

PV CLIMATE ANNUAL REPORT

Vanga Blue Forest

Vanga Bay, Kwale County, Kenya



Developed by:

Meali Mohamed Maule, Hamadi Tsunusi, Robyn Morland, Amber Baker, and Mark Huxham

Contents

1	Project Overview.....	3
2	Part A. Project updates	4
1.	Key events.....	4
2.	Success and Challenges.....	14
3.	Future developments.....	15
3	Part B. Project activities	17
1.	Project activities generating Plan Vivo Certificates	17
2.	B2 Project activities in addition to those generating plan vivo certificates	17
4	Part C. Plan Vivo Certificate issuance submission.....	18
5	Part D. Sales of Plan Vivo Certificates	19
6	Part E. Monitoring results	20
1.	E1: Ecosystem services monitoring results.....	20
2.	E2: Maintaining commitments.....	20
3.	E3: Socioeconomic monitoring	20
4.	E4: Environmental monitoring.....	20
7	Part F. Impacts	20
1.	Evidence of outcomes.....	20
8	Part G. Payments for Ecosystem Services.....	22
9	PART H Ongoing Participation.....	23
1.	Recruitment	23
10	Part I. Project operating costs.....	24
1.	Allocation of costs.....	24
11	Annexes.....	24
	Annex 1. Monitoring results for issuance request.....	24
	Annex 2. Historical sales of PVCs	26
	Annex 3 : VBF CBO 2024 MEETINGS	28
	Annex 4. Seagrass LMMA.....	32

1 Project Overview

Project overview			
Reporting period	1 st January 2024-31 st December 2024		
Geographical areas	Southern Coastal Kenya, Kwale County, Lungalunga Sub-county, Vanga, Jimbo, and Kiwegu villages, Vanga Bay. The project region is located in the transboundary conservation area between Southern Kenya and Northern Tanzania		
Technical specifications in use	Vanga Blue Forest		
	Historical (2020-2023)	Added/issued this period (2024)	Total
No. of households with PES agreements (where applicable)	0	0	0
No. of community groups with PES agreements (where applicable)	1	0	1
Approximate number of households (or individuals) in these community groups (if known)	974 households	0	974
Area under management (ha) where PES agreements are in place	460	0	460
Total PES payments made to participants (USD)	127,546	54,210	181,756
Total sum held in trust for future PES payments (USD)	9,894		
Allocation to Plan Vivo buffer (tCO ₂)	4,426	1,650	6,076
Saleable emission reductions achieved (tCO ₂)	18,840	4,821	23,661
Unsold stock at time of submission (PVC)			
Total unsold stock (PVC)			
Plan Vivo Certificates (PVCs) issued to date			18,840
Plan Vivo Certificates requested for issuance			4,821
Plan Vivo Certificates available for future issuance (REDD only)			0
Total PVCs issued (including this report)			23,661

2 Part A. Project updates

1. Key events

28th February 2024: Vanga Blue Forest CBO held its first meeting to plan for the annual project activities. Among the activities planned were: completion of the 2023 community projects, installation of energy saving stoves, collection of the two sets of mangrove data, interviews for the VBF Project Coordinator, mangrove seedling transplanting, world mangroves day event, handing over of the 2023 community projects, community barazas, woodlot seedling replacement and weeding, mangrove forest survey, awareness creation, implementation of the 2024 community projects, VBF committee capacity building trainings, exchange visit and submission of the VBF annual report.

February-April 2024: Stove (Jiko) project – Following the community awareness meetings held in Kiwegu in December 2022, which was meant to educate the community members on the importance of using the energy saving Jiko, Vanga Blue Forest went ahead to train the diary keepers on the jiko pilot project data collection. In this year, 2024, installation of 20 energy saving jikos was done in 20 households under the supervision of Lilian Mwihaki, one of the KMFRI officials who is doing a PhD with Edinburgh Napier University, on the effectiveness of the stoves, and in close collaboration with Hamadi Tsunusi, the assistant Project Coordinator and who was acting Project Coordinator after the departure of the Project Coordinator in April 2024.

7th to 10th March 2024: Vanga Blue Forest CBO visited its sister project, Mikoko Pamoja, in Gazi to celebrate the 10th anniversary of Mikoko Pamoja.

19th March 2024: Prof. Mark Huxham visited the VBF project with the aim of looking at the VBF progress, bundling seagrass project to the VBF project, and helping the community understand how the bundling of seagrass project to VBF project will work. As part of the ACES team, he also wanted to know the challenges that the VBF project is facing and find the best way to help overcome or get the solutions to the challenges being faced by the VBF project.

4th to 9th May: In addition to the normal mangrove monitoring done in area 1 (Sii island) and area 2 (Kiwegu), VBF established new mangrove permanent monitoring plots in the VBF afforestation site (area 3) in Bazo and Makombe in Jimbo village. This was meant to ensure that all the 460ha of mangroves are effectively monitored.

31st May 2024: Forest scholar program: Vanga Blue Forest ran a ‘forest scholar’ program in collaboration with Mikoko Pamoja through funding from Sustainable Ocean Alliance. The aim of the program was to train the local community members on how to collect and analyse mangrove forest data as well as enabling them to learn key concepts on carbon sequestration and mangrove forest conservation. This program ended on February 2024 with certificates awarded to all of the 5 youth graduates



Figure 1. Forest scholars graduating from the program

from Vanga and Kiwegu and other 5 youth graduates from Gazi and Makongeni.

1st June 2024: Due to the increase in office equipment like the furniture, GPS, computers and the solar system, Vanga Blue Forest C.B.O added a new employee; an office security guard-to ensure security especially during the night.

June 2024: In 2023, Vanga Blue Forest C.B.O received a grant from the Earth Watch Shullman award project. The funding aimed at training community members on mangrove ecosystem, threats to mangroves and restoration. By the end of the training, the community members were supposed to



Figure 2. Community members transplanting seedlings

establish nursery beds and the transplanting of the seedlings. In 2023, the community members were trained on nursery beds establishment and two nursery beds were established: one in Vanga Village and the second in Jimbo village. In 2024, during the last phase of the Shullman award project, the community members

were trained on mangrove seedling transplanting. After the training, the VAJIKI community members managed to transplant a total of 1043 mangrove seedlings in Vanga village and 1340 seedlings in Jimbo village.

