FINAL REPORT

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AGRICULTURE SECTOR MODERNISATION PROJECT (ASMP)

FCG.

Consultancy Services to Design, Establish, Operate, Manage and Transfer of Agriculture Technology Demonstration Parks (ATDPs) to Farmer Producer Organizations (FPOs)

Contract No. LK-MOA-PMU-41990-CS-QBS

Prepared for Ministry of Agriculture and Plantation Industries,

Government of Sri Lanka

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INTRODUCTION

The Ministry of Agriculture and Plantation Industries of the Government of Sri Lanka (*the Client/ MoA*) entered into a contract with FCG ANZDEC Limited, New Zealand and FCG Swedish Development AB, Sweden (*the International Service Provider/ the ISP/ Consultant*) in October 2019 to deliver consultancy services provided to design, establish, operate, manage and transfer Agricultural Technology Demonstration Parks (ATDPs) to Farmer Producer Organizations (FPOs) (*the ISP's Technical Assistance (TA)/ Assignment*),

This Final Report provides details of activities delivered and outcomes achieved over the entire contract duration of the ISP, from October 2019 to March 2024, under the Agriculture Sector Modernization Project (ASMP). The report presents:

- The rationale for the consultancy services provided by the ISP.
- The approach taken during implementation.
- An assessment of the outputs and outcomes through interventions of the ISP
- Cluster-wise progress update, challenges, and recommendations for the sustainability of the established processes and systems beyond the life of the Project.

EXECUTIVE SUMMARY

Modern agriculture is an approach to ensure food security through increased productivity, while minimizing environmental impacts by optimising use of inputs such as land, water, fertilizers, and pesticides. One such initiative is being undertaken by the Ministry of Agriculture and Plantation Industries of the Government of Sri Lanka through the Agriculture Sector Modernisation Project (ASMP). The Project seeks to support smallholder farmers in Sri Lanka to modernize agricultural production, increase productivity, improve market access, and enhance value addition within an agribusinesses approach through Agricultural Technology Demonstration Parks (ATDPs). The Project is supported by the World Bank, through a Credit from the International Development Association (IDA).

FCG ANZDEC Limited and FCG Swedish Development AB were contracted in October 2019 by the ASMP as an International Service Provider (ISP) to provide consultancy services to support the integrated development and modernization of the ASMP fruits and vegetables value chain in Sri Lanka. The ISP commenced the assignment in December of 2019 by conducting a feasibility study to identify potential Clusters and crops in seven selected Districts and designing a Cluster Development Plan (CDP) for each identified Cluster. In total, twenty CDPs for twenty Clusters were completed.

The CDPs emphasized four specific development areas of interest for the ASMP:

- The introduction of new and/or improved agronomic practices.
- The institutional development of smallholder farmers to form Private Unlisted Companies (PUCs).
- The establishment of state-of-the-art post-harvest infrastructure (Post Harvest Processing and Packing Centres PHPPCs).
- The facilitation of market linkages for the PUCs.

The ISP disseminated modern agriculture practices for ten crops, including six tropical fruits and four vegetables, and directly benefitted over 4,300 farmers and more than 3,000 acres of land holdings in 20 Clusters. Since these were model demonstration Clusters, it is expected that the Project will indirectly benefit two to three times this number as small farmers in nearby villages within each ATDP become part of the scheme.

Through a series of institutional development activities, 150 - 500 farmers in each of the 20 clusters were incorporated into the legal entities or PUCs. Out of these 20 PUCs, 4 PUCs have started commercial business ventures by selling their produce to institutional buyers and 16 PUCs are ready to commence business upon harvesting produce in the upcoming weeks/months. Out of these 16 PUCs, 10 PUCs have started building their working capital through sales of agricultural inputs to member farmers and offering other services like hiring of farm equipment. Up to January 2024, more than LKR 83 Mn (about USD 260,000) have been raised by the PUCs through shares and sales of agricultural inputs.

The establishment of state-of-the-art Post-Harvest Processing and Packaging Centres (PHPPCs) in each Cluster presents a step change for the fresh produce industry of Sri Lanka. These facilities add value to the agricultural products sold by the PUCs to buyers/exporters through a post-harvest process featuring washing, drying, selection, grading, packaging, cooling, and shipping. These facilities were designed by the ISP as multifunctional to accommodate most of the fruits and vegetables produced in Sri Lanka and will significantly reduce the post-harvest losses, generate rural employment, and increase farmer income. Four facilities are already operational, and others will be completed in the upcoming months as the crops are harvested.

The PUCs were linked with over 25 potential buyers in Sri Lanka through the ISP market linkages activities, highlighted by a buyers-sellers meet and farmers market in November of 2023 at BMICH in Colombo, the best site for exhibitions and conferences in Sri Lanka. In this event, the PUCs had the

opportunity to showcase and sell their produce directly to buyers/exporters and the public. During the event many buyers/exporters linked directly with the PUCs to explore future business ventures. One of the main outputs of this event was the establishment of an ASMP database of potential buyers/exporters for PUCs produce.

Despite facing numerous challenges that affected the operating environment of the Project from 2020 to 2022, including the COVID-19 pandemic and the domestic economic crisis, the ISP successfully delivered on most of the charted Project outputs. The positive results from the ISP interventions are now starting to overflow into the agriculture sector of the whole country. Example, there has been significant increase in productivity of various crops like potato, onion, chilli and mango among others, cost of production has drastically reduced across clusters through use of modern agriculture practices like fertigation, export of bananas has commenced from few clusters and other crops will be ready for exports in near future.

Notwithstanding the successes achieved by the ISP, the future sustainability of the PUCs requires ongoing support to overcome the agronomic and institutional challenges of nascent businesses. it is common for international development projects similar in scope and scale to the ASMP to take 8-10 years to fully achieve expected impacts. In this regard, there are two particularly important operational recommendations:

- a) Maintain regular supervision and mentoring by extension officers of the DoA to make sure all farmers in the PUC, and beyond, adopt the modern technology practices introduced by the ISP to ensure the timely delivery of consistent quantity and quality of produce to buyers.
- b) For at least three to five years, ensure the PUCs have access to advisors in various critical operational and administrative fields such as agronomy, marketing, exports, finance, legal and secretarial services.

In concluding the ISP assignment, the intervention has undoubtedly made a significant impact to modernising the agricultural practices in Sri Lanka and has been delivered during a challenging time for the country. Whilst there is more to be done, the ASMP has proven to be a successful approach that with continued support can make a sustained difference to the social, economic, and environmental prosperity of Sri Lanka.



1. BACKGROUND

The World Bank, through a Credit from the International Development Association (IDA), is supporting the Government of Sri Lanka to implement the Agriculture Sector Modernization Project (ASMP) with the purpose of supporting the modernization of the agriculture sector.

The development objectives of ASMP are to support increasing agriculture productivity, improving market access, and enhancing value addition of smallholder farmers and agribusinesses in the project areas. The project has three components.

- a) *Component 1:* Agriculture Value Chain Development, to promote commercial and exportoriented agriculture; attract and leverage investments from farmer producer organizations and agribusinesses for high value agriculture production and value addition; and provide the enabling environment, incentives, and access to finance.
- b) *Component 2:* Productivity Enhancement, Diversification and Demonstrations, to support smallholder farmers to produce competitive and marketable commodities, improve their ability to respond to market requirements, and move towards increased commercialization.
- c) Component 3: Project Management, Monitoring and Evaluation by Project Management Units (PMUs) and Provincial Project Management Units (PPMUs) setup by Ministry of Agriculture (MOA) in the participating provinces. The functions are project management and coordination, technical supervision, financial management, procurement, social and environmental safeguards, and monitoring and evaluation (M&E).

