

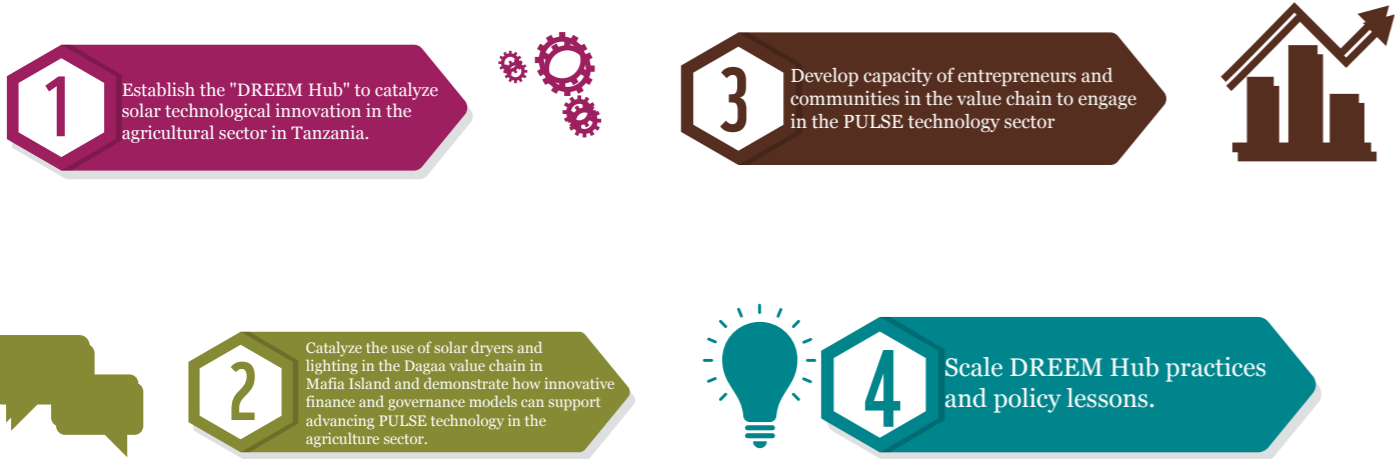


**DREEM HUB PROJECT OFFICIALLY LAUNCHED
IN MAFIA ISLAND**

DREEM Hub Overview:

The DREEM Hub model is a concept advanced by the Mott Foundation, that fosters climate action by promoting productive use leveraging solar energy (PULSE) in the agricultural sector. The DREEM Hub model is now in its third phase, building on phase 1, which focused on learning and solving global barriers through strategic partnerships (2015 to 2018), and phase 2, which focused on addressing national and community level barriers to distributed renewable energy (DRE). With support from the Mott Foundation, WWF Tanzania will host the third phase of the DREEM Hub in Tanzania, with an initial focus on accelerating climate solutions in the marine fisheries sector with the goal of enabling the long-term use of PULSE technologies across all agricultural sector's value chains in Tanzania.

The Tanzanian DREEM Hub with financial support from the Mott Foundation is set to launch in November 2024 and will work through December 2026 to advance four interlinked workstreams:



By the end of 2026, the Mafia Island demonstration site will have shown how solar energy technologies can reduce post-harvest loss in the dagaa value chain and reduce greenhouse gas emissions by increasing the access and adoption of innovative PULSE technologies. Nationally, the project will have facilitated the reation of a critical coordinational unit called the "DREEM Hub" which will provide platform for diverse actors to come together to promote adoption and the use of solar technology in the agricultural sector.



Overview of the Fisheries Sector in Tanzania:

The DREEM Hub will initially focus on catalysing the uptake of PULSE technologies in the Mafia dagaa value chain. In this section, we introduce the value chain and its critical role in the Tanzanian fisheries sector and economy.

The fishing industry in Tanzania plays an important role in economic diversification, securing livelihoods, and enabling pro-poor economic growth. Tanzania's long coastline boasts diverse coastal habitats rich in marine resources. The fishery sector supports 200,000 direct jobs (Peart et al. 2021) and indirectly benefits 4.5 billion people (35% of rural employment).

It contributes 1.75% to the GDP (URT-MoLF, 2021), with current fish production at around 376,000 metric tons annually, 97% of which comes from small-scale fisheries.