27th June 2024: The VBF Acting Project Coordinator attended **the Second Shimoni-Vanga multi-stakeholder forum** meeting for the year 2024 and 7th since inception, at the Kenya Wildlife Service (KWS) Resource Centre, located at Shimoni, Kwale County. In attendance were Deputy County Commissioner (DCC) Lungalunga Sub County, Kwale County Director Fisheries (CDF), County Fisheries



Figure 3. Report of the 7th Shimoni-Vanga multi-stakeholder forum

Officers, representatives from Kenya Fisheries Service (KeFS), Community Action for Nature Conservation (CANCO), Kenya Marine and Fisheries Research Institute (KMFRI), Vanga Blue Forest CBO, Community Forest Associations (CFAs) and among other stakeholders. The agenda for the meeting was validation and approval of amendments to the Memorandum of Establishment for the Shimoni-Vanga Multi-Stakeholder Forum, Confirmation of the forum

committees' focal point, Discussion of emerging issues and Stakeholders briefs. During the meeting, the County Director of Fisheries (CDF) Mr. Mbaraka Mapapa emphasized on the role of engagements in enabling the county to understand the stakeholders' goals concerning the community and the ecosystem. The Co-chairperson of the forum Mr. Joseph Sawe (The Deputy County Commissioner

Lungalunga) also appreciated the efforts by Shimoni-Vanga stakeholders towards improving the conservation and management of marine resources.

26th July 2024 – the VBF Acting Project Coordinator and the VBF assistant secretary (Mwanamisi Omari) and the VBF chairperson (Mr Mwachambi Kai) represented Vanga Blue Forest at the Kwale county World Mangroves Day celebrations that was held in Tsunza LungaLunga sub-county. Among the activities of the event was the mangrove planting and speeches from KFS manager, KWS, KMFRI, COMRED, Base Titanium and Majoreni BMU.

5th August to 7th August: Vanga Blue Forest C.B.O officially handed over the 2023 community projects, that is, the Bushra madrasa renovation in Vanga, the construction of two madrasa classrooms in Jimbo and the construction of three Kiwegu madrasa classroom to the community members of Vanga, Jimbo and Kiwegu respectively.



Figure 4. VBF-funded madrasas in Vanga (left) and Jimbo (right)

8th August to 10th August: Vanga Blue Forest CBO held community barazas where the villagers prioritized their projects. Each village prioritised its top three projects from among the listed projects. Vanga villagers prioritised provision of 300 desks to Vanga primary school to support 1600 pupils, finishing of masjid India, provision of Vanga health centre equipment such as electric suction machine,



Figure 5. Community baraza to discuss community development priorities

provision of 20 chairs and one table to the Vanga village chairperson's office and roofing of 4 classes of Vanga primary school. Jimbo villagers prioritised renovation of masjid muzdalifah, construction of a toilet for the Jimbo community madrasa staff house, Construction of Jimbo ECDE toilet and printing machine for Jimbo

madrasa. Kiwegu prioritised renovation of masjid Munira in Kiwegu, Construction of a foot bridge at Mzinje pathway and construction of a well at Kiwegu dispensary.

28th August 2024: The VBF acting Project Coordinator participated in the Kenya national consultation forum hosted on 28-29 August 2024 in Kwale county at Jacaranda Beach resort. The objectives of the forum included assessing the status and situation of LMMAs in the country, identifying challenges and opportunities, and discussing the Vanga LMMA expansion strategy. The insights gained from the consultation will contribute to the national message that will be



Figure 6. VBF Acting Coordinator Hamadi Tsuni presenting at the Kenya national consultation forum

incorporated into the Western Indian Ocean (WIO) LMMAs action plan and the road map emerging from the regional forum. The VBF acting Project Coordinator therefore managed to highlight the benefits generated from the VBF project which focuses on climate change mitigation, long-term socio-economic developments of the local community and biodiversity improvement through mangrove and seagrass conservation.

2nd September 2024: Following the resignation of the former Project Coordinator of VBF in April, a new Project Coordinator, Meali Mohamed, was recruited through an interview that was organised and conducted by the VBF committee in close collaboration with the KMFRI team-Gazi station, KFS manager-Budha station, Area chief-Vanga location and the sub-county village administrator. The VBF Committee held a meeting to formally welcome the new Project Coordinator. This meeting was crucial for integrating the new coordinator into our operations and discussing the subsequent change of signatories on the bank accounts. Following the introduction, the signatories on the bank accounts were updated. This change was necessary to grant the new Project Coordinator access to funds, ensuring seamless financial management for upcoming activities. Meeting notes documenting this decision were circulated among committee members. During this meeting, the preparation of the woodlot was discussed as a key focus area.

23rd-24th September 2024: The VBF committee members organized a forest survey involving the VBF committee members from Vanga, Jimbo, and Kiwegu, the VBF scouts, as well as the KFS ranger. The primary goal of the survey was to assess the status of the whole VAJIKI CFA forest's condition in terms of whether there is increased/ decreased illegal activities, deforestation/ regeneration rate, among other challenges and identification of possible solutions to the challenges.



Figure 8. Committee and community members conducting a forest survey of the mangroves of Vanga, Jimbo and Kiwegu

25th-27th September 2024: The Vanga Blue Forest Project conducted education and awareness creation activities in Jasini, Kiwegu, and Migombani villages, with participation from KFS guards, village heads, chiefs, and community members. The aim of the awareness sessions was to highlight the importance of mangrove forests. Materials used for the campaigns included banners, posters, T-shirts, and poems focused on the significance of mangroves.





Figure 9. Awareness raising events in Jasini (upper) and Kiwegu (lower) villages

2nd-4th October 2024: VBF Project Coordinator Meali Mohamed attended the Blue Economy Innovation and Investment Summit at Sarova Whitesands Beach Resort in Mombasa, representing Vanga Blue Forest. This conference was highly relevant as it focused on sustainable practices and investment opportunities within the blue economy, offering insights that can directly benefit our initiatives. The knowledge gained from discussions on innovative approaches to marine and coastal resource management will assist in enhancing our conservation strategies at Vanga Blue Forest, promoting sustainable development while protecting vital ecosystems.



Figure 10. Meali Mohamed (left) at the Blue Economy Innovation and Investment Summit

9th October 2024: Vanga Blue Forest received visitors from the University of Nairobi, including two students participating in a project on ocean governance and carbon credits funded by Denmark. The focus of their research is to understand how the community engages with carbon credit projects and the associated governance. Their visit aimed to establish an introduction and explore what they could learn from the VBF initiatives and experiences.

29th October 2024: The Vanga Blue Forest committee held a grievance training session that involved committee members, scouts, forest scholars, KFS guards, the Vanga Seagrass Committee, and a representative from KMFRI. The training emphasized the importance of a grievance process,

highlighting its necessity and key components. This process is crucial for effectively addressing conflicts and issues within the community and related projects, providing a structured framework for individuals to voice their concerns and ensuring grievances are resolved in a timely manner.



Figure 11. Grievance training and awareness session

30th October 2024: The Vanga committee, led by Assistant Project Coordinator Mr. Hamadi Tsunusi, delivered medical equipment to the Vanga Health Care facility as part of one of this year's projects. This initiative aims to enhance hospital operations and significantly benefit the community, aligning with our primary goal of improving healthcare services for local residents. By providing these resources, we are committed to fostering better health outcomes and supporting the well-being of the community.