MOA is implementing the following sub-components under the Component 2:

- a) Farmer Training and Capacity Building
- b) Modern Agriculture Technology Demonstration Parks which is supported by the ISP Technical Assistance (TA) reported herein.
- c) Production and Market Infrastructure.
- d) Analytical and Policy Advisory Support.

With the ambitious design of the project to put the private sector at the centre of the agriculture transformation process in Sri Lanka, with focus on subsistence to prosperity of smallholder farmers, the International Service Provider (ISP) was contracted in October 2019 to provide consultancy services to design, establish, operate, manage and transfer of Agriculture Technology Demonstration Parks (ATDPs) to Farmer Producer Organizations (FPOs) in seven districts of the five provinces covered by the project.

Through this TA, the key objective of the MoA was to bring the international expertise and experience in integrated value chain development to Sri Lankan agriculture, helping actors to move beyond the current focus of domestic self-sufficiency and production of single crops to a more comprehensive district investment strategy based on comparative advantage, business orientation and competitiveness.

The assignment was originally planned to be completed by 31st December 2021. However, the COVID-19 pandemic put activities on hold during 2021-22, this was compounded by the economic crisis in Sri Lanka during mid-late 2022, along with various challenges in the field. This resulted in multiple extensions with the last extension being until December 2023. To complete the administrative tasks and reporting, the ISP requested for a further extension of three months to 31 March 2024.



2. APPROACH AND INTERVENTIONS

The section details the ISP interventions under the technical assistance, conceptual model of ATDPs and the approach taken to execute the assignment during Oct 2019 – Dec 2023.

2.1 OBJECTIVES OF TECHNICAL ASSISTANCE

Under the umbrella of the ASMP, the ISP was contracted to provide technical advisory on design, establishment, as well as operation, management, and transfer of ATDPs to FPOs in selected clusters. As part of the ATDP Cluster establishment, the ISP conducted a feasibility study with the objective of identifying clusters in each of the seven selected districts, formulate Cluster Development Plans (*which detailed out the intervention strategy in the cluster*), pilot the best available and proven technologies, mobilize farmers into farmer organizations, build capacity of Farmer Organizations, and facilitate market linkages between FPOs and buyer. The assignment aimed at:

- a) Conducting a feasibility study to identify high potential commodities in the clusters in each ATDP district. The criteria for the identification included, but not restricted to, potential for high value and value addition, agro-ecological conditions, market potential, land and water availability, presence of irrigation infrastructure and value addition potential.
- b) Developing Cluster Development Plans (CDPs) for each identified ATDP cluster through the feasibility study. The CDPs included the following sections:
 - Cluster description.
 - Value chain selection in cluster
 - Opportunities and challenges in selected value chains
 - Value chain investment in cluster
 - Small-scale public infrastructure (including access feeder roads and small-scale irrigation systems) identification.
 - Social and environmental management plan
 - Consolidated investment plan with budget.
- c) Mobilizing smallholder farmers in clusters of each ATDP to form Farmer Producer Organizations (FPOs) through awareness campaigns and organizational training.
- d) Capacity building of FPOs in business and technical areas which would help them to improve collective decision making, running an enterprise, enhance production capacity, and marketing ability.
- e) Identifying and implementing innovative technologies with necessary training and regular technical support that would help smallholder farmers to enhance productivity, diversification, commercialization, and implement sustainable and climate resilient production models.
- f) Facilitating market linkages between FPOs and buyers as well as FPOs and input suppliers. The former would result in better market price realization for the produce, while the latter will result in reduced input price realization.



2.2 ATDPs CONCEPTUAL MODEL

Under the ASMP, the pilot scheme investments which were introduced tested a range of recommended technologies under field conditions and formed the basis for the ISP to learn the bottlenecks in achieving the overall objectives of the ASMP and developing the ATDPs model. To serve this purpose a thorough feasibility analysis was undertaken to include positive and negative lessons to the below conceptual model.



Figure 1: ATDP Conceptual Model

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2.3 INTERVENTIONS

The ATDP comprises of three major interventions addressing the production, institutionalization, and value addition components of the value chain integration.

1. Demonstration Plots (Agronomy)

For showcasing the modern agriculture practices, tools, and equipment to farmers in the clusters, demonstration plots of 0.5 acres each were proposed in each of the 20 clusters. These demonstration plots were envisaged to act as a learning centre for cluster farmers and to replicate the technology practices through support from DoA extension officers.

2. Institutional Development

To aggregate the smallholder farmers at the cluster level into a legal entity, enabling the farmers to offer aggregated quality produce to institutional buyers (domestic retailers/exporters/importers) through Cluster level grading, processing (washing and drying) and packaging. To strengthen the bargaining power with buyers and the timely supply of quality agriculture inputs for member farmers. Farmers companies were established and registered as Public Unlisted Company (PUC). In addition, market linkages were facilitated for the established PUCs.

3. Post-Harvest Processing and Packaging Centres (Value Addition)

For processing (washing and drying), grading and packaging of the produce for institutional buyers, state of the art facilities were proposed, having multi-functional packaging lines to cater to any kind of fruits or vegetables. Temporary packing facilities in already existing buildings were set up in a good number of Clusters to quickly begin offering finished products to institutional buyers. This intervention allowed a few PUCs to begin doing business through actual commercial transactions with interested buyers.





Figure 2: ISP's Interventions

2.4 OUTPUTS

The outputs of the TA are:

- a) Feasibility Study
- b) Cluster Development Plan for each Cluster.
- c) Registration of all FPOs
- d) Trainings conducted for all FPOs.
- e) Adoption of identified technology packages by FPOs and its farmers.
- At least 2 long-term purchasing agreements per FPO (longer than 2 years) between FPO and Buyer

2.5 OUTCOMES

The overall project goal is achieved by following major outcomes:

- a) Clusters of each ATDP should be established and operational in accordance with the Cluster Development Plan
- b) All the FPOs are Operational and 70% of the FPOs are making profit.
- c) Increase in average value of sales of agriculture products due to project intervention by at least 30% in the project area.
- d) The project will have at least 8000 direct beneficiaries out of which 30% are female beneficiaries.
- e) Number of jobs generated through value chain investments in ATDP Cluster
- f) Beneficiaries who have adopted an improved agriculture technology promoted by the project out of which 30% should be female beneficiaries.

2.6 GOVERNANCE AND DELIVERY ARRANGEMENTS

Project Management Unit (PMU): The PMU was established to ensure systematic day to day coordination, act as point of contact, and supervise the implementation of the project activities, including those of the ISP. The PMU works under the overall guidance of Ministry of Agriculture and Plantation Industries of the Government of Sri Lanka, who makes high-level managerial, technical, and financial decisions. Under the PMU, Provincial Project Management Units (PPMUs), were established to ensure day-to-day coordination at the district level and supporting ISP during the delivery of assignment.

Review Committee (RC): The RC was appointed by the Ministry of Agriculture and Plantation Industries of the Government of Sri Lanka comprising group of technical experts covering subject matter expertise on agronomy, engineering, institutional development, among others. The RC worked under the Steering Committee and met regularly to create an effective forum for communication between the ISP, PMU and PPMUs to encourage discussion on progress, challenges and solutions. Other key task was to review all the deliverables of the ISP, provide strategic guidance, recommend/ suggest on any modifications, and accordingly recommend for the payment of deliverables to the ISP by MoA.



Figure 3: Governance Model



Steering Committee (SC): The SC comprised of officials of MoA, Provincial Secretaries, and subject matter experts. This committee met to review workplans and budgets, progress reports and reviews, and to discuss any strategy issues as they arose. The chairmanship of this Committee is held by the Secretary of the Ministry of Agriculture and Plantation Industries of the Government of Sri Lanka.

