Marine Resource Management and conduct all activities according to the laws of Kenya.
3. All parties agree to develop an organisational structure for the certified project governance that will include all relevant interest holders and work closely with a relevant governmental organisation that will help to play an oversight role and ensure all activities outlined in this and any further contracts are implemented with a participatory approach and in a sustainable manner in accordance with the legislation of Kenya.
4. All parties shall commit to handling any relevant grant or other funding relating to VSP with diligence and in the primary interests of VSP and the community of Vanga Bay. All funding relating to VSP shall be disclosed between partners.
5. All parties shall adhere to agreed communication of their own and partners' roles with respect to VSP, including acknowledging the remit and contribution of other partners and agreed use of branding and messaging.
6. All parties shall present the project, where necessary and appropriate, publicly and privately, to audiences including academia, conferences and working groups.
7. Uphold transparency and honesty: Partners shall ensure that any information provided to each other under this agreement is truthful, accurate and accessible in a transparent manner. Partners will inform ACES of any changes

to their ability to fulfil this agreement by adhering to the process described in section 3.6.

2.2 The responsibilities of ACES

ACES shall hereby:

- a. Lead project development process: ACES shall be responsible for the development of the project documents and processes as required under the Plan Vivo Standard (Project Idea Note, Project Design Document, and Validation). This work will require close collaboration with partners and community input. ACES will advise what information and process are required of partners to complete the document development within project timelines.
- b. Guide on activities and annual processes: ACES shall act as a project coordinator, providing advisory support to partners in context of the Vanga Seagrass Project. This includes contributing to the development of the Annual Report and its submission to Plan Vivo, similar to the development process, activities will require close collaboration and input from partners and the communities of Vanga, Jimbo, Jasini and Kiwegu.
- c. Provide guidance and logistics.
- d. Secure appropriate buyers for the biodiversity certificates.
- e. Compensate VSP with the revenue generated from biodiversity sales, at a rate determined by the biodiversity market at the time, if conservation targets are met in accordance with the results-based payment plan. Provide VSP and KMFRI with financial reports annually.

2.4 The responsibilities of Vanga Seagrass Project committee within VBF CBO

The Vanga Seagrass Project Committee shall hereby:

- a. Liaise between partners and inform project documents: the VSP committee shall collaborate with ACES in the development of project documents. The VSP committee shall liaise between relevant partners and the participating

communities to ensure that all information is to the best of knowledge or most recent data. The VSP committee is responsible for ensuring that the members of the participating communities understand the project, their rights under UNDRIP and other regulations, their responsibilities and how they can submit feedback.

- b. Lead in-country project activities: The VSP committee will follow guidance from ACES and shall be responsible for the day-to-day project operations, they will have an office space and hold copies of all project documentation. The VSP committee will carry out activities required to achieve and maintain certification under the Plan Vivo Standard and will mobilise the community or other partners where relevant.
- c. Engage with activities carried out by external partners: the project will be subject to activities carried out by external organisations, such as regular project audits and research activities, the VSP committee will follow guidance from ACES and collaborate with external partners and engage in activities.
- d. Ensure no project overlap: Inform ACES of any other local, national, and international partnerships that VBF CBO or the VSP committee enters or intends to enter, especially those that offer funding for any activities involving the community.

3. Terms and conditions of this agreement

3.1 Monitoring.

For the purposes of this agreement, biodiversity conservation, as a result of two Locally Managed Marine Areas (LMMAs) will be monitored as part of a Monitoring Plan. The provision of ecosystem services from this project is monitored through socioeconomic and environmental indicators as stipulated by the PV Nature Standard.

The delivery of biodiversity conservation will be indicated by annual monitoring.

Monitoring activities and annual activity-based indicators can be found in the PDD however, a summary of how credits are generated from the monitoring data is included in Annex C.

3.2 Payments.

Payment will be linked to monitoring results in relation to the targets and thresholds described in Annex C and the PDD.

Payments are directly dependent on sales; this means that in case that there are no sales of biodiversity credits, it would be impossible to have payments.

Payment will only be made if responsibilities and, where applicable, corrective actions are correctly carried out by the parties.

The expected annual biodiversity credits will be: 4,050. This is calculated by 18 credits per hectare (225 hectares in the project areas) if at least 90% of the baseline is maintained.

The distribution of the income from these payments will follow the defined benefit sharing mechanism. At least 60% of income will be allocated to the community and expenditure will be reported annually.

