COMMUNITY FARMING & COMMUNITY GARDENING AND AGRITOURISM TECHNOLOGIES

TECHNICAL DESCRIPTION

The agriculture and food security sector are prominent in the livelihoods of the rural population of Maldives and plays an important role in food and nutrition security, especially for those who are residing in the rural areas (NDC, 2015a and SNC 2016). Growth in the agriculture sector is critical for the country's economy in the face of global climate change and its likely impact on the economy. Due to the small size of the islands, land scarcity, poor soil conditions and limited water resources in island aquifer, agriculture and food production is very limited in the Maldives. The economy is highly import dependent and meeting the need for staple food requirements and maintaining sufficient storage and distribution facilities is a huge logistical challenge due to the geographically dispersed nature of islands especially during severe and extreme events and unexpected market irregularities.

Subsistence agriculture have played a vital role as main sources of food security and livelihoods in the islands of Maldives, vastly helping the local communities for their needs. Community farming including agritourism community gardens for production of food and food items beyond home consumption and using the produce to create an income through individual families or community groups has been identified as the most important adaptation measure to climate change. These are a small scale, supplementary food production system by and for household members that mimics the natural, multi-layered ecosystem. Home gardens generally cover small areas near to home, roof tops small balconies but have wider diversity of crop species which are crucial to brining resilience in vulnerable regions by reducing the risks. The objectives of community farming including agritourism community gardens is aligned with numerous strategies and policies of the Government's Strategic Action Plan (SAP), falling under Blue Economy for Small and Medium Enterprises and Agriculture sectors. Specifically, the strategies and actions related to development of Agri-centers, standardizing food production and quality of produce, establishing urban gardening models, strengthening agricultural data collection mechanisms and increasing the efficiency of resource allocation through capacity building. Apart from this, management of home gardens helps to increase food availability and better nutrition through food diversity, income and rural employment and environmental benefits of recycling water and wastes and provide shade and alter the microclimate around the house.

CURRENT TECHNOLOGY READINESS LEVEL OR COMMERCIAL READINESS INDEX

Technology Readiness Levels (TRL)

TRL 6 – Technology demonstrated in relevant environment in Hulhumale

Commercial Readiness Index

Level 3 - Commercial scale up

CLIMATE RATIONALE OF THE TECHNOLOGY

- Inclusive, sustainable growth, increase resilience to climate change through agriculture and food sector adaptation,
- Contribute to enhanced food, energy and water security and natural resource management

- This project will build on enduring partnerships, strengthen institutional capacity with strong business model to leverage on community commitment and engagement
- Addressing food security and self-sufficiency which will contribute to reduce the vulnerability in Agriculture and food security sector
- Promotion of climate resilient crops that are suitable for the specific environmental conditions in the Maldives.
- Economic diversification and reduce dependency to imports particularly for fruits and vegetables that grown in local conditions

Economic and Social benefits

- Creation of Jobs and economic opportunities in remote islands
- Connecting farmers with the market
- Enabling Market Access for Farmers
- Coordination of logistics and support to streamline distribution and delivery to overcome supply chain issues arising due to the geographic dispersion
- Production capacity development

Environmental

- Promote locally available fruits and vegetables, therapeutic plants and discourage and reduce dependency on imports
- Promote climate resilient crops growth in the country
- Strengthen productive capacity and entrepreneurship in agriculture

AMBITION OF THE TECHNOLOGY

The overall ambition is to achieve self-sufficiency and minimize dependency on imported fruits and vegetables that can grow locally through community farming including agritourism, community gardens and household farming locally grown crops that are somehow climate resilient adaptable to local conditions with less fertilizer and pesticides. The aim of the TAP is to work with local farmers to develop agriculture related infrastructure and food storage facilities to pursue food security and self-sufficiency that will boosts local production, facilitate value-addition in the agriculture sector and increase overall resiliency of the country. The target is to reduce the dependency on imported fruits and vegetable by 30% in short-medium term.

SCALE FOR IMPLEMENTATION AND TIME-LINE

The project can build on the ongoing urban farming initiatives it can be expanded to a national project and broaden in scope to reach a large segment of the population particularly in over populated and urbanized local islands and cities.