The project is funded by the World Bank through a Credit from the International Development Association (IDA) to the Ministry of Finance, Government of Sri Lanka and implemented by Ministry of Agriculture and Plantation Industries of the Government of Sri Lanka.

ISP Delivery Team: To execute the assignment, the ISP engaged a team of international and national experts along with in-house managerial and quality assurance team consisting of a Project Director, a Project Manager, and a Project Admin & Financial Controller.



Figure 4: Institutional Mechanism

The ISP engaged a Team Leader (TL) to lead the implementation of the assignment, together with a wider team of technical experts and management. Details of activities by each expert during the implementation of the assignment were summarized in monthly progress reports submitted to the PMU.





Figure 5: ISP Team



3. RESULTS- OUTPUTS, OUTCOMES AND SUSTAINABILITY

3.1 OUTPUT 1: FEASIBILITY STUDY

Output	Milestone
Output 1: Feasibility Study	# II: Feasibility study report

Upon approval of the inception report (*milestone #1*), the feasibility study was initiated in November 2019 with key objectives to validate the project design, identify the clusters in each of the seven districts, select the potential crops and define the scope of each cluster. The feasibility study was carried out by international and national experts of the ISP in close coordination with the Project Management Unit (PMU), Provincial Project Management Units (PPMU), Provincial and District Secretariats, Departments of Agriculture (DoA), Irrigation, Agrarian Services, Mahaweli Authority, and field work/ stakeholder discussions were completed in March 2020.

The report described the methods and findings of the feasibility assessment, including agro-ecological conditions, potential for high value crops and value addition, agribusiness buyer interest and market demand, stakeholder consultations to identify potential areas with available suitable land and irrigation water, and participatory assessments with farmers and farmer organizations to seek social acceptance. As a result of detailed field work and assessments, the following 22 clusters and respective crops were selected in seven districts of Sri Lanka.

DISTRICT Cluster DS Division		Сгор
ANURADHAPURA	Rajanganya	Ambul Banana
	Thalawa and Galnewa	Chilli
	Ipologama	Guava
BATTICALOA	Velavely	Cavendish Banana
	Kaluwanchikudy	Pomegranate
	Walachchena Sandiweli	Pomegranate
JAFFNA	Oddusan	Potato/ Onion rotation
	Кораі	Ambul Banana
	Chavakachcheri	Mango
MATALE	Luster	Mango
	Dambulla	Guava
	Laggala	Рарауа
	Laggala	MD-2 Pineapple Pilot
MONARAGALA	Sooriyawewa Area	Cavendish Banana
	Sewanagala	MD-2 Pineapple Pilot
	Syambalanduwa	Mango
MULLAITIVU	Maritimepattu	Pomegranate
	Pudukuiuppu	Banana (Kollikuttu)
	Oddusan	Рарауа
POLONNARUWA	Hingurankoda	Рарауа
	Ellahera	Organic Vegetable
	Mahaweli Area	Chilli

*As on 23rd November 2020

** While preparing the Cluster Development Plan (CDP), there were changes in DS divisions in few of the districts.



On 1st February 2021, the list of clusters and selected crops was revised, and MD-2 pineapple cluster in Matale and Monaragala were dropped, reducing the list from 22 clusters to 20 clusters. However, it was proposed to pilot the MD-2 pineapple in both districts in small plots of less than one acre.

List of clusters attached as Annexure 8.1

The report was accepted by MoA on 17th *February 2023.*

Considering the changes in market demand and export potential, on 18th July 2022 the ISP requested the following modifications to crop selection:

- a) Replacing proposed three (3) papaya clusters (in Mullaitivu, Polonnaruwa, Matale) with MD-2 pineapple clusters; and
- b) Replacing one (1) organic vegetable cluster in Polonnaruwa with an agro-processing oriented normal, non-organic vegetables cluster.

Replacement was agreed by the Review Committee only for Papaya to MD-2 pineapple in Matale.

Request for replacement of clusters attached as Annexure 8.2.

Upon pilot activity for MD-2 pineapple by the ISP in Matale and assessment by DoA, the crop in Laggala cluster of Matale was changed back from MD-2 pineapple to Papaya on 27th September 2023, which was further changed to Mango on 30th October 2023. Upon various discussion on the organic vegetable clusters internally among MoA, the organic vegetables cluster in Polonnaruwa was changed to non-organic vegetables and notified to the ISP during the Steering Committee meeting on 27th September 2023.

The final crops for the 20 clusters are

- Jaffna: Ambul Banana, Mango, Potato and Onion
- Mullaitivu: Kollikutu Banana, Papaya and Pomegranate
- Anuradhapura: Ambul Banana, Guava, Chilli
- Polonnaruwa: Papaya, Non-organic vegetables, Chilli
- Matale: Mango (two clusters) and Gauva
- Batticaloa: Cavendish Banana, Pomegranate
- Monaragala: Cavendish Banana, Mango



Outcome: Feasibility Study Report

The feasibility study report proposed a rationale for the design of agricultural modernization activities and investments to be implemented to support cluster development and establishment of ATDPs. Upon selection of clusters, the next output for the ISP was the development of Cluster Development Plans (CDPs) for each of the 20 clusters.



Figure 6: ISP Team conducting field visits and meetings during feasibility assessment.

3.2 OUTPUT 2: CLUSTER DEVELOPMENT PLAN (CDP)

Output	Milestone		
Output 2: Cluster Development Plans (CDPs)	 III.1: CDPs with implementation plans VII.3: Detailed cost estimates, technical specifications, bill of quantities per cluster, as required 		

A Cluster Development Plan (CDP) was developed for each of the 20 identified ATDP clusters. The CDPs included the following sections:

- Cluster description.
- Value chain selection in cluster
- Opportunities and challenges in selected value chains
- Value chain investment in cluster
- Small-scale public infrastructure (including access feeder roads and small-scale irrigation systems) identification.
- Social and environmental management plan
- Consolidated investment plan with budget.

Upon finalization of the list of clusters on 1st February 2021, the 1st CDP was submitted on 23rd February 2021. Thereafter, travel restrictions imposed by COVID-19 pandemic in 2021 resulted in a slowdown



of activities with the CDPs only being completed in July 2023. Due to changes of crop in two clusters by MoA in October 2023, the CDPs were revised and approved on 16th December 2023.

Despite the delay in the submission of CDPs, the overall framework for development of each cluster had been agreed by the MoA under the authorization of the Project Director and the ISP had already started field activities during early 2021, immediately after the completion of the feasibility study.

Outcome: Cluster Development Plan (CDP)

CDPs detailed the interventions proposed by the ISP for each of the 20 clusters, along with roles and responsibilities for stakeholders (PMU, PPMU and other line agencies), environmental and social screening reports, technical specifications for proposed equipment/ infrastructure, bills of quantities and cost estimates.

3.3 OUTPUT 3: REGISTRATION OF FPOSs

OUTPUT 4: TRAININGS CONDUCTED FOR ALL FPOs

One of the key components was to aggregate the smallholder farmers at a cluster level into a legal entity (PUC), enabling the farmers to offer aggregated quality produce to institutional buyers (domestic retailers/ exporters/ importers) through farm level grading, processing (washing and drying) and packaging; strengthen the bargaining power, and timely supply of quality agriculture inputs for member farmers. To achieve the expected outcome, a series of activities were implemented under output #3 and output #4.