3.3 Buffer and leakage.

There is a deduction of the risk buffer (20% of biodiversity credits generated), which is pooled by Plan Vivo and therefore not available for participants to claim. A leakage tool is also under development by Plan Vivo which may stipulate a further 20% of credits are set aside to account for potential leakage.

3.4 Term of the agreement

This agreement will remain in force for a period of 30 years from the date of signing, unless payments are withheld in any year, in which case the parties shall agree to an extension and corrective actions as set forth in section 5.

3.5 Free, Prior and Informed Consent

By signing this agreement, the parties acknowledge that a process aligned to the Declaration on the Rights of Indigenous Peoples (UNDRIP), specifically Free, Prior and Informed Consent was followed and will be respected throughout the project lifetime.

3.6 Changes renewals or withdrawal from this agreement

This agreement can only be amended, improved and renewed in writing as shall be mutually agreed and through appending the signatures of all parties.

This agreement can be annulled in writing by a single party. There is a 30-day withdrawal period from date of notification of withdrawal.

3.7 Issues beyond normal human control / force majeure

None of the parties to this contract shall be liable for any failure to perform its obligations where such failure is as a result of acts of nature including fire, flood, earthquake, storm, hurricane or other natural disaster, pandemic, war, invasion, act of foreign enemies, hostilities (whether war is declared or not), civil war, rebellion, revolution, insurrection, military or usurped power or confiscation, terrorist activities,

nationalisation, government sanction, blockage, embargo, labour dispute, strike, lockout or interruption or failure of electricity.

Either party, asserting force majeure as an excuse shall have the burden of proving that reasonable steps were taken (under the circumstances) to minimise delay or damages caused by the foreseeable events, that all non-excused obligations were substantially fulfilled, and that the other party was timely notified of the likelihood or actual occurrence which would justify such an assertion, so that other prudent precautions could be contemplated.

3.8 Exclusion clause

This project agreement confirms the full support of Vanga Seagrass Project and VBF CBO and the people of Vanga, Jimbo, Jasini and Kiwegu, are represented here by the signature of the democratically elected Vanga Seagrass Project Chair and one other member of the Vanga Seagrass project committee. We confirm that the project area is committed to Vanga Seagrass Project. This land will not be used for any other biodiversity crediting projects, including any that have already been started, unless the community formally chooses to end its support for Vanga Seagrass Project in which case they will need to follow processes as described in Section 3.6.

4. Sign off

The parties agree to the terms and conditions contained in this agreement and all annexes.

This agreement is hereunder signed by both parties of this Memorandum of Understanding and so witnessed this **(date) 17th December 2025**.