Tanzanian fisheries currently experience significant post-harvest losses, estimated at 40% due to poor handling and insufficient infrastructure. Quick spoilage is caused by poor handling, delayed evisceration and icing (Ikape 2017), and factors like fishing method, fish species, sanitation, and processing (Tesfay and Teferi, 2017; Gyan et al., 2020). Microbial contamination further lowers fish quality, affecting market prices. Fresh fish sales and consumption are concentrated around fishing areas due to inadequate preservation and storage facilities, limiting access to broader markets and reducing processing capacity (National Fisheries Plan of 2015).

MAFIA AT A GLANCE

Mafia District, established in 1959, is one of the nine districts in the Coast Region. Located in the Indian Ocean, about 195 km away from Dar es Salaam, the district comprises seven small islands: Jibondo, Chole, Juani, Bwejuu, Mbarakuni, Shungimbili, and Nyororo, of which the last three are temporary fishermen habitats. Mafia District is divided into North and South divisions, containing 8 wards (Kanga, Kirongwe, Baleni, Kilindoni, Kiegeani, Miburani, Ndagoni and Jibondo) and 23 registered villages. As of 2022, the population of Mafia was 66,180 with an average household size of 3.6. The island experiences a bimodal rainfall pattern, with short rains from October to December and long rains from March to June, averaging 2000 mm annually. Temperatures range from 28°C - 32°C and humidity varies between 60-80%. The economy of the Mafia is based on fishing and subsistence agriculture. The island attracts some tourists, mainly scuba divers, birdwatchers, game fishermen, and people seeking relaxation.

MAFIA DAGAA VALUE CHAIN

The dagaa in Mafia has attracted massive fishing effort with the exponential growth of fishermen on the island - from 680 in 2018 to over 2000 in 2024. A majority of fishers are migrants, and within that same timeframe, the number of drying racks for processing dagaa has increased from 2 to 750. This has led to intense use of the beach area for sardine drying activities, massive deforestation to support processing, and growing pressure on beach land use and management. Dagaa constitutes 45% of the total fish landing in Mafia, with an average post-harvest loss of 45% (physical loss is 13%, and quality loss is about 32%). During the rainy season, the physical losses are as high as 33%. It is estimated that 1 ton of landed sardines contributes to 284.38 kgs of CO2 equivalent.

PROJECT GOALS BETWEEN 2024 - 2026



Create a demonstration model in Mafia Island that will show how the adoption of PULSE technologies and new practices in the dagaa value chain can reduce GHG emissions and post-harvest losses, while improving the livelihood benefits for value chain actors.



Collaborate with a range of partners (particularly in fishing communities and the technology sector) to create a national-level Hub that catalyzes the uptake of PULSE technologies in the agricultural sector in Tanzania.



Scale lessons from the dagaa value chain pilot with public and private sector stakeholders to create long-term enabling conditions (particularly financing and market incentives) that are needed to support the widespread deployment of PULSE services in other agricultural value chains in Tanzania.

The dagaa fisheries practise in Mafia Island is a microcosm of the Tanzanian marine fisheries sector: Fishers on the island are using similar types of boats, fishing gear, and methods. They land about 5,600 – 6,300 tons of fresh dagaa annually, which accounts for about 40% of total marine dagaa landings in the country (Mafia District Council Fisheries Statistics). The profile of the fishery in Mafia Island can be summarised as outlined in Table 1–1