Outputs	Milestones
Output 3: Registration of FPOs	 IV. Registration of PUCs with comprehensive Business Plan a) Selection of BoDs and EC members b) Registration of PUC • Support secretarial service provider with all the required documents from farmers for the registration process. c) Mobilization of farmers into PUC d) Initiative collection of share capital e) Development of Business Plan for PUC
Output 4: Trainings conducted for all FPOs	 VI.1. Awareness Orientation (one day) and training (four days) for establishing PUCs per cluster. a) Awareness programme (line agency officers) Provide detailed information on the PUC model and seek maximum cooperation for sustainability. b) Awareness orientation (grass-root level; farmers) Explain the benefits, encourage, identify interested farmers to become active members and promote the bottom-up approach for the development of PUC. c) Capacity building of BoD and EC members (four days programme) (milestone VI.1) Capacity building on business planning and management, decision making, conflict resolution, and financial management

VIII: Establish the organizational and management structure, formulate business plan and a benefit sharing model approved by members
 Initiate collection of share capital Moderate the board meeting after registration of PUC. Get farmers' feedback and acceptance to make necessary changes to complete the PUC constitution and PUC business plan.
VI.2: Completion of Training Need Assessments (TNA)
VI.3: Development of Curricular for relevant business (eg. FBS) and technical areas together with training schedules
VI.4: Monitoring of training provided by service providers including internal training assessments.

Since the activities for the two outputs were interlinked, the flow of the activities is presented below:



Through these interventions, the ISP mobilized 150 - 500 farmers in each of the 20 clusters and formed 20 legal entities, termed as Public Unlisted Company (PUC), registered under the Companies Act No. 7 of 2007 of the Registrar of Companies in Sri Lanka.

DISTRICT	CLUSTER	PUC Name		
MATALE	Mango	Ceylon Rangiri Agro Products Limited		
	Guava	Sigiri Guava Limited		
	Mango	Lak Golden Mango Limited		
POLONNARUWA	Chilli	LPL Agri Holdings Limited		
	Non-Organic Vegetable	Ceylon Vege Cultivators Limited		

	Papaya Ceylon Fresh Papaya Limited			
JAFFNA	Banana	Jaffna Organics Farmers Company Limited		
	Potato Onion	Ceylon Smart Potato Farmers Company Limited		
	Mango	Jaffna Mango Queen Farmers Limited		
MULLAITIVU	Banana	Vanni Fresh Fruitz Farmers Company		
	Pomegranate	Lankan Red Gems Farmers Company		
	Рарауа	Golden Papaya Farmers Limited		
BATTICALOA	Banana	Porathevu Pattu Agro Paradise Banana Ltd		
	Pomegranate	Kulawanchikudy Agro Village Limited		
	Pomegranate	Sun East Pomegranate Agro Limited		
ANURADHAPURA	Banana	Rajanganaya A-Park Limited		
	Chilli	Ceylon Agro Park Limited		
	Guava	Ipalogama Agri Products Limited		
MONARAGALA	Mango	Siyambalanduwa Agro Products Limited		
	Banana	King Banana Sevanagala Limited		

Table 1: List of PUCs

A rigorous exercise was undertaken comprising farmers mobilization, sensitization on the concept of the farmer company/ PUC and its benefits, selection of a Board of Directors (BoDs), enrolment as shareholders and initiating the collection of share capital. To support this, the ISP developed comprehensive business plans and undertook capacity building programmes for BoDs on business management as shown below.

	Т	otal Participa	Evaluation		
Training Program	Male	Female	Total	Pre- Evaluation	Post Evaluation
	54	15	69		67.6%
Тот	78%	22%	100 %		
	1783	580	2363		
One-day orientation	75.45%	24.55%	100 %		
Four-days business	329	115	444		
management (1 st two days)	74.10%	25.90%	100 %	48.7%	63.4%
Four-days business	309	85	394		
management (2 nd two days)	78.42 %	21.58 %	100 %	54.19%	74.74%

Table 2: Summarized Participation during Capacity Building of PUCs

From the above training participation numbers, the trainings programmes were delivered satisfactorily with about 25% female participation. Most importantly, the above trainings were successful to explain the concept of the PUCs, to mobilize farmers into a legal entity and to educate them on the business management of the PUC.

In addition, to ensure that the institutional and organizational structures were well established, the ISP also moderated one board meeting for each PUC to explain procedures, responsibilities, and powers. Key issues identified during these meetings were the need for regular technical handholding and financial support to ensure the sustainability of these PUCs and the establishment of the post-harvest processing infrastructure for the realization of the business. A formal recommendation letter on continuous support was submitted by the ISP to the PMU on 4th July 2023.

For details, refer to final report for milestone VI.1

Another component under the training was the development of the Farmer Business School – Learning Management System (FBS-LMS) based on the FAO Farmer business School model. The Farmer Business School – Learning Management System (FBS-LMS) is a novel approach to train large numbers of farmers based on the FAO Farmer Business School (FAO FBS) and Farmer Producer Organisation (FPO) training manuals developed by the ASMP. The training was designed to be delivered entirely as physical training workshops over a total of 37 sessions. The ASMP, with support from the ISP, worked with an IT service provider and training specialists to develop this hybrid programme to teach farmers the most critical and relevant elements of the original FAO FBS and ASMP FPO modules. This resulted in delivery using three training modalities:

- face to face physical training sessions.
- online group training session using MS Teams, and
- self-learning using the LMS web-based learning tools specifically developed for the programme.

Additionally, the role of the ISP was to monitor the implementation of the FBS training outsourced by ASMP to a private service provider (Industrial Services Bureau (ISB)). The monitoring was executed according to their activity plan which had been approved by the PMU for the period of June – November 2023.

The progress of the *"Physical Training Sessions"* and the *"Online Training Sessions"* by the ISB until 30th November 2023 was:



	Session 1	Session 2	Session 3	Session 4	Session 5	Session 6	Overall
Physical Sessions	1,261	1,605	1,512	1,355	77	549	7,053
	53.22%	68.75%	63.82%	57.19%	32.54%	23.17%	49.62%
Online Sessions	723	500	429	272	184	184	2,292
	30.52%	21.11%	18.11%	11.48%	7.77%	7.77%	16.12%

Table 3: Progress of FBS Trainings until Nov 2023

For details, refer to final report for milestone VI.4

Outcome:

All FPOs are operational and 70% of the FPOs are making profit*

*Out of the 20 PUCs, four PUCs have started commercial business by selling their produce to institutional buyers and 16 PUCs are ready to commence the business upon harvest in upcoming weeks/ months. Out of these 16 PUCs, 10 PUCs have started building their working capital through sales of agriculture inputs to member farmers and offering other services like hiring of farm equipment, etc. To date, more than LKR 83 Mn in total capital have been raised by these PUCs through shares and sales of agriculture inputs. For mapping the net profit from the sales of produce and agriculture inputs, an independent audit would be required for the PUCs.



ISP Experts undertaking Capacity building workshop for PUCs on Business Management





ISP Expert monitoring the FBS Training

3.4 OUTPUT 5: ADOPTION OF IDENTIFIED TECHNOLOGY PACKAGES BY FPOs AND ITS FARMERS

This output focussed on increasing agriculture productivity and value addition of smallholder farmers through two broad activities.

- a) Implementation of modern agriculture technology packages
- b) Establishment of post-harvest processing and packaging centres

Outputs	Milestones
Output 5: Adoption of identified technology packages by FPOs and its farmers	 Agronomy VII.1: Supervision Plans for implementation of technology packages VII.2: Supervision of the implementation of technology packages VII.4: Supervision of implementation of the environmental and social safeguards and IPM packages VII.6: Production of Operational Manuals of CDPs for the technology package
	Post-Harvest Processing and Packaging Centres (PHPPC)
	 III.2: PHPPC – Proposals, Designs, Implementation plans with Business Models VII.3: Detailed cost estimated, technical specifications, bill of quantities per cluster, as required. VII.5: Supervision of implementation of PHPPC

The first step was to focus on commercial farming by increasing the agricultural productivity in all the clusters through adoption of modern agriculture practices and technologies. To demonstrate the practices and technologies to the farmers, demonstration plots were established in each of the 20 clusters in most suitable locations with maximum exposure to large number of farmers in the cluster. This includes demonstration of high-density plantation systems, land preparation techniques, drip-irrigation systems, weather stations, flood prevention and drainage field techniques, precision planting, precision fertilization, Integrated Pest Management (IPM) and other quality management practices.