A: On behalf of ACES

Name Robyn Morland

Position Director

Signature 

B. On behalf of Vanga Seagrass Project committee within VBF CBO

1) Name Saji Juma Hamis

Position Chairperson

Signature 

2) Name Mwinyi Hassan Mohamed

Position Project Officer

Signature 

C. Supervisory signature on behalf of County Government of Kwale

Name Sydney Ngatu Mokhoy

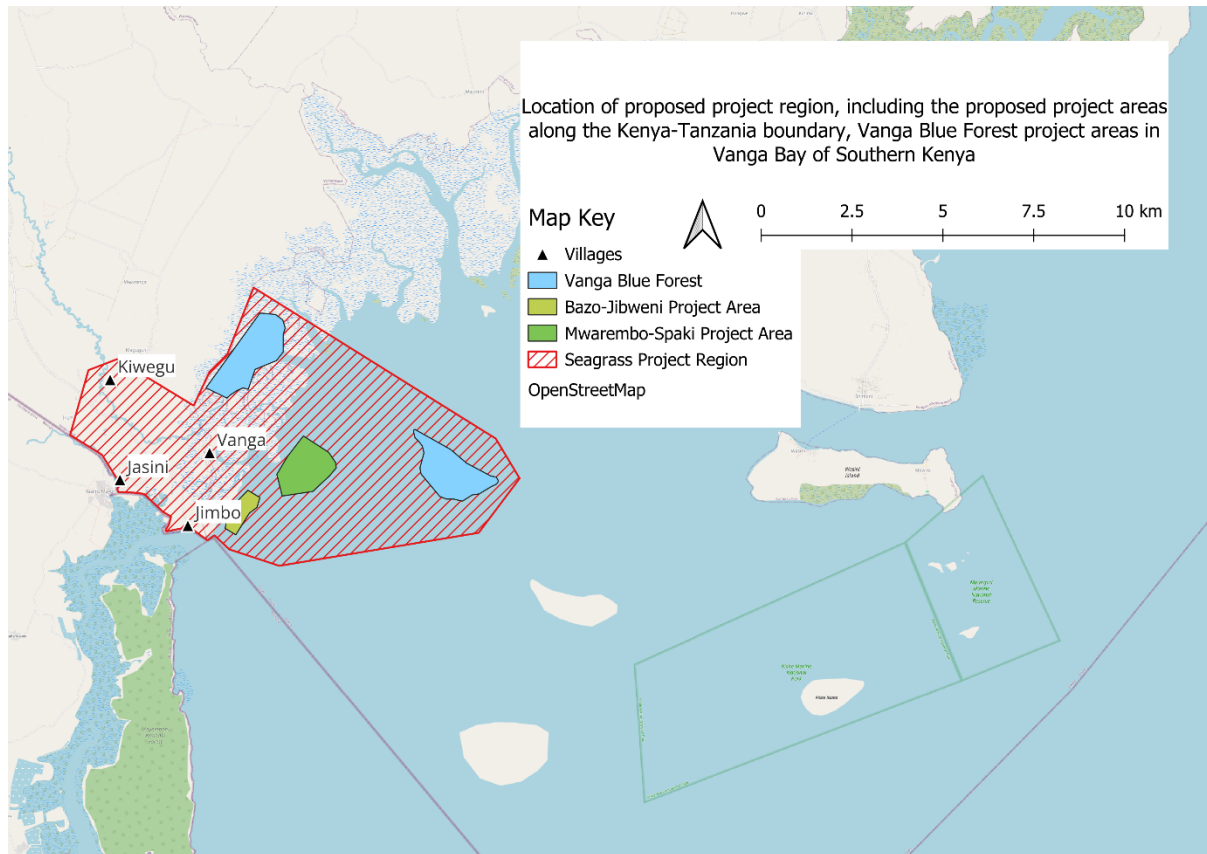
Position SSDO

Signature 

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Annex A: Project map

Please note that this map may be an older version, please refer to the Project Design Document available on the Plan Vivo website for the most up to date project area map.



Annex B. Alignment with national legislation

The table below shows the national and international policies, laws and regulations that affect the project and how we aim to comply with them.

Policy, Law or Regulation	Relevance	Compliance Measures
Constitution of Kenya, 2010	Local people are formally recognised as primary resource users.	The project recognises the local communities as primary resource users. The project upholds the Constitutions two-thirds

	The Constitution also upholds a two-thirds gender rule to increase inclusion of women and encourage women to assume leadership roles and involvement in decision-making processes. The Constitution details the right to a clean and healthy environment.	gender rule. An example of this is the inclusion of 4 women within the Vanga Seagrass Project committee. The Constitution provides a basis for the project activities surrounding environmental protection and management
Environmental Management and Coordination Act (EMCA), 1999	Establishes the National Environment Management Authority (NEMA) as the primary regulatory body for environmental protection and management.	NEMA will be consulted to review the project as required. Currently, Environmental Impact Assessments are not required for biodiversity crediting projects but are for carbon crediting projects under the new regulations. The project will consult with NEMA and will conduct an Environmental Impact Assessment if advised to do so by the authority.
Wildlife Conservation and Management Act, 2013	Provides for the protection, conservation, sustainable use, and management of wildlife in Kenya.	This Act applies to all wildlife resources on public, community and private land, and Kenya territorial waters. It stipulates that Kenya Wildlife Service (KWS) must advise on

		community wildlife conservancies/sanctuaries. As a result, the project will engage with KWS regarding the project.
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. 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.	This act provides a basis for establishing community conservation areas within the marine environment (Such as the LMMA). This act also highlights the need for the project to engage closely with the local BMUs.
Community Land Act, 2016	Recognizes the rights of communities to manage their land and resources.	Supports the development of the LMMA (Tengefu).
National Biodiversity Strategy and Action Plan (NBSAP)	Outlines Kenya's overarching goals for biodiversity conservation.	Supports the importance of the project and local biodiversity to socio-

	Highlights the importance of Kenya's biodiversity to national socio-economic and cultural sustainability.	economic and cultural dynamics. Encourages intensification of sustainable management and conservation of natural resources - highlighting support for biodiversity conservation activities.
International agreements	Kenya is a signatory to the Convention on Biological Diversity (CBD), which provides a global framework for biodiversity conservation.	Highlights Kenya's overarching commitment to biodiversity conservation, showing that the project aligns with national and international goals and targets.