Figure 12. Assistant Project Coordinator Hamdi (pink shirt) and Chairman Harith (front left) delivering healthcare equipment to the Vanga Health Facility

31st October-5th November: The VBF team conducted a monitoring training course to refresh the community on their roles and responsibilities, followed by the actual monitoring activities aimed at assessing the health of the mangroves. The scouts, guards, and KFS personnel, along with experts from KMFRI, assisted us in this effort. Their collective support was instrumental in ensuring a thorough and effective monitoring process, helping us track changes in the ecosystem and make informed decisions for conservation.



Figure 13. Community members taking part in a monitoring training course

5th-12th: The ACES team visited the VBF team and project areas in November. Their purpose was to meet the team and committee, assess the progress of the project, and observe the activities we are undertaking. During their visit, they actively engaged in the daily operations at Vanga and were shown the various projects that the Vanga Blue Forest has implemented. They were joined by Raphaëlle Flint of Dona Bertarelli Philanthropy, who have co-funded the development of a biodiversity crediting project adjacent to VBF. This will move the current 'carbon-plus' funded LMMA to a stacked approach under the PV Nature framework.



Figure 14. Raphaëlle Flint (fifth right), Amber Baker (fourth right) and Amelia Allerton (third right) visiting VBF

11th-22nd November 2024: VBF Project Coordinator Meali Mohamed attended the COP 29 conference in Baku, Azerbaijan. This event is significant as it addresses global climate change negotiations, particularly concerning carbon credits, which are essential for financing conservation projects like those at Vanga Blue Forest. For the Project Coordinator, attending COP 29 provided invaluable opportunities for networking with international stakeholders and experts in the field, gaining knowledge on the latest developments related to carbon credits, and learning best practices that can be applied to enhance our conservation efforts. These insights and connections will be instrumental in advancing our initiatives and improving the sustainability of our mangrove ecosystems.



Figure 15. Project Coordinator Meali Mohamed at COP24

November 2024: The Vanga Blue Forest (VBF) project successfully received funding from ORARO & Co, a Kenyan legal firm, allowing them to enhance their operational efficiency with the purchase of essential office equipment. Funding from ORARO and Co was a sponsorship from income from their tickets sales for their annual Run for the Ozone event. Thanks to this sponsorship, the project has



Figure 16. Handing over equipment funded by ORARO and Co

acquired an office motorbike, which facilitates the Project Coordinator and assistant in their movements to monitor ongoing activities and initiatives. Additionally, an office projector has been procured to improve presentations and meetings. Two bicycles have been provided for the guards, aiding them in their daily duties, while office uniforms and three pairs of boots ensure a

professional appearance and safety. This investment has significantly boosted the project's capacity to manage its conservation efforts effectively.



Figure 17. The Assistant Coordinator receiving the motorbike on behalf of VBF

2. Success and Challenges

Success

1. Updated plots: Establishment of new permanent monitoring plots by the Vanga Blue Forest (VBF) in the afforestation sites of Bazo and Makombe, located in Jimbo village.
2. Sponsorship: Successfully secured funding from ORARO & CO, a legal firm based in Nairobi Kenya. This donation enabled the purchase of essential office equipment, including a motorbike for project oversight, an office projector for enhanced presentations, two bicycles for guards, and uniforms with boots, greatly improving operational efficiency and capacity for effective conservation management.
3. Teamwork: The project was successfully and smoothly managed by Mr. Hamadi Tsunusi who worked as Acting Project Coordinator for six months – the sole Project Coordinator staff member until the recruitment of a new Project Coordinator and an office security guard later on in the year
4. Monitoring: the VBF team and volunteers successfully managed the collection of the two sets of mangrove forest carbon data to inform carbon benefits achieved this year and the subsequent PVC issuance.
5. Vanga Seagrass Project: The communities involved in the VBF project have always been keen to support their seagrass. ACES and VBF worked together to develop and implement a Carbon-plus model, where seagrass conservation activities could be funded through donations from carbon credit buyers. Thanks to the recent release of the PV Nature Standard and securing appropriate funding from Dona Bertarelli Philanthropy and ORRAA, the project teams and partners (KMFRI, ENU) are collaborating on developing a formal seagrass biodiversity project and including the seagrass project with VBF. This will move the current 'carbon-plus' funded LMMA to a stacked approach to credits under PV Nature. Related activities included the recruitment of the seagrass project officer. More information is provided in a subsequent section of this report.

Challenges

1. Continued mangrove cutting: The cutting down of mangroves in the plots continues in some of the villages and Sii Island. The risk of this increasing in project areas is mitigated by continued engagement with the project participants and Jimbo village. The VBF team are aware that improvements to forest scouts mobility can be made with equipment purchases such as a boat to conduct monitoring in harder to reach areas (and increase scout visits to Sii island). The VBF team applied to a GEF grant to secure appropriate equipment but were unsuccessful, they will continue to find opportunities to fund the equipment. The sponsorship donation from ORARO & Co allowed for some equipment for the forest scouts.
2. Limited staff capacity: The Project Coordinator resigned in April, and a replacement was not hired until September. Fortunately, the Assistant Project Coordinator, Hamadi Tsunusi is extremely familiar with the project and was able to work well with the committee and communities to continue project activities seamlessly as Acting Project Coordinator.
3. Delay in project area expansion: Despite multiple follow ups with the relevant national authorities, it is still unclear when the moratorium on new and expansion of carbon projects will be lifted.

4. Woodlot: there are limited plots to establish woodlots in the project region. Currently, there is one established woodlot, the VBF team are keen to expand on this initiative and establish more.

3. Future developments

1. A seagrass LMMA has been established and the VBF project team, in collaboration with ACES, KMFRI and Edinburgh Napier University, are developing it as a PV Nature Pilot Project. The first annual report for the LMMA can be found in Annex 3.
2. Expanding project area: Assistant Project Coordinator Hamadi Tsunusi, during his time and Acting Project Coordinator, followed up with the relevant authority (Governor of Kwale County) to determine when the expansion of a further 200ha of mangroves can be included in the project area of VBF.
3. Restoration: The project site at Jimbo was a former mangrove forest that was cleared for salt mining, the community have since reclaimed this land and are working to restore the mangrove forest through ecological restoration methods using hydrological channels.



Figure 18. Jimbo restoration site; new growth (left) and channels dug to increase water input and desalinate the area (right)

4. Energy Saving Jikos: Edinburgh Napier University PhD student Lilian is working on installing new stoves in Kiwegu and Jimbo, hoping this improves the efficiency of people's jikos; data collection occurred in May 2024.
5. Future developments: This project is undergoing through a necessary migration to adhere to the PV Climate Standard version 5. This will require engagement with the committee and community to explain the relevant changes to the project activities and income flows.