The technology package and other management practices were introduced by the ISP's International and National Agronomist to a selected group of farmers (a core group made up of 50 farmers) which provided the foundation to replicate the practices to all the farmers in the cluster. Further, capacity building was undertaken for district coordinators and cluster coordinators of the ISP and officials of the PPMUs, with the additional participation of extension officers from the MOA and Mahaweli Authority to assist and supervise the dissemination and expansion of the new technology packages to a large number of farmers.

Regular visits were undertaken by the ISP's International and National Agronomist for the supervision of the implementation of technology packages, including advice on required corrective actions and capacity build on the next steps of the introduction of new and/or improved technology, according to the physiological development of the crops.

(Details are presented in the supervision plans (milestone VII.1) and supervision visit reports (milestone VII.2), also stating the challenges and recommendations for PMU/ PPMU to take corrective actions).



For the sustainability of the project, it is important for DoA officials to come forward and take over the technical aspects of the project. Therefore, to ensure the continuity of the ISPs efforts and a smooth transition, the ISP disseminated the technical know-how to MoA and DoA officers in a seminar-workshop organized by the ASMP during $20^{th} - 22^{nd}$ November 2023 in Kandy. The key objectives of this activity were to review the technologies introduced by the ISP and to clarify any gaps that existed in the scientific validity and in the application of this technology in the field by the officials of MoA and DoA.

The ISP technology for the different ASMP crops was reviewed and discussed in detail. There was good participation from various stakeholders including DoA and Mahaweli executives, researchers, field agents at the Provincial and National level, Project Management Unit staff and executives from MoA and the World Bank.

As an asset, operational manuals have been prepared for the technology practices implemented by the ISP for all the ASMP crops.

The next step in the introduction of modern technology by the ISP was the post-harvest management practices required to preserve the quality and shelf life of the harvested produce from the PUCs and enhance the marketability of such produce. It was proposed by the ISP to establish Post-Harvest Processing and Packaging Centres (PHPPC) in each of the seven ASMP Districts with Collection Centres at the cluster level, linked to the District PHPPCs. However, following discussion with the World Bank and the PMU, it was agreed to establish smaller versions of PHPPCs in all the clusters, rather than one at the district level. The ISP queried if the full capacity of the PHPPCs at the cluster level would be utilised, however, the decision was made to proceed at cluster level.

Detailed proposals for the implementation of PHPPCs were submitted by the ISP, comprising concept, operational details, and the business model. In addition, although the ISP was required to provide only the layout design for the PHPPCs, upon request from the PMU, the ISP provided detailed engineering designs for seven facilities and layout design for other 13 facilities. Along with the designs, detailed specifications were provided for the procurement of equipment/machinery.

Since the establishment of the PHPPCs was getting delayed, primarily due to land clearances/acquisition, the PMU instructed the ISP to supervise the establishment of seven temporary facilities, one in each district, which was undertaken through the ISP team (including the Team Leader, International and National Agronomist, Institutional Development Specialist, Food Technologist and Engineers).

Details are presented in the reports for supervision of implementation of PHPPCs (milestone VII.5).













ISP Experts during implementation of PHPPCs

Outcomes:

1. Expected: The project will benefit at least 8,000 (6520 as per revised targets) direct beneficiaries out of which 30% will be female beneficiaries.

Situation:

- Until 31st December 2023, 4329 farmers have been benefited from the ISP's technology packages.
- The ASMP Project was expected to provide 6520 direct beneficiaries with agriculture inputs, planting material, equipment, and other required production supplies. However, there was a long procurement delay due to various external factors including COVID-19 and an import ban on certain products. This resulted in the withdrawal of a significant number of farmers from the project.

2. Expected: Number of jobs generated through value chain investment in ATDP clusters

Situation: Through ISP's interventions, the Project is expected to generate at least 1,000 direct jobs and 2,000-3,000 indirect jobs. Exact numbers can only be calculated based on an independent evaluation by the Project against the baseline survey done by the PMU.

3. Expected: Beneficiaries who have adopted an improved agriculture technology by the project out of which 30% female beneficiaries

Situation: According to the ISP's evaluation, the technology packages are well accepted in more than 80% of the clusters. However, the supervision and involvement of the officials of the PPMU and extension officers of DoA plays a vital role in ensuring adequate adoption.

OutputsMilestonesOutput 6: Long-term purchasing
agreements#V: At least 1 offer from buyers to enter into long-term
purchasing agreement between buyer and PUC of each cluster.• Signing of agreement
• Performance of agreement (evidence for continuous
transactions)

3.5 OUTPUT 6: LONG-TERM PURCHASING AGREEMENTS

The viability and attractiveness of securing long-term purchasing agreements was questioned by the ISP, with the market dynamics and disadvantages highlighted to the PMU, the Review Committee, and the Steering Committee several times. A request was made to amend the milestone to securing "Purchase Orders" or "Contracts" with buyers and the concept note with detailed justifications was submitted to the PMU on 25th January 2023 (enclosed as annexure 8.3). The request was not actioned despite acknowledgement of justification.

All PUCs are in the early stages of development and have no proven track record in delivering consistent volumes of quality produce. This makes it very difficult to build trust with institutional buyers sufficient to sign long-term agreements. There remain challenges for the ASMP PUCs to guarantee the delivery of the required quality and quantity of produce to satisfy the needs of buyers.

To extend our best support to the project, the ISP contracted a dedicated marketing and sales resource to focus on partnerships among buyers and farmer companies. He was able to connect PUCs having good supplies of produce (active PUCs) with various potential buyers and was able to obtain purchase agreements for two PUCs.

Furthermore, it was realized by the ISP that instead of restricting themselves to one buyer, it is economically beneficial for the PUCs to interact with several buyers. Several buyers allow the PUCs to increase the efficiency of price discovery and negotiations. In October 2023, the ISP presented the idea to the Project to organize a buyer-seller meet, enabling the PUCs to display their product and buyers to communicate their expectations on quantity, quality and prices. To facilitate the event, the ISP also supported the PUCs in the development of sales collaterals (as sales tools), including details about the products, location of clusters, quantities, qualities and so on.

Key achievements of the buyer-seller event were:

- More than 25 FPOs had the opportunity to display their products and sell to the public.
- On an average, more than 5 potential buyers connected with the PUCs.
- A database of potential buyers was created.
- PUCs Increased their visibility to potential buyers.

The ISP's marketing and sales expert is still working with the Project during an extended period from January to March 2024.

The major challenges to secure long-term agreements and/or continuous transactions are:

- 1. Low volumes leading to increased logistics cost for buyers making it unfeasible for reefer container exports.
- 2. Inconsistent quality, primarily due to limited application of modern pre- and post- harvest practices by farmers. There should be improved supervision by extension officers to ensure that farmers implement these modern practices effectively.
- 3. Unfavourable climatic conditions.
- 4. Reliable harvest volume forecasts for buyers due to lack of efficiency by the Fruit Desks in the PUCs.
- 5. PUCs having very high expectations on pricing, poor understanding on market dynamics and not willing to close deals with committed buyers.
- 6. Several clusters have no volume available because the harvesting period is over or is expected later during the year. Buyers are attracted only once the harvest is about to start and they audit the available quantities.





Meeting with potential buyers, capacity building of PUC board on the market dynamics, facilitating buyer-seller meet

Outcome

Expected: Long-term purchasing agreement facilitated per PUC

Situation:

- Porathevu Pattu Agro Paradise Banana Ltd has signed an agreement with Dole.
- Rajanganaya A-Park Limited is in advanced stages of signing an agreement with Ceylon Fresh
- Serendib Global Trading Pvt Ltd has expressed interest in nine clusters of ISP and few of the EU clusters.