Table 1 – 1. Profile of the fishery sector in Mafia Island

Sn.	Item	Result
1.	Number of dagaa fishers	2,051
2.	Total annual catch of dagaa in Mafia Island (in metric tons)	6,000
3.	Number of mother boats (planked canoe 7-20 metres) for fishing	95
4.	Number of Ngwanda (planked canoe 6-7m LoA) for lighting	82
5.	Number of Dinghies (small canoes of about 2.5m) for lighting	190
6.	Number of effective fishing days per annum	160
7.	Average catch in terms of metric tons/ boat/ day	0.5
8.	Average number of mother boats going out fishing / day	70
9.	Average total catches metric tons/day	35
10.	Number of existing raised drying racks (Kilindoni and Tumbuju)	700
11.	Average capacity of one raised rack (6 buckets*18kg/bucket)	100
12.	Average number of actively used racks per day	350
13.	Measured area in square metres occupied by one rack (16m* 2.5m)	40
14.	Number of boat owners	177
15.	Number of porters carrying fresh dagaa from boat to processing site	170
16.	Number of boiling pan owners	190
17.	Number of people engaged in boiling dagaa	380
18.	Number of people engaged in drying dagaa	380
19.	Number of people engaged in sieving dried dagaa	50
20.	Number of people engaged in packing dried dagaa in sacks	45
21.	Number of people loading sacks of dried dagaa onboard trucks/canoes	30
22.	Number of traders	249
23.	Number of agents engaged in facilitating export of dried dagaa	20

Source: Mafia District Council Statistics, 2024 and Field data as extracted from the baseline Survey Report



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NODES ASSESSMENT

As part of the DREEM Hub baseline assessment, the entire value chain was assessed to identify what major ‘nodes’ exist, with the specific goal of identifying which nodes in the value chain would be most suitable for intervention - to improve the quality of dagaa outputs to strengthen local livelihoods, as well as reducing the negative environmental impact of the value chain (namely, post-harvest loss and GHG emissions).

Table 1 – 2. Functions and Typology of Actors in the Marine Dagaa Value Chain

Functions and typology of actors in marine dagaa value chain

Fishing	Landing	Processing	Storage	Distribution	Marketing
Inputs Fishing boat, fishing gear, lighting system, working capital manpower l	Inputs Buckets manpower	Inputs Salt, boiling pan (<i>king’amuzi</i>), perforated plastic buckets, firewood, drying racks / space on ground, manpower	Inputs Banda doubling as living room / warehouse, manpower	Inputs Trucks, motorbike, transport canoes, manpower	Inputs Mobile phone, agreement between wholesaler trader and retailer, manpower
Strands Fishing operation, lighting, holding of catch onboard	Strands Unloading of dagaa from boat & Carrying dagaa from canoe to processing site	Strands Boiling of dagaa & drying of dagaa after boiling & supply of firewood	Strands Storage of dried dagaa, security guiding	Strands Sieving, packaging into bags, loading trucks or canoes, transportation to market	Strands Retailing, hawking, wholesale, quality inspection
Actors Boat owner, input supplier, skipper, crew, boatman	Actors Porters, agents, first line traders, tax collectors, customers, consumers.	Actors Those boiling dagaa; those drying dagaa after boiling, firewood cutters, agents	Actors Warehouse owners, local masons, health workers, guards, dagaa owners	Actors Transporters, porters, drivers, skippers, traders, fuel	Actors Traders, retailers, consumers, market officers, LGA, Tax collectors
Support services Credit facilities, License,	Support services Administrative service from LGA	Support services Administrative service from LGA, arbitration	Support services Warehouse for renting	Support services Transport services both road and waterway	Support services Market structure



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WHY MAFIA ISLAND?





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Dream Hub Project has now officially launched in Mafia Islands:

Where the project will mainly focus on enabling the long-term use of Productive use of solar energy (PUSE) technologies across the Mafia Daga Value Chain to reduce post-harvest loss and environmental challenges and improve productivity, The launching was officiated by District Commissioner Hon: Aziza Masongosongo

The launching was officiated by District Commissioner Hon: Aziza Masongosongo – "As Mafia government, we will offer genuine cooperation to you. The sardine fishing in Mafia has attracted many fisheries from 50 – 2000, which makes 40% of the sardine caught in the coast of the Indian Ocean"

As WWF Country Directors, Dr Amani Ngusaru said " WWF has come up with this three-year project and we believe this project will be replicated in other parts of the country, In addition, we have great hope that this project will increase the value of seafood products, as well improve the lives of Mafia communities and Fishermen"

The Council of the Ndongi Ward also said "We express our gratitude for the opening of this project. Today we are going to implement a project of great value to the community and bring great progress and this project will bring great changes to solve our challenges by 70%."

The project promotes innovation in solar technologies, marketing, entrepreneurship, and post-harvest handling to uplift local livelihoods. Let's light the way forward!