Table 2: Progress against corrective actions

Document	Corrective action	Activity against this
----------	-------------------	-----------------------

2023 Annual Report	CAR01 – Introduce effective measures to increase participation at community consultation meetings	• We are utilizing social media platforms such as LinkedIn, Facebook and WhatsApp to promote upcoming meetings. • Billboards (Project Signage) are being placed around three villages to increase visibility of our activities and the initiatives of Vanga Blue Forest. • We are planning regular awareness campaigns every 2-3 months in village areas to keep the community informed and engaged. • We have Incorporated games and innovative activities during meetings to engage participants actively. • We have Partnered with local environmental organizations to co-host events and enhance credibility.
--------------------	---	--

3 Part B. Project activities

1. *Project activities generating Plan Vivo Certificates*

Vanga Blue Forest has a single technical specification that covers four activity areas, involving avoided deforestation/forest recovery in areas 1 and 2 and mangrove reforestation and ecosystem rehabilitation in areas 3 and 4 respectively. The responsibilities for and benefits from these activities are shared communally within the single Project Community organization.

Table B1: Project activity summary

Name of technical specification	Area (Ha)	No. of smallholder households	No of community groups
Avoided degradation Area 1 (Sii island)	199*	NA	1
Avoided degradation Area 2 (mainland)	247.5*	NA	1
Mangrove reforestation Area 3	5	NA	1
Ecosystem rehabilitation Area 4 (Jimbo)	5	NA	1

*Initial areas of forest are 200 (area 1) and 250 (area 2) ha. In order to take a conservative approach, reduced degradation of 80% due to project interventions is assumed. These lower values of 199 and 247.5ha will be given throughout the project accreditation period as an average accounting for forest shrinkage.

2. *B2 Project activities in addition to those generating plan vivo certificates*

Publicity and awareness raising

Vanga Blue Forest continues to showcase its achievements on local, national, and international levels. The VBF team continue to engage the communities and conduct sensitization events in Jasini, a village on the Kenya-Tanzania border not involved in the VBF project, to enhance local knowledge of this project and its aims. As described in previous sections, project team members have contributed in national and international forums to speak to the importance of community leadership in projects and the benefits the project has brought to the communities. Hamadi Tsunusi contributed to the [High Quality Blue Carbon Practitioner's Guide](#), where VBF is featured as a case study. This demonstrates the international recognition of the quality of this project and its achievements. The VBF team will continue to use social media (LinkedIn, Facebook, other) to engage audiences.

4 Part C. Plan Vivo Certificate issuance submission

Table C1: Statement of tCO₂ reductions available for issuance as Plan Vivo Certificates based on activity for reporting period 01/2024– 12/2024

Area ID	Total area (ha)	Tech. Spec	tCO ₂ available from previous periods	Total tCO ₂ Achieved this period	% Buffer ¹	No. of PVCs allocated to the buffer account	No. PVCs requested for issuance from saleable carbon	tCO ₂ available for future issuances
Project area 1	199	VBF	0	1,811	25	453	1358	0
Project area 2	247.5	VBF	0	4,774	25	1,194	3580	0
Project area 3	5	VBF	0	0	25	0	0	0
Project Area 4	0.25	VBF	0	10.5	25	3	7	0
TOTAL	451.75		0	6596		1,650	4,821²	0

¹Buffer includes 20% for risk and 5% for leakage

²This final sum is the amount from areas 1, 2 and 4, after subtraction of buffer and then with an additional 2.5% forfeit due to not meeting monitoring targets in area 3 (see table A1.1).

This issuance is based on a signed PES agreement with Vanga Blue Forest Community Based Organisation, as the relevant user group of Vajiki Community Forest Association, complying with all the minimum requirements stated in this agreement.

Table C2: Allocation of issuance request for this reporting period

Buyer name/ Unsold Stock	No. PVCs transacted	Registry ID (if available)	Vintage	Tech spec
--------------------------	---------------------	----------------------------	---------	-----------

Edinburgh Napier University	2500	PV-PVC-KE-104000000026945-01012023-31122023-14827266-14829765-MER-0-P	2023	Vanga Blue Forest
ZeroMission	1500	NA – TRANSFER	2023	Vanga Blue Forest
Yacht Carbon	200	NA - TRANSFER	2023	Vanga Blue Forest
Pelorus Foundation	88	PV-PVC-KE-104000000026945-01012023-31122023-14825673-14825760-MER-0-P	2023	Vanga Blue Forest
Sarah Pettem	5	PV-PVC-KE-104000000026945-01012023-31122023-14827261-14827265-MER-0-P	2023	Vanga Blue Forest

5 Part D. Sales of Plan Vivo Certificates

Table D1: Sales of Plan Vivo Certificates for the Reporting Period (01/01/2024 – 31/12/2024)

Vintage	Buyer	No of PVCs	Price per PVC (\$)*	Total sale amount (\$)*	Price to participants per PVC (\$)*	% Sale price received by participants
2022	Abraham Baldry	11				75.6
2022	Amanda Root	13				75.6
2022	Oceans and Lakes	35				75.6
2022	Glaslyn	24				75.6
2022	Amanda Root					75.6
2022	Oceans and Lakes					75.6
2023	Edinburgh Napier University	2500				75.6
2023	ZeroMission	1500				75.6
2023	Yacht Carbon	200				75.6
2023	Pelorus Foundation	88				75.6

2023	Sarah Pettem	5			75.6
TOTAL/AVG 2024		4424			75.6
TOTAL/AVG ALL TIME		16014			78.8

Table D2: Unsold stock of Plan Vivo Certificates

Vintage	No of PVCs	Price to participants
2022	2,298*	0
2023	528**	0

** These credits have been allocated to buyers but are pending sales completion; as such they are marked “unsold” at end of 2024

6 Part E. Monitoring results

1. E1: Ecosystem services monitoring results

Monitoring results that support the request for new issuance are presented in Annex 1.

2. E2: Maintaining commitments

The Vanga Blue Forest Coordinator resigned in April 2024 and a replacement was hired in September 2024. The Assistant Project Coordinator covered the responsibilities of the Project Coordinator in the interim.

No project participants resigned from this project.

3. E3: Socioeconomic monitoring

No socioeconomic monitoring took place in 2024; however, this will be carried out in 2025 ahead of the verification.

4. E4: Environmental monitoring

See Annex 1 for monitoring results.

7 Part F. Impacts

1. Evidence of outcomes

Through community consultation, VBF implemented multiple projects (including finalising some from 2023). These have been expanded on in A1 (8th-10th August). These projects included:

1. Donation of school equipment in Vanga Village:





Figure 19. VBF Chair Harith (blue shirt, standing in lower image) presenting school equipment donated by VBF (upper and lower images)

2. The renovation of a 15 year old mosque in Kiwegu:





Figure 20. Renovation of a mosque funded by VBF (upper and lower images)

3. Renovation of a mosque in Jimbo village



Figure 20. Renovation of a mosque funded by VBF

8 Part G. Payments for Ecosystem Services

Table G1: Summary of payments made and held in trust

1. Reporting year (2020-2021)	2. Total payments received (USD)	3. Total payments made (USD)	4. Value retained by ACES* (USD)	5. Total payments held in trust (USD)
1/20 - 12/21	0	0	2694**	0

1/21 - 12/21	46,555.00	27,604.04	12,177	2823***
1/22 - 12/22	72,268.00	28,335****	21,352	25,865***
1/23 - 12/23	52,411.00	71,607.00	18,644	-12,283****
1/24 - 12/24	71,750.00	54,210.00	8,720	9,894.00
TOTAL	240,059.00	181,756.06	63,587.00	

A negative value of payments held in trust in 2023 resulted from a large volume of credits being reserved for a sale in 2024, thereby resulting in a lower cash flow for VBF in 2023. ACES sent additional cash to VBF to compensate for this, which will be recovered from the sale of remaining 2022 vintage credits in 2024.