• Discussions are on-going with Cargills and Keels for the domestic market and various other potential exporters.

Various other potential buyers have expressed their interest in collaborating with the PUCs, however, the biggest bottleneck remains the assured quantity and quality. Also, in few of the clusters like Pomegranate, Papaya and Vegetables, the harvest is expected in the upcoming months, leading to delay in facilitating the market linkages.

The biggest achievement through efforts from ISP is to bring visibility to the PUCs with potential buyers, understanding their requirements and creating initial linkages.

For details, please refer to report for milestone V.

3.6 NOTABLE INNOVATIONS INTRODUCED BY ISP

The following list summarises the innovations introduced by the ISP.

- 1. High density double row production systems with intercropping.
- 2. Low pressure irrigation (drip tape and mini sprinklers).
- 3. Fertigation based on soil testing.
- 4. Macro and micro drainage practices.
- 5. Modern intensive production systems for short term crops (vegetables):
 - a. Improved land preparation.
 - b. High raised planting beds.
 - c. Drip tape irrigation.
 - d. Agricultural plastics that eliminate the need for toxic herbicides and decrease evapotranspiration.
 - e. High density planting.
- 6. IPM practices that begin at land preparation and include minimal use of pesticides.
- 7. Improved harvesting practices for fruits based on coloured bagging.
- 8. Fruit desk harvest management based on actual fruit inventories in the field that create accurate production forecasts many weeks before the harvest.
- 9. Post-harvest technology and handling practices that preserve quality and shelf life.
- 10. Design and implementation of modern packing lines and packing facilities.
- 11. Cold chain infrastructure and management.
- 12. Export protocols for fresh produce.
- 13. The use of reefer containers to export large quantities of fresh produce at one time.
- 14. Business management as farmer company

4. CLUSTER-WISE PROGRESS

4.1 MATALE

4.1.1 Mango Cluster (Dambulla)

S. No.	Particular	Details		
1	CROP AND VARIETY	MANGO (TJC VARIETY)		
			Farmers	Acreage (Acres)
		TOTAL TARGET	228	125
		ISP Farmers (A)	228	125
		Pilot/ Existing Farmers (B)	193	317
		PROJECT BENEFICIARIES (A+B)	421	442
2	Beneficiaries and Acreage	Other Farmers (Self-Funded) (C)	146	100
		TOTAL BENEFICIARIES OF ISP TECHNOLOGY PACKAGE (A+B+C)	567	542
		Remark: Original target was 200 farmers with 375 acres of land. This was revised to 228 farmers and 125 acres. However, including the existing farmers and self-funded farmers, ISP have disseminated the technology practices to 567 farmers holding 542 acres of land.		
3 Yield		Expected: 126 MT/ Hectare ~ Cur 51 MT/ Acre MT	r rent: 50 MT/ H / Acre	ectare ~ 20
	Yield	Remark: The expected yield in the CDP is much higher than the current yield due to much higher population densities (560 plants per Acre vs 160) used in the new plantings; higher fruit weight from proper irrigation and fertigation and other ISP agronomic practices; a larger number of fruits produced per tree per season due to improved modern pruning practices and better fruit quality from the application of the ISP quality enhancing practices for mango.		
4	Harvest Cycle	May to March; Peak time is November – January		
Post Harve 5 and Packa (PHPPC)		 PHPPC Proposal, Engineering Designs, Business Model and Technical Specifications for the equipment submitted. Installed and commissioned under supervision of ISP experts 		
	Post Harvest Processing and Packaging Centre	Remark:		
	(PHPPC)	 The building for permanent PHPI established as temporary facility As on 15th February 2024, facility non-harvesting season for Mandirectly to local collectors. 	PC is yet to be c in the rented p is non-operati goes and Guav	onstructed; premises. onal due to as are sold

		For details, please refer to report for milestone VII.5	
	Name of Public Enlisted Company (PUC)	Registered	
		Name: Ceylon Rangiri Agri Products Limited	
		• Registration Number: PB 00265395	
6		• <i>Status:</i> Operational; selling colour bags, Paclobutrazol, fertilizers, renting machinery. Small quantities of Mango were sold through PUC during harvesting in Oct- Dec 2023.	
		Remark: For detailed status on shareholding, bank account balance, operations, challenges, recommendations, please refer to report for milestone VIII.	
		Dropped	
7	Compost Production Unit	Remark: As communicated during the SC meeting on 27 th September 2023, due to unavailability of suitable land the compost production units were dropped from Central Province.	
		Refer Board Paper #3, SC Meeting # 19.	
	Market Linkages	PUC is having connections with few exporters and made few sales too. Some buyers also visited PUC to collect orders and other sales was made through Dambulla market.	
		Retail Buyers: Discussions with Keels, Cargills & Arpico	
9		Exporters: S.R. Bio foods, Green Farm Ltd, Tropical Ltd., Serandib Global Ltd.	
		Recently sold to Ellawala Horticulture, however the rain impacted quality deterioration distanced them from Exporters. There are strong opportunities to connect with exporters when good quality harvest come later this year	
	Specific Issues and Challenges	This mango Cluster can offer good mango volumes to the export market because it has good areas under production (old and new plantings) and the PUC is well organized and managed. Key challenges are:	
10		 Inconsistent Quality; Anthracnose and Mealy Bugs significantly affect quality. Poor field sanitation affecting the quality of mangoes. Delay in construction of elephant fence leading to destruction of well-established crops by wild elephants Delay in payment for rented space for PHPPC by PMU Poor production forecasting, affecting the time frame of marketing and selling of mangoes. PUC have very high price expectations from exporters in Sri Lanka as compared to market prices and forecasting 	
11	Recommendations	 Farmers in this Cluster need to apply the recommended practices in the ISP technology package with special emphasis on quality practices such as the control of 	



	Anthracnose and Mealy Bugs. Anthracnose control
	practices must begin at flowering time.
	• Bagging with coloured bags needs to be applied properly
	and the Fruit Desk must become more efficient in
	managing the fruit inventory, including accounting for fruit
	lost in the field. The expansion of the Espalier Trellis
	production system should facilitate these practices.
	• Proper drainage, irrigation and fertigation are needs that
	must be addressed through closer supervision and
	training.
	• Training on the operation and maintenance of the ASMP
	low pressure irrigation systems is a priority.
	Construction of permanent PHPPC is a priority
	• Handholding support on the PUC operations (marketing,
	sales, contracts, auditing, farmer payments, etc)

4.1.2 Mango Cluster (Laggala)

S. No.	Particular	Details		
1	Crop and Variety	MANGO (TJC VARIETY)		
			Farmers	Acreage
		Total Target	200	100
		ISP Farmers	75*	0
2	2 Beneficiaries and acreage	 Remark: Initially ISP had selected 170 farmers for MD-2 Pineapple, however, due to change in crop by MoA leading to change in areas, the complete activity of farmer selection is being repeated and after confirmation on crop by MoA on 30th October 2023 only 75 farmers could be selected till 23rd Jan 2024. No planting done till date, because of unavailability of planting material. Due to change in crop some farmers have dropped out as lands are not suitable for Mango and as such cluster area has been extended to adjoining Wigamuwa Divisional Secretariat area. Initially the target was 300 farmers, however, due to unavailability of planting material in the country, the 		
3	Yield	Expected: 126 MT/ Hectare ~ 51 MT/ Acre	rent: Not Appl	icable
4	Harvest Cycle	May to March; Peak time is Novem	ber – January	
5	Post Harvest Processing and Packaging Centre (PHPPC)	 PHPPC Proposal, Layout Design Technical Specifications for the To be established by PMU engi 	, Business Moo equipment su neers	del and Ibmitted.