This project is envisioned for implementation within a 2-3 year timeframe

AMBITION FOR TECHNOLOGY READINESS LEVEL OR COMMERCIAL READINESS INDEX

Table 1. Technology readiness level and Commercial readiness for the technology

Technology Readiness Level	
Current level	TRL 7 – system prototype demonstration in operational environment
Ambition for TRL	TRL 8 – system complete and qualified

Commercial Readiness Index	
Current level	Level 2 - Commercial trial
Ambition for CRI	Level 5 - Market competition driving widespread deployment

EXPECTED IMPACTS OF THE TECHNOLOGY

- Empowering youth women and local community to be self sufficient, self dependent to achieve economic targets relating to food security, import substitution, creation of jobs
- Enhance agricultural capacities and opportunities to ensure food security
- Demonstrate that climate resilient crops that are adaptable to local conditions with less fertilizer and pesticides can be grown and marketed
- The project will contribute to reduce the vulnerability
- Economic diversification and reduction of dependency to imports particularly for fruits and vegetables that can be grown in local conditions

POLICY ACTIONS FOR TECHNOLOGY IMPLEMENTATION

EXISTING POLICIES IN RELATION TO THE TECHNOLOGY

Existing laws and policies related to Agriculture and food safety

Name	Year adopted	Main contents	Lead agency	Status
National Food Safety Policy	**(2017-2026)**	The National Food Safety Policy focuses on ensuring safe food production, handling, preparation, storage, and distribution to prevent foodborne illnesses. policy covers food safety broadly; it indirectly impacts agriculture by emphasizing safe production practices and quality standards.	Ministry of Health	Does not specifically address climate adaption
Maldives land law 1/2002 ○	23 May 2003	Maldivian law prohibits private ownership of agricultural land Land use is categorized into house plots (individual use),	Ministry of Housing and infrastructure	this regulation affects agricultural practices and land tenure.

		community land, and government land		
The Law on the Protection and Preservation of the Environment (Law No. 4/93)	1993	Establishes a framework for environmental protection. While not specific to agriculture, it provides the basis for developing regulations and policies related to environmental conservation	Ministry of Environment/ Environmental protection Agency	Recent amendment cover climate adaptation in certain areas
Maldives Standard for Good Agriculture Practices (GAP): Fruits and Vegetables		(GAP) refer to a set of guidelines and principles aimed at ensuring safe, sustainable, and high-quality agricultural production. GAP covers various aspects of farming, from pre-planting activities to post-harvest handling. The goal is to minimize risks (biological, chemical, and physical) associated with crop production and enhance food safety, quality, and environmental stewardship	MFDA/ Ministry of Agriculture and animal welfare	The standards are aligned with international guidelines of (FAO)
Uninhabited Islands Act (Act No. 20/98)	July 1998	The Act grants the authority to island and city councils to govern, according to set rules and regulations, the lease of uninhabited islands in their respective jurisdictions. The Act also aims to balance economic development, environmental conservation, and local governance in managing Maldives' uninhabited islands	Ministry of Agriculture and Animal welfare	The act has been amended in 2022 Does not specifically address climate adaptation
Pesticides control Bill 2019/21	June 2020	To regulate the management, use and distribution of pesticides with the objective of protecting human, animal and plant health and the marine and terrestrial environment	Ministry of Agriculture and Animal welfare	Does not specifically address climate adaptation

PROPOSED POLICIES TO ENHANCE TECHNOLOGY IMPLEMENTATION

- Increase investment opportunities and enhance financial accessibility in Agriculture and food security sector
- Strengthen the institutional, policy and legal framework for community farming in agriculture development
- Reduce the expatriate labour engagement in community farming agriculture sector
- Local capacity development and trainings in Agronomy, Horticulture and Agribusiness technicians
- Make cost-effective good quality fertilizers plant material, plant nutrition irrigation systems, and hydroponic systems etc locally available

COSTS RELATED TO THE IMPLEMENTATION OF POLICIES

The TAP is estimated at ~USD 2,356,000, 69% funded through donor, 26% donor and GOM combined and 5 % from the Government budget.

Estimated cost of the PI 1 (Roof tops, Terraces and Balcony Farming at Vinares and Hiya Towers Phase II Hulhumale) is 520,000. USD over 3 years.

Estimated costs for the PI 2 (Agritourism) implementation is 5, 200,000. 00 USD over 5 years

USEFUL INFORMATION

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