* Includes operating costs for ACES, Plan Vivo issuance fees and funds ringfenced for verification.

** Funds were retained by ACES prior to income being received to contribute to a verification fund (an annual transfer).

***Numbers do not exactly add up due to fluctuations in exchange rates between USD and GBP and year to year carryover

**** In 2022, the % share to participants was 39.2%; less than the 60% minimum to participants. This was because community development priorities in 2022 did not require the additional \$25,865 required to meet the 60% minimum. The unspent funds are held in trust and not retained by ACES, but they are not included in the % share to participants here for accounting reasons. This has been communicated with the community and decisions on community spending in 2023 will aim to include this expenditure. The % price to participants in 2023 is correspondingly higher so that the two years average at least 60% to participants; this has been achieved in 2023 but given the ~50% sales rate of 2022 vintage credits, this % to participants will be averaged across 2023 and 2024 to ensure that the 60% to participants is truly met.

Before transfer to the VBF Community Organization, funds are held by the charity The Association for Coastal Ecosystem Services (ACES).

9 PART H Ongoing Participation

1. Recruitment

The Vanga Blue Forest Coordinator resigned in April 2024 and a replacement was hired in September 2024. The Assistant Project Coordinator covered the responsibilities of the Project Coordinator in the interim.

2. Community participation

A committee of 13 volunteer community members from Vanga, Jimbo and Kiwegu villages governs Vanga Blue Forest project Through a participatory approach, the committee is elected democratically biannually during village meetings with close involvement and supervision of the Department of Social Development, among other stakeholders. The committee team comprises four members from Vanga,

five from Jimbo and four from Kiwegu villages. With regards to gender, five are women and eight are men. The committee ensures that the annual work plan is implemented in a timely manner, engages in project activities like monitoring, engages community members in prioritization of local development projects through funds obtained from the sale of carbon credits, ensures allocated community funds are used for intended purpose and also addresses arising grievances. In cases where no resolution is arrived at, village heads intervene. Vanga Blue Forest held a number of meetings during this reporting period to plan for the annual activities including monitoring, planting and community project planning. A summary of these activities can be found in Annex 3.

10 Part I. Project operating costs

1. Allocation of costs

Expense	Narrative	Amount (Ksh): USD in brackets	Contribution from sale of PVCs (Ksh)	Contribution from other sources
Community development projects	-	3,412,000 (USD 21,939)	3,412,000 (USD 21,939)	-
Labour	-	2,088,000 (USD 13,425)	2,088,000 (USD 13,425)	-
Project workers salary (all staff)	-	1,152,000 (USD 7,407)	1,152,000 (USD 7,407)	-
Expense for committee and office	-	800000 (USD 1543)	800000 (USD 1,543)	-

11 Annexes

Annex 1. Monitoring results for issuance request

Vanga Blue Forest operates on four main project areas. Areas 1 (Sii Island) and 2 (Vanga forest mainland) deliver PVCs through avoided deforestation and forest conservation activities. Areas 3 (mangrove plantation) and 4 (rehabilitation area) involve mangrove reforestation and ecosystem rehabilitation within the project site. Our methodology involves ex-post claims for carbon accumulated, provided we meet key threshold measures of stump counts and absence of clear fell, as summarized in table A1.2

Table A1.1 Key indicators reporting

Activity area	Forest attribute	Quantity / ha	Measure last year	Baseline	Remarks	Monitoring target met? (Y/N)
1	AGB (t dw)	311	311	261	AGB showed a slight decrease, which may reflect an anomalously high measure last year; the longer term trend remains upwards. No significant change in stump no. No evidence of significant new cutting or removal	Y
	Stump Count	225	200	200		Y
2	AGB (t dw)	88	88	75	AGB increased slightly and stumps declined. No evidence of significant new cutting or removal	Y
	Stump count	954	918	1364		Y
3	Stump count	954	918	1364	We observed a reduction in the number of stump counts, indicating a decrease in tree cutting activities.	N
4	Trajectory towards recovery	qualitative	NA	2 trees month ⁻¹ 23% areal cover	Hydrological restoration continuing and showing success. Permanent monitoring plots established with 367 trees, including 285 planted as nurse trees. Only 1 stump found	Y

Table A1.2. VBF Annual Report Carbon Benefits Summary Table

Variable	Indicators and measures	Outcome
Threshold measures	Stump counts	No significant increase
	Evidence of clear felling	No evidence of clear felling
Avoided degradation area 1	Default measure of 8.65 t CO ₂ ha ⁻¹ yr ⁻¹	199*8.65 = 1721
Avoided degradation area 2	Default measure of 17.3 t CO ₂ ha ⁻¹ yr ⁻¹	247.5*17.3 = 4282
Avoided deforestation ABG areas 1 and 2	5-year satellite information; annual on-ground surveys and threshold measures. 309 t CO ₂ yr ⁻¹ if met.	309 t CO ₂

Avoided deforestation soil carbon areas 1 and 2	5-year satellite information; annual on-ground surveys and threshold measures. 273 t CO ₂ yr ⁻¹ if met.	273t CO ₂
Reforestation area 3	Stump counts and growth increments. Will accumulate 102 t CO ₂ yr ⁻¹	Not measured
Ecosystem rehabilitation area 4	Meeting longer term targets of natural recovery 10.5 t CO ₂ yr ⁻¹	Planting and recruitment this year so 10.5t
TOTAL (t CO₂)		6,596
TOTAL AFTER FORFEIT (but before risk buffer subtraction)	Area 3 not measured hence 2.5% forfeit	6,431

Annex 2. Historical sales of PVCs

Table A2.1 Historical sales of PVCs (previous entries to Table 6)

Vintage	Buyer	No of PVCs	Price per PVC (\$)*	Total sale amount (\$)*	Price to participants per PVC (\$)*	% Sale price received by participants
2020	Zero Mission	1500				59.3
2020	Superflex	50				59.3
2020	The Safari Collection Footprint	222				59.3
2020	Himaya	12				59.3
2020	James Hagan	3				59.3
2020	Cambridge Conservation Forum	14				59.3
2020	Zero Mission	2050				59.3
2020	Citizen Zoo	4				59.3
2020	Arcadia Fund	651				39.2*
2021	Zero Mission	1500				39.2*
2021	Beahvioural Insights (BI) Team	325				
2021	Miriam Canella	2				39.2*
2021	Citizen Zoo	5				39.2*
2021	Ocean Bottle	700				39.2*