		Remark:	
		• Since ISP was required to supervision the implementation of only seven facilities, it was agreed with PMU to establish one facility per district and others will be done by PMU engineers.	
		Registered	
		Name: Lak Golden Mango Limited	
		Registration Number: PB 00279366	
		Status: Non-Operational	
		Remark:	
6	Name of Public Enlisted Company (PUC)	• Since the cluster was changed by MoA from MD-2 Pineapple to Mango and confirmed to ISP on 30 th October 2023, the board members have been identified and in- process of formally getting registered.	
		• The share capital collection, bank account opening, and activities will start once the board members are registered.	
		For details, please refer to report for milestone VIII	
		Dropped	
7 Compost Production Unit		Remark: As communicated during the SC meeting on 27 th September 2023, the compost production units were dropped from Central Province due to unavailability of suitable land.	
		Refer Board Paper #3, SC Meeting # 19	
9	Market Linkages	The production will take atleast three years, subject to planting material facilitated to farmers on time. Therefore, same buyers could be approached one for Dambulla.	
10	Specific Issues and Challenges	 Unavailability of planting material and delay in establishing irrigation infrastructure Pending approval from Mahaweli authority to undertake mango plantations in the region. For the profitable options of PUC, it is very important to follow the production plan of ISP to have enough production of optimum utilization of the PHPPC. 	
11	Recommendations	 Immediate facilitation of planting material and approval from Mahaweli authority. Deputation of team of extension officers on guiding the farmers to implement ISP technology package. Establish the PHPPC for PUC to learn the operations and build working capital to renting the facility. Handholding of PUC to commence selling of agriculture inputs and renting the PHPPC to build working capital 	

4.1.3 Guava Cluster (Dambulla)

S. No.	Particular	Details		
1	CROP AND VARIETY	GUAVA (APPLE GUAVA)		
			Farmers	Acreage
		TOTAL TARGET	200	100
2	Ronoficiarios and acroage	ISP Farmers (A)	200	100
2	Denendaries and as cage	Other Farmers (Self-Funded) (B)	133	145
		TOTAL BENEFICIARIES OF ISP TECHNOLOGY PACKAGE (A+B)	333	245
3	Yield	Expected: 67 MT/ Hectare ~ Cu 27.1 MT/ Acre MT	r rent: 50 MT/ H 7/ Acre	lectare ~ 20
4	Harvest Cycle	Round the year		
		 PHPPC Proposal, Engineering Designs, Business Model and Technical Specifications for the equipment submitted. Installed and commissioned under supervision of ISP experts 		
5 and Pack (PHPPC)	Post Harvest Processing and Packaging Centre (PHPPC)	 Remark: The building for permanent PHPPC is yet to be constructed; established as temporary facility in the rented premises. As on 15th February 2024, facility is non-operational due to non-harvesting season for Mangoes and Guavas are sold directly to local collectors. 		
		For details, please refer to report f	or milestone VI	1.5
	Name of Public Enlisted Company (PUC)	• Name: Sigiri Guava Limited		
		Registration Number: PB 00272079		
6		 Status: Operational; selling colour bags, guava plants, fertilizers, renting machinery. Small quantities were sold to institutional buyers. Most of the produce is sold to local collection agents due to high local prices 		
		Remark: For detailed status on shareholding, bank account balance, operations, challenges, recommendations, please refer to report for milestone VIII		
7	Compost Production Unit	Dropped		
		Remark: As communicated durin September 2023, the compost proc from Central Province due to unav	g the SC meet luction units we ailability of suit	ing on 27 th ere dropped table land.

		Refer Board Paper #3, SC Meeting # 19	
		PUC is having connections with few exporters and made few sales too. Some buyers also visit to PUC to take order and other sales is through Dambulla market.	
		Retail Buyers: Discussions with Keels, Cargills & Arpico	
		<i>Exporters:</i> S.R. Bio foods, Northern exporters, Green Farm Ltd, Tropical Ltd., Serandib Global Ltd.	
9	Market Linkages	Recently sold to Northern Exporters and Green Farm Ltd	
		One of the challenges in facilitating linkages with the exporter is the high prices in the local market as compared to export markets. International markets have a big competition from India, Vietnam, and Thailand, which makes it difficult for an export to offer high prices to Sri Lankan farmers after adding the logistics cost.	
10	Issues and Challenges	 The major agronomic challenge in this guava Cluster is the procurement of nematode free planting material, together with mixing of varieties in a few fields resulting in odd-shaped fruit. Fortunately, the variety mixing is not a major problem presently and has been addressed by the supply of certified planting material to the farmers to replace trees with odd-shaped fruit. Proper drainage, irrigation and fertigation are needs that must be addressed through closer supervision and training. Training on the operation and maintenance of the ASMP low pressure irrigation systems is a priority. Construction of six agro-wells and provision of solar water pumps delayed for long. Implementation of proper pruning Institutionally, the PUC has not solidified and working as a united PUC has been a challenge for the farmers. 	
11	Recommendations	 A larger number of DoA certified nurseries to supply planting material to the Cluster is required. Bagging with coloured bags needs to be applied properly and the Fruit Desk must become more efficient in managing the fruit inventory, including accounting for fruit lost in the field. The expansion of the Espalier Trellis production system should facilitate these practices. Training in the proper operation and maintenance of the introduced low pressure irrigation systems and the proper application of the ISP fertigation protocol is also highly necessary. Handholding support on the PUC operations (marketing, sales, contracts, auditing, farmer payments, etc) Improved participation and support from PPMU, especially to increase the membership of PUC and increased farmer mobilization. 	

4.2 BATTICALOA

4.2.1 Pomegranate Cluster (Chankelady)

S. No.	Particular	Details		
1	CROP AND VARIETY	POMEGRANATE (BHAGWAN)		
			Farmers	Acreage
		Total Target	150	75
2		ISP Farmers (Selected)	150	75
2	Beneficiaries and acreage	Remark: Out of 150 farmers, 63 farmers in phase I have completed the plantation on 31.5 acres and 37 farmers from phase II have completed the land preparation. Other 50 farmers in phase 3 will commence the activity soon.		
3	Yield	Expected: 44.5 MT/ Hectare ~ Cur 18 MT/ Acre from	rent: Harvest i. n March 2024	s expected onwards
4	Harvest Cycle	May to October		
Post Harvest P 5 and Packaging (PHPPC)	Post Harvest Processing	 PHPPC Proposal, Layout Design, Business Model and Technical Specifications for the equipment submitted. To be established by PMU engineers 		
	and Packaging Centre (PHPPC)	Remark: Since ISP was requ implementation of only seven faci PMU to establish one facility per o done by PMU engineers.	ired to sup lities, it was a district and oth	ervise the greed with ners will be
		Registered		
		Name: Sun East Pomegranate Agro Limited		
		• Registration Number: PB 0027	4426	
		Status: Non-Operational		
6	Name of Public Enlisted	Remark:		
		• Harvesting the expected from I	March 2024 on	wards.
		• PUC is not undertaking any other activity and is keen to start the nursery business for which the proposal has been submitted to PMU.		
		For details, please refer to report fo	or milestone VI	11
		Not Established		
7 (Compost Production Unit	Remark: Despite of various follow-ups by ISP from PMU and PPMU, there was no action on land selection and/ or procurement of raw material. The matter was flagged with SC on 27 th September 2023, still could not be receive any promising response.		
		The matter was then flagged in the during RC meeting on 16 th Decembe	monthly progr er 2023 and wo	ess reports, as admitted