Annex C: Monitoring

Monitoring activities will need to be completed at least annually. The monitoring plan and Approved Approach is currently under development and will be completed collaboratively. Full details will be included in the approved PDD and Approved Approach however, monitoring will take place across 5 Pillars (species richness, species diversity, taxonomic dissimilarity and two habitat monitoring pillars) and across 3 taxonomic groups (seagrass, fish and slow-moving epibenthic macroinvertebrates).

Monitoring results will be combined into a multimetric and used to calculate Plan Vivo Biodiversity Conservation Certificates. Conservation certificates are issued when the Year 0 (biodiversity baseline) values of the pillar metrics are maintained over time, as measured by the multimetric.

A multimetric value of zero for a given year means that 100% of the biodiversity baseline has been conserved. If 100% of the biodiversity baseline is conserved, a project can issue 20 conservation certificates per hectare per year.

To allow for natural, interannual biological fluctuations in biodiversity at site level, certificates can be issued if >90% of the Year 0 multimetric value is conserved. If the multimetric value drops below 90% of the Year 0 value, no certificates can be issued. The number of certificates that can be issued (per hectare per year) decreases from 20 to 18 as the multimetric value drops from 100% to 90%.

Note that the threshold of 90% represents a conservative approach and may be updated in future by Plan Vivo as more real-world data and evidence become available.

Annex 11 – Monitoring Plan

The Monitoring Plan has been made available to the Plan Vivo Foundation and is available upon request at aces@aces-org.co.uk as due to the file size, it was difficult to include as an annex.

Annex 12 – Project Database

ACES and VSP collaborate on a Shared Folder with limited access. This allows for access to important documentation which will be reviewed periodically. An overview of this database is provided in the figure below:

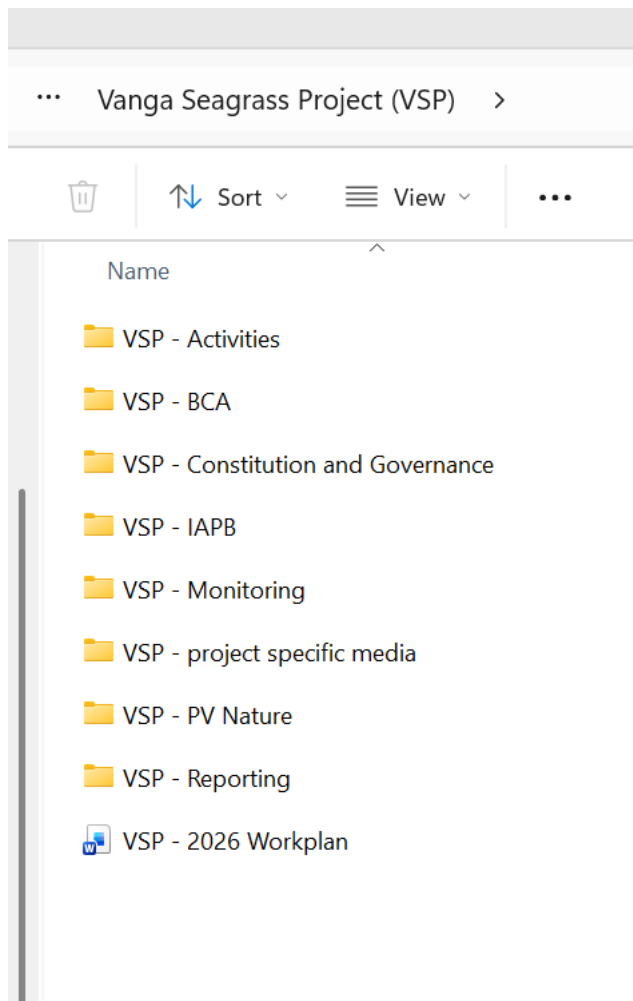


Figure A12.1: VSP Database shared between the VSP staff team and ACES.