2021	Master of Science in Marine and Lacustrine Science and Management (Oceans & Lakes), Vrije Universiteit Brussel	50				39.2*
2021	The CORRIENTE XXI project, Vrije Universiteit Brussel	15				39.2*
2021	Alison Baker	10				39.2*
2021	Charles and Kate Hussey	60				39.2*
2021	Yacht Carbon	250				39.2*
2021	Yacht Carbon	107				39.2*
2021	Levin Sources	4				39.2*
2021	Levin Sources	37				39.2*
2021	The Safari Collection	800				39.2*
2021	Superflex	42				39.2*
2021	Carbon Chameleon	300				39.2*
2021	Nico Koedam	20				39.2*
2021	GRID-Arendal	186				141.0
2021	Pelorus Foundation	113				141.0
2021	Pelorus Foundation	116				141.0
2022	Zero Mission	1500				141.0
2022	Planet Moja	300				141.0
2022	Yacht Carbon	500				141.0
2022	TROPIMUNDO	21				141.0
2022	Himaya	9				141.0
2022	Jane Rogers	7				141.0
2022	Levin Sources	36				141.0
2022	Levin Sources	11				141.0
2022	Donald Snodgrass	8				141.0
2023	Edinburgh Napier University	2500				78.7
TOTAL PVCs		11,540				

Annex 3 : VBF CBO 2024 MEETINGS

	DATE	MEMBERS	NO. OF MEMBERS	AGENDA
1.	28/02/2024	VBF members	14	• Preliminaries • Planning and budgeting of VBF activities • Any Other Business i. Job adverts for the post of seagrass project coordinator and the VBF project coordinator. ii. Mark visit to VBF project iii. Community project updates
2.	19/03/2024	VBF members, ACES-Prof. Mark, scouts, VBF forest scholars	20	• Preliminaries • Bundling sea grass project to VBF project • Replacement of the VBF project coordinator • Any Other Business
3.	30/04/2024	VBF members	8	● Preliminaries ● VBF mangrove forest monitoring ● Community project updates ● Community baraza ● Project coordinator Interview dates ● Shulman award project ● Relationship between VBF and GIZ ● Any other business
4.	22/05/2024	VBF members and GIZ officials	18	● Preliminaries

				● GIZ objectives ● Any Other Business
5.	21/06/2024	VBF members	12	● Preliminaries ● Bundling sea grass project to vbf project ● Replacement of the vbf project coordinator ● Any other business
6.	02/08/2024	VBF members	13	● Preliminaries ● Interview report ● Appreciation for the Assistant project coordinator ● Any Other Business
7.	02/09/2024	VBF members	15	● Preliminaries ● Confirmation of previous minutes ● Accounts Overview ● Change of Signatories ● Welcome to New Project Coordinator ● Appreciation for Former Acting Project Coordinator ● Community Projects ● Proposal Review ● Any other business
8.	14/09/2024	VBF members	15	● Preliminaries ● Confirmation of previous minutes ● Community projects quotations. ● forest survey activity scheduled for September 23-24. ● the awareness activity scheduled for September 25-27. ● Any other business

9.	25/09/2024	VBF Executive committee	4	● Preliminaries ● Confirmation of previous meeting ● Signing of community project contracts ● Signing of Community projects funds ● Any other business
10.	30/09/2024	VBF members	14	● Preliminaries ● Confirmation of previous minutes ● Grievance training dates ● Woodlot preparation ● Community projects progress ● Any other business
11.	24/10/2024	VBF members	12	● Preliminaries ● Confirmation of previous meeting ● Monitoring activity dates ● Any other business
12.	09/11/2024	VBF members & ACES Team	16	● Preliminaries ● VBF Project Progress with ACES Team ● Any other business
13.	10/11/2024	VBF executive team and contractors	10	● Preliminaries ● Signing of community project contracts ● Signing of community project funds ● Any other business
14.	03/12/2024	VBF members	14	● Preliminaries ● Confirmation of previous minutes ● VSP Project Rent Issue ● ORARO and Company Proposal ● UNEP Proposal (Budget) ● Community Projects Updates ● Assistant PC (Annual Leave) ● Marking of the Desks ● Exchange Visit



				Any other business
15.	09/12/2024	VBF & VSP Team	24	- Preliminaries - Confirmation of previous minutes - Bundling of the VBF & VSP project - SGP Grant Proposal - Any other business
16.	11/12/2024	VBF executive committee	6	- Preliminaries - Confirmation of previous minutes - Signing of community projects contracts - Signing of Vanga community project funds and exchange visit - Any other business
17.	12/12/2024	VBF members	12	- Preliminaries - Labeling of vanga primary desks - Any other business
18.	16/12/2024	VBF members	8	- Preliminaries - Confirmation of previous minutes - Community projects quotations - Exchange visit - Any other business
19.	17/12/2024	VBF & VSP Team	10	- Preliminaries - Confirmation of Previous minutes - Revising the VBF Constitution - Any other business
20.	21/12/2024	VBF executive committee	4	- Preliminaries - Confirmation of previous minutes - Signing of community projects contracts - Signing of community Projects funds - Any other business



Annex 4. Seagrass LMMA

Here we provide the first annual report for the seagrass LMMA, under development as a PV Nature Pilot Project.



Vanga Seagrass Project

Seagrass biodiversity project under PV Nature - First Annual Report



Photo 1. (c) Anthony Ochieng Onyango - Pneumatophores in *Thalassia hemprichii* in Vanga Bay



Overview

Since the development and launch of the community-led mangrove conservation project in Vanga Bay Kenya - Vanga Blue Forest (VBF) - in 2018, the participating communities have been interested in extending their conservation efforts to the local seagrass meadows. There are considerable barriers to the inclusion of seagrass in carbon projects which have to date, prevented the certification of any seagrass carbon project worldwide; these are summarised in Shilland et al (2021). Despite barriers, the Association for Coastal Ecosystem Services (ACES) explored alternatives, including a 'carbon-plus' model where ACES invited VBF carbon credit buyers to donate towards seagrass conservation in the area to finance monitoring of seagrass area and abundance and contribute to community development funding from VBF.

These efforts have since evolved; initial project work in 2023 was conducted under a United Nations Environment Programme (UNEP) grant which led to agreement on the establishment of a voluntary Locally Managed Marine Area (LMMA) at Vanga. The LMMA would be operated and enforced by the local community with income derived from selling 'carbon-plus' benefits from seagrass conservation, yet the question of longevity and sustainability of this financial model remained. The release of the novel Plan Vivo Standard, PV Nature, in December 2023 offered an opportunity to formally protect designated areas in the seagrass meadows of Vanga Bay and mobilise sustainable finance for the participating communities through the sale of Plan Vivo Biodiversity Certificates (PVBCs) on the voluntary market.