		by PMU's Agronomist on various challenges in procurement of raw material or land selection. Therefore, task could not be completed due to factors beyond ISP's control.	
		Documentary evidence attached as annexure 8.4	
9	Market Linkages	plantation under ASMP is targeted to substitute imports in the country. ISP has been in contact with local supermarkets i.e., Cargills and Keels who have expressed their high interest on the crop. However, tangible market linkage could only be realized only once the crop is ready for harvest and the buyer are confident on the quality, quantity, and pricing.	
10	Specific Issues and Challenges	Pomegranate is a very promising crop for farmers in Batticaloa. This crop was chosen by the Project to be located near the seashore, in the Northern and Eastern Provinces, to benefit from the mild, Mediterranean type, micro-climate created by the sea breeze that helps in lowering the incidence of fungal diseases and allows for the optimum development of the pomegranate fruit. However, such locations have very sandy soils that are low in fertility. In addition, these soils have very low water retention. The water and fertilizer management of these soils is therefore the major agronomic issue facing these farmers. Deficiencies of Magnesium and micronutrients such as Sulphur, Copper and Zinc are always a threat. In addition, the irrigation water has sediments that constantly block the filters used to clean the irrigation water. Anthracnose has also been a negative factor affecting the quality of the fruit and fruit flies and other fruit insect pests have the potential to do the same. Supply of planting material of was irregular leading to impact	
		of completion of targets farmers. Also, there were long delays in establishment of irrigation infrastructure and supply of fertilizers/ micronutrients, leading to poor growth of the crop.	
11	Recommendations	 The recommended irrigation and fertigation regimes must be followed. Water and nutrients must never be lacking. The mini weather stations installed by the Project in every Cluster will contribute greatly to applying the right amounts of water. Fertilizers for fertigation must be available and always used. Proper Anthracnose control must be practiced as recommended by the ISP, beginning at flowering time. Timely bagging of the fruit must be practiced as well to prevent fruit damage by insect pests. Continued supervision by extension officers of DoA is very important for the success of the cluster. They key supermarkets have already expressed their interest in crop. 	
4.2.2 Pomegranate Cluster (Kalawanchikudy)

S. No.	Particular	Details			
1	CROP AND VARIETY	POMEGRANATE (BHAGAWAN VARIETY)			
			Farmers	Acreage	
		Total Target	150	75	
		ISP Farmers (Selected)	128	64	
		Remark:			
2	Beneficiaries and acreage	 In total only 128 farmers have been selected (50 in phase 1, 50 in phase 2 and 28 in phase 3). There has been a difficulty in reaching the target of 150 farmers because of limited land availability in the region. Out of selected 128 farmers, 73 farmers have already planted in area of 36.5 areas and 21 farmers have completed the land preparation. 			
3	Yield	Expected: 44.5 MT/ Hectare ~ Cur 18 MT/ Acre from	r rent: Harvest is m March 2024	s expected onwards	
4	Harvest Cycle	May to October			
5	Post Harvest Processing and Packaging Centre (PHPPC)	 PHPPC Proposal, Layout Design, Business Model and Technical Specifications for the equipment submitted. To be established by PMU engineers <i>Remark: Since ISP was required to supervise the</i> <i>implementation of only seven facilities, it was agreed with</i> <i>PMU to establish one facility per district and others will be</i> <i>done by PMU engineers</i>. 			
		Registered			
		Name: Kaluwanchikudi Agri Village Limited			
		Registration Number: PB 00265267			
		Status: Non-Operational			
6	Name of Public Enlisted Company (PUC)	Remark:			
		• Harvesting is expected from March 2024 onwards.			
		• PUC is not undertaking any other activity and recently started trading of coconut on pilot basis.			
		For details, please refer to report for milestone VIII			
		Not Established			
7	Compost Production Unit	Remark: Despite of various follow- PPMU, there was no action on procurement of raw material. The SC on 27 th September 2023, still promising response.	ups by ISP from land selectio matter was fl could not be r	n PMU and n and/ or agged with receive any	

		The matter was then flagged in the monthly progress reports, during RC meeting on 16 th December 2023 and was admitted by PMU's Agronomist on various challenges in procurement of raw material or land selection. Therefore, task could not be completed due to factors beyond ISP's control.			
		Pomegranate has a high demand in the local market and			
9	Market Linkages	the country. ISP has been in contact with local supermarkets i.e., Cargills and Keels who have expressed their high interest on the crop. However, tangible market linkage could only be realized only once the crop is ready for harvest and the buyer are confident on the quality, quantity, and pricing.			
10	Issues and Challenges	 are confident on the quality, quantity, and pricing. Pomegranate is a very promising crop for farmers in Batticaloa. This crop was chosen by the Project to be located near the seashore, in the Northern and Eastern Provinces, to benefit from the mild, Mediterranean type, microclimate created by the sea breeze that helps in lowering the incidence of fungal diseases and allows for the optimum development of the pomegranate fruit. However, such locations have very sandy soils that are low in fertility. In addition, these soils have very low water retention. The water and fertilizer management of these soils is therefore the major agronomic issue facing these farmers. Kalawanchikudy soils are a little better texture wise than those found in Chankelady. Nevertheless, deficiencies of Magnesium and micronutrients such as Sulphur, Copper and Zinc are always a threat. In addition, the irrigation water has sediments that constantly block the filters used to clean the irrigation water. Anthracnose has also been a negative factor affecting the quality of the fruit and fruit flies and other fruit insect pests have the potential to do the same. Small land extend per farmer in the area makes difficult to select more farmers in the area. 			
11	Recommendations	 The recommended irrigation and fertigation regimes must be followed. Water and nutrients must never be lacking. The mini weather stations installed by the Project in every Cluster will contribute greatly to applying the right amounts of water. Fertilizers for fertigation must be available and always used. Proper Anthracnose control must be practiced as recommended by the ISP, beginning at flowering time. Timely bagging of the fruit must be practiced as well to prevent fruit damage by insect pests. 			

• Farmer selection should be limited to 100 farmers in this cluster and rest should be selected in Karadiyan Auru area of the Chenkalady cluster.
Continued supervision by extension officers of DoA is very important for the success of the cluster. They key supermarkets have already expressed their interest in crop.

4.2.3 Banana Cluster (Velavelly)

S. No.	Particular	Details			
1	CROP AND VARIETY	BANANA (CAVENDISH VARIETY)			
				Farmers	Acreage
		Total Target		500	250
2	acreage	ISP Farmers (Selected)		480	240
		Remark: In total 480 farmers have planted in area of 157 acres.	e bei	en selected and	d 314 have
		Expected: 50 MT/ Hectare ~ 20.23 MT/ Acre	Expected: 50 MT/ Hectare ~ Current: 45MT/ Hectare ~ 20.23 MT/ Acre MT/ Acre		
3	Yield	Remark: The expected yield in the CDP is much higher than the current yield due to higher population densities (971 plants per Acre vs 680) used in the new plantings; higher banana bunch weight from proper irrigation and fertigation and other ISP agronomic practices; less field losses; better fruit quality from the application of the ISP quality enhancing practices for bananas			
4	Harvest Cycle	Round the year			
5	Post Harvest Processing and Packaging Centre (PHPPC)	 PHPPC Proposal, Engineering Technical Specifications for the ISP's involvement into the commissioning is very limited <i>buyer</i>) intends to establish five <i>one as per ISP model</i>) with ver packaging customized to their from the model proposed by Lanka is one of the biggest b project wanted to accommoda with the PMU that ISP will of tasks and avoid any interferent systems during commissioning <i>For details, please refer to report f</i> 	Desi e eq co bec e coll ery b nee the uyer ate t comp nce i g.	gns, Business uipment subm mmissioning ause Dole Lan ection centres basic non-multi ds. This is total ISP, however, rs in the count he request, it polete all the p n the work of	Model and itted. and post- ka <i>