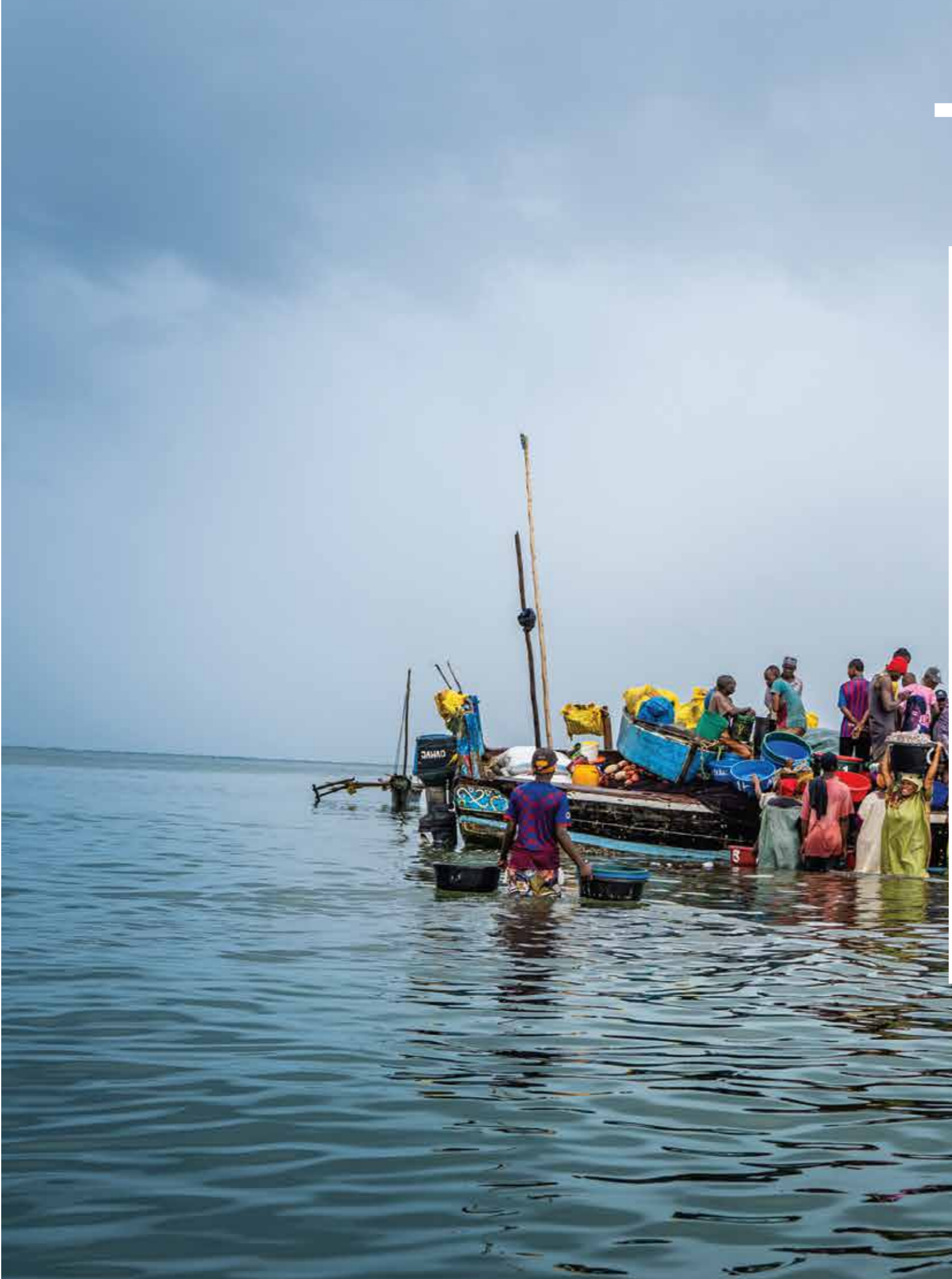
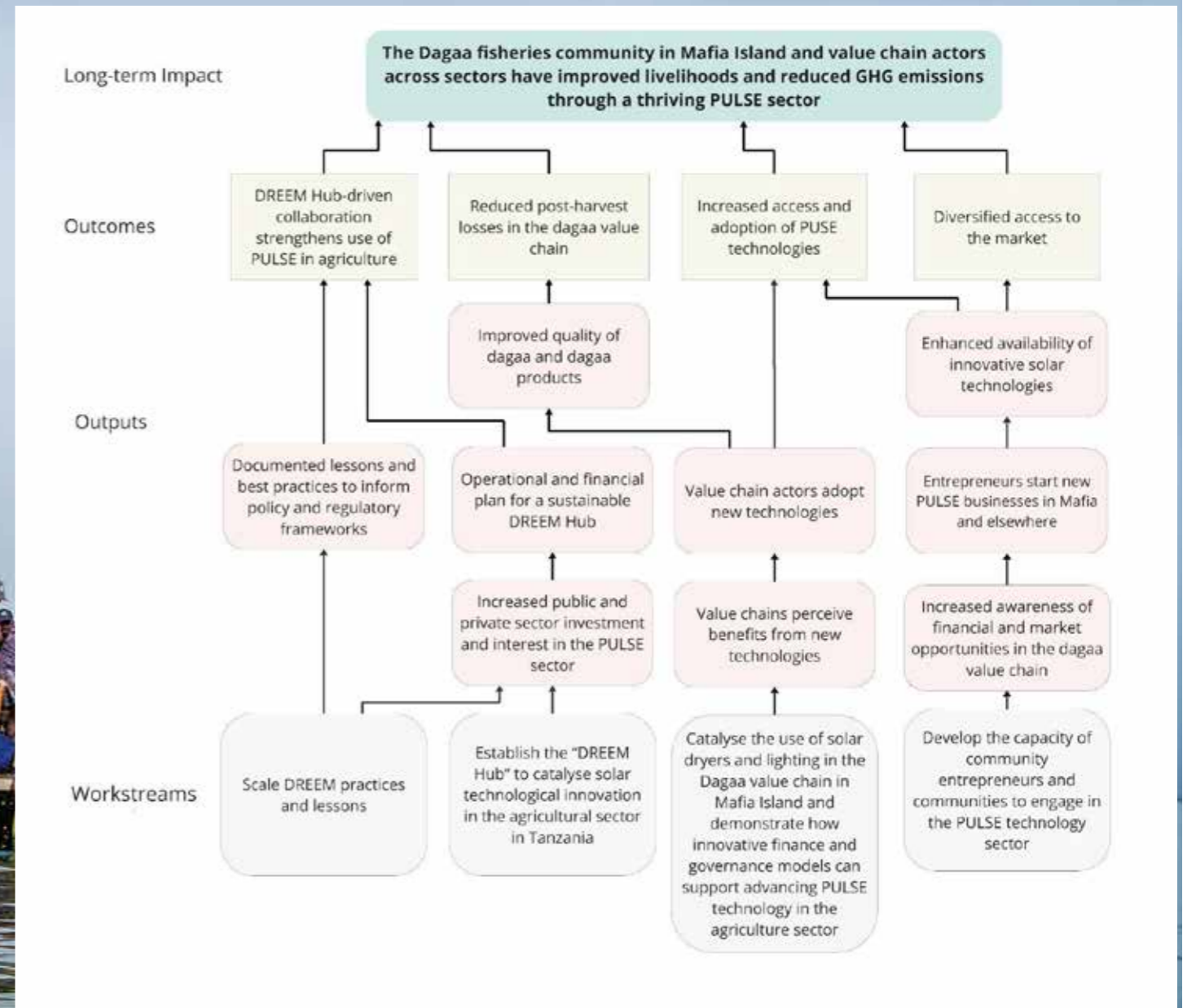
Project Partners

World Fish
IMED Foundation
Fisheries Education and Training Agency (FETA)
National Carbon Monitoring Centre (NCMC)
Tanzania Fisheries Research Institute (TAFIRI)
Mafia Local Government Authority (LGA),
Ward and Village Governments
Local Fisheries community and value chain actors.

Project Beneficiaries

Daga Fishing communities

Theory of Change:



THE EXPECTED STATE OF DAGAA PROCESING IN MAFIA ISLAND



Working to sustain the natural world for the benefit of people and wildlife.

together possible

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