Poverty is the primary driver of both mangrove and seagrass degradation in the area, therefore interventions that restrict income-generating or sustenance activities, such as fishing with destructive methods, must be accompanied by community development benefits and activities to compensate for loss of resources or income for the interventions to be socially just and sustainable. The Vanga Seagrass Project (VSP), therefore, aims to protect the seagrass and the associated biodiversity in Vanga Bay and by achieving PV Nature certification as one of the nine PV Nature pilot projects and mobilising sustainable financing for the operation of the project. Therefore, to allow protection and recovery of the biodiversity and seagrass, this project will implement seasonal access to the project areas and enforce gear restrictions, removing damaging fishing practices and regulating fishing in the project areas.

The principles of community ownership, governance and management already present in VBF are central to this project and its resulting certified project design, putting local people at the heart of management interventions and ensuring that their needs and aspirations are addressed in the project design. This first annual report offers a summary of the progress made in project development.



Progress achieved in 2024

Biodiversity

This project aims to mobilise a sufficient and sustainable financial flow to enable community led conservation of seagrass in Vanga Bay Kenya. In doing so, it is expected that the associated biodiversity (including commercially and culturally important fish species) will be positively impacted, resulting in greater abundance and biomass of these fish stocks upon which the residents of Vanga and other surrounding communities rely on for sustenance and income.

Current financial models for conservation focus on carbon stocks, yet, as any anticipated income from seagrass carbon sales – omitting barriers from scientific uncertainties and monitoring limitations - would not be sufficient to monitor fish and other fauna; as seagrasses offer an indication of ecosystem health, this project focuses on biodiversity of both the seagrass and its associated fauna in the seagrass meadows Mwarembo-Spaki and Jibweni-Bazo in Vanga Bay.

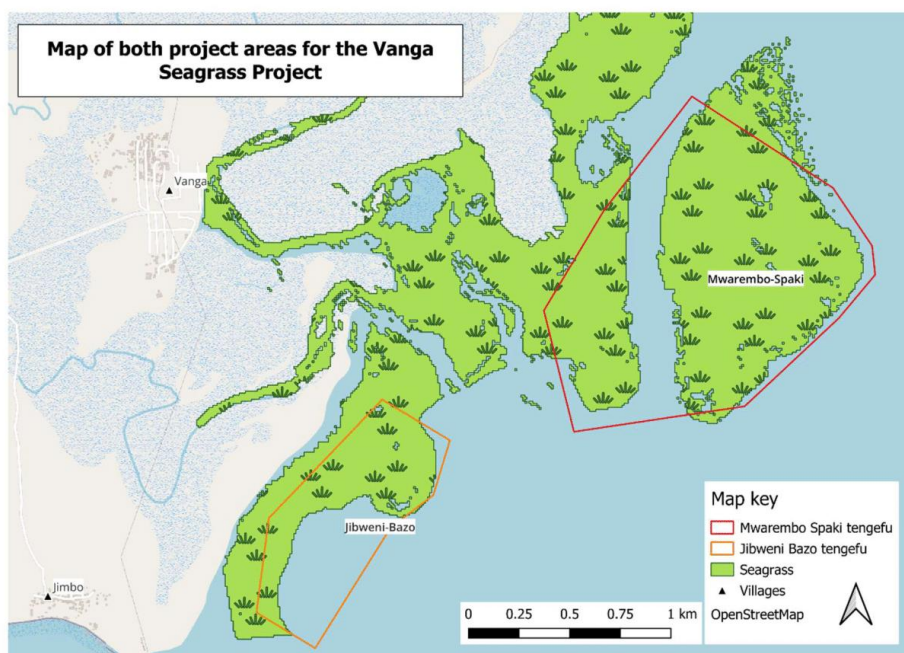


Figure 1. Map of the two project areas and the participating villages in the Vanga Seagrass Project

The baseline of seagrass in Vanga Bay and the impact of seine fishing methods has been established in scientific publications and on-site experiments (notably those led by a Kenya-based ENU PhD student). Seine netting and other destructive fishing methods are anthropogenic drivers of seagrass degradation; additionally, this unbalanced ecosystem is under increased threat from sea urchin herbivory leading to seagrass meadow degradation in Vanga Bay (Uku et al., 2021; Awadh et al., 2024). These two negative forces are linked, in the study by Awadh et al. (2024) it was noted that higher abundance of sea urchins was found in areas with “high human



activity”, such is the case in Vanga Bay. Drivers of seagrass degradation are expected to increase due to subsequent required need to increase in effort to catch fish as the seagrass habitat and fish populations decline, a recent analysis suggested that catches have severely declined in recent years (Wanjiru et al., 2021).



Figure 2. © Anthony Ochieng Onyango - Sea urchins on infringing corals (left) and fish caught from Vanga Bay (right).

Literature and Local Ecological Knowledge have been, and will continue to be, used to inform the project and PV Nature documentation to demonstrate what is in the project areas and wider project region and to make the area eligible for conservation under PV Nature. The project has an approved Project Idea Note (PIN) and the Project Design Document (PDD) is in development; project justification is pending, awaiting establishment of Plan Vivo Technical Review Panel which is expected in 2025. The PDD review process will be formalised in 2025 along with clarification of the monitoring and data requirements for a marine project. The ACES project team and in-country VSP Project Officer are part of the PV Nature Working Group with the other pilot projects working with Plan Vivo and PIVOTAL to feedback on the PV Nature Standard and the methodology requirements. Therefore, biodiversity baseline for the project will be finalised once the monitoring protocol has been established in collaboration with Plan Vivo and other relevant stakeholders.

Research

There is very little published information on seagrass in Africa, although much anecdotal information suggesting serious declines. Kenya is an exception, with researchers linked to ACES having published some of the best quantitative information from any African country. This research shows losses of 1.6% yr⁻¹ and demonstrates that seine netting is a major threat (Harcourt et al., 2018; Mwikamba et al., 2024). Moreover, Vanga Bay supports various species of culturally and commercially important fish and other marine animals (including IUCN Red List endangered species). One objective of this project is to advance the research in seagrass biodiversity and seagrass carbon, to present relevant progress and findings at international conferences and publish peer reviewed scientific outputs on biodiversity monitoring using different techniques, the utility of biodiversity compared with other credits, and scope of proxies for indicating seagrass carbon. This objective will be achieved through the partnership with Edinburgh Napier University who have recruited two Kenyan PhD students to conduct relevant research activities and support the scientific integrity of this project.



These PhD students will be co-supervised by Professor Mark Huxham, Head of Life Sciences at Edinburgh Napier University (also ACES Chairperson). Professor Huxham has 20+ years' experience of research and project development in Kenyan mangroves and seagrass, including in biodiversity surveys and carbon accounting. The PhD students will also be supervised by leading scientists in KMFRI, a leading government research institute in Kenya and technical partner for both Mikoko Pamoja and Vanga Blue Forest.