Annex 13 – Letter of Approval

Figure A13.1 VSP NEMA License





nema
National Environment Management Authority

EIA23060001

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY

ENVIRONMENTAL MANAGEMENT AND COORDINATION ACT, Cap 387

ENVIRONMENTAL IMPACT ASSESSMENT LICENSE

Comprehensive Project Report

License No.:

NEMA/ENVIS/CPR/LIC-5951

Application Reference No:

NEMA/ENVIS/CPR/13125

This is to certify that the Environmental Impact Assessment Report received from

Vanga Blue Forest Community Based Organization-cbo

Of P.O BOX 115, 80402,LUNGA LUNGA.

submitted to the National Environment Management Authority in accordance with the Environmental Impact Assessment & Audit Regulations, 2003 regarding the:

PROPOSED VANGA SEAGRASS PROJECT

whose objective is to

Strengthen Locally Managed Marine Areas (LMMAs) through implementation of community-led conservation measures through interventions such as seasonal conservation closures, fisheries management measures, biodiversity monitoring, community awareness programmes, ecosystem protection activities, and strengthening of local governance, within an area covering approximately 225 hectares of intertidal and subtidal seagrass meadows

Located at **Mwarembo-Spaki/Jibweni-Bazo, Lunga Lunga subcounty, Kwale County**

has been reviewed and a license is hereby issued for the implementation of the project, subject to the attached conditions.

Issue Date: **21st September 2026**



Edith Kalo

For DIRECTOR GENERAL

National Environment Management Authority

P.T.O.



ISO 9001 : 2015 Certified

Figure A13.2 Letter from KeFS



REPUBLIC OF KENYA
KENYA FISHERIES SERVICE

Tel/Fax: +254 41 2221318
E-mail: coast@kefs.go.ke | kefscoast@gmail.com
When replying/telephoning quote:

MARINE & COASTAL REGION
P.O. BOX 90423-80100
MOMBASA

Ref No KeFS/MCR/ADMIN/01/VOL.3/309
Date

17th September 2026

All correspondence should be addressed to:
"the undersigned"

County Director
National Environment Management Authority

At: Ms Edith Kalo

Dear Madam,

RE: ESTABLISHMENT OF COMMUNITY CLOSURE AREAS AND THE PROPOSED BIODIVERSITY CREDITING PROJECT

The Kenya Fisheries Service (KeFS) is mandated to conserve, manage and develop fisheries and aquatic resources in collaboration with county governments and other stakeholders. In 2024, KeFS, the Kwale County Government fisheries department and seven Beach Management Units (BMUs) jointly revised the Shimoni-Vanga Joint Co-management Area Plan in accordance with the BMU Regulations and applicable co-management guidelines. The revised plan guided the establishment of community closure areas, which KeFS, the county fisheries department, the BMUs and associated community groups are now working to legally recognise .

KeFS is also collaborating with the BMUs and Vanga Blue Forests (VBF) in the co-development of the proposed biodiversity crediting project, which is among the activities identified in the operational plans for the closure areas.

We confirm that this office is aware of and has been informed about the establishment of two community closure areas in Vanga Bay for seagrass conservation and fisheries enhancement: Jibweni-Bazo, established by Jimbo BMU, and Mwarembo-Spaki, established by Vanga BMU.

KeFS recognises the importance of these initiatives in strengthening biodiversity conservation, enhancing fisheries productivity and advancing community-led marine resource management. We look forward to continued engagement with NEMA and other partners to support regulatory compliance, effective implementation, and long-term sustainability.

Yours faithfully,

Elizabeth Mueni
Deputy Director,

Figure A13.3 Letter from County Government of Kwale



COUNTY GOVERNMENT OF KWALE

DEPARTMENT OF AGRICULTURE, LIVESTOCK AND FISHERIES

Office of the County Director Fisheries

P.O. Box 2 – 80400
Kwale, Kenya

Website: www.kwale.go.ke
Email: fisherieskwale@gmail.com

Ref: FISH/KWL/DEV/21/1/100

4TH August 2026

The Project Coordinator
Vanga Blue Forest

**RE: LETTER OF NO OBJECTION FOR THE IMPLEMENTATION OF THE
VANGA SEAGRASS PROJECT**

The County Government of Kwale, through the Department of Agriculture, Livestock and Fisheries, acknowledges the ecological and socio-economic importance of seagrass ecosystems which provide critical habitats for marine biodiversity.

Having considered the objectives of the proposed project, the County Government has **no objection** to its implementation, provided that all project activities are undertaken in compliance with the applicable laws, regulations and policies project should also ensure meaningful engagement with the County Government, Beach Management Units (BMUs), local communities and other stakeholders throughout its implementation.

The Kwale County Fisheries division looks forward to continued collaboration.

Sincerely,



Annex 14 – Financial Plan

The financial plan has been made available to the Plan Vivo Foundation.

Annex 15 – AI Tool Use Disclosure

Declaration of AI Tool use

1. Have AI tools been used in the creation or presentation of information within this PDD? ☐ Yes ☒ No

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

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