Figure 3. Mangrove in seagrass in Vanga Bay

LMMA scope and management

This review of project progress comes after a year of PV Nature project development work and more than two years' work with local stakeholders, including the local community, the Community Forest Association that operates VBF, the Beach Management Units (BMUs) that conducts local management of fisheries and Kenya Wildlife Service. VSP includes multiple participating villages: Vanga, Jimbo, Jasini and Kiwegu. These villages are represented within the Vanga Seagrass Project Committee (VSPC) which is the vehicle through which the project will be governed. 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 VBF.

The VSPC has been developed as a subcommittee within the already established and formally registered VBF Community Based Organisation (CBO); this was decided by the project participants 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 VBF CBO's already established structures and processes (such as grievance mechanism, as illustrated in



the VBF PDD (2021) yet the VSPC will be autonomous in their own benefit-sharing agreement and will make their own decisions surrounding the project and the community development fund.

The structure of the VSPC ensures equal representation of each of the four villages, as well as that of often marginalized groups. It was agreed that this democratically elected committee will represent the community in project direction, decision-making and overseeing the benefits-sharing mechanism. The committee will be in charge of disseminating project information within the communities locally, with support from the VSP Project Officer. This will include developing resources, posters and leaflets for local distribution, consulting with the community through barazas and community consultations and developing activities to encourage local engagement in the project.

Current management of the project areas has been driven by Vanga and Jimbo BMUs, as, in Kenya, co-management of fisheries with BMUs began in 2007 with the hope that they would help the Department of Fisheries better manage fisheries stock. 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 and was seen firsthand by project staff and VSPC members during a site visit in November 2024.

VSP will be working in collaboration with the Vanga and Jimbo BMUs to patrol and enforce the temporary closure and gear restriction in the project areas. The patrol and enforcement routine has been decided through consultative meetings with the BMU's. Patrols will be conducted regularly – with more detail to be shared in a report – and are expected to formally start in H1 2025.



Figure 4. © Anthony Ochieng Onyango - A boat going through the mangroves towards the project areas in Vanga Bay.



Progress expected in 2025

This project is currently in development with more progress expected to be made in 2025 and current timeline expectations as: baseline data collected in 2025 and sale of Plan Vivo Biodiversity Credits from 2028. This will be an ongoing long-term project with multiple collaborations with government and academic institutes enabling important research. For instance, using aquatic sound as a novel, integrated and potentially cheap approach to biodiversity in seagrass habitats has not yet been tested and is expected to be part of groundbreaking research within the PhDs. Additionally, linking seagrass proxy measures, including extent, species identity, density and health, to carbon accumulation by formally measuring seagrass sediment carbon and demonstrating how this correlates at the site with these proxy measures could potentially overcome or offer new insight into some of the current carbon calculation barriers seagrass faces and encourage further attention and efforts in seagrass protection and restoration worldwide.

This project was presented by a project representative with Plan Vivo at the Association for Tropical Biology and Conservation in Rwanda in July 2024 (<https://www.atbc2024.org/>) and was the only seagrass project presented at the conference. It is also registered as a pilot project under the International Advisory Panel on Biodiversity Credits (<https://www.iapbiocredits.org/>) and was mentioned during their and Plan Vivo's presentation at COP in November 2024. It is expected that the attention and recognition of this project will continue to increase, the project team are looking at relevant conferences and other events to attend including the United Nations Ocean Conference in July 2025.

Protecting the seagrasses is expected to result in natural recovery of the meadows which will also enhance climate benefits as seagrasses are an efficient carbon sink. Seagrass sequesters 5.06 t CO₂ ha per year. Hence 225ha will sequester 1,138 t per year. In addition, work by the current team at a nearby site showed seagrass losses caused 8.36 t CO₂ ha per year. Additional research, using remote sensing, showed an average rate of seagrass loss in Kenya of 1.59% per year; translated to this site, that implies an additional 29.9 t CO₂ saved per year in avoided emissions, giving a total of 1,168 tonnes per year. Moreover, this project and the neighbouring mangrove conservation project, Vanga Blue Forest, will work in synergy to enhance regional blue carbon benefits. As a result, the local communities can benefit from these interventions and projects. The current total project area is 225ha of intertidal and subtidal seagrasses located in Mwarembo-Spaki (168ha) and Jibweni-Bazo (56.5ha) within the Co-Management Areas (CMA) in Vanga Bay and are also part of the Transboundary Conservation Area between Southern Kenya and Northern Tanzania. These sites were designated and designed by the fishing community and, if successful, there is the possibility of expanding this to a total of 337ha bringing additional carbon benefits of 584 t CO₂ per year within surrounding CMAs co-managed by Vanga and Jimbo Beach Management Units (BMUs).

The local communities involved in this project understand that fish are present in seagrass areas, but not necessarily aware of the other ecosystem co-benefits that protecting this marine ecosystem also provides. Examples of co-benefits include protection from coastal erosion and storms, especially when the seagrass works in synergy with the mangroves protected through



Vanga Blue Forest (VBF), increased resilience and adaptation to a changing climate and ocean conditions and reestablishing lost carbon sinks due to seagrasses ability to sequester carbon. 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 more diverse income stream for the community organisation that operates the project would mitigate the risk that comes with a reliance on carbon financing, thereby enhancing the resilience of the community themselves by enhancing the long-term sustainability of the project.

Summary

VSP's aim to formally protect seagrass and mobilise sustainable funding stream to deliver real community benefits through the sale of biodiversity credits is a new but under-developed solution to financing nature conservation, particularly in contexts where carbon financing is otherwise inaccessible. This project would not only enhance local coastal resilience by enhancing biodiversity through a framework that delivers community benefits and builds local institutions but would also act as a demonstration site for other blue carbon projects to expand their scope, enhance financial resilience and include seagrass in crediting frameworks.

Exemplifying the use of new biodiversity credits, we aim to be the first community-led seagrass PV Nature project. There are many useful research opportunities related to this, including comparing income achieved and potential between different types of credits, testing the demands in the market and outlining the costs and trade-offs involved in using different approaches and target species in monitoring. There are many unknowns that this project will need to face (including understanding the market for biodiversity credits) and barriers to overcome (including the development of a community accessible monitoring protocol) yet the socio-ecological benefits of healthy seagrass meadows are known. In the project region, Vanga Blue Forest is protecting mangroves, so both these projects will work in synergy to further enhance local coastal and storm defence and have the potential to deliver real and valuable ecosystem services and finance for community development initiatives.



Figure 5. Aerial image of Vanga and the adjacent mangroves.

We are grateful to have co-funding from Dona Bertarelli Philanthropy and Ocean Risk and Resilience Action Alliance (ORRAA) and to be working with our partners Edinburgh Napier University (ENU), Kenya Marine and Fisheries Research institute (KMFRI), and the Vanga Blue Forest (VBF) team to be developing this emerging solution of biodiversity credits and certifying seagrass under a framework to finance community-led nature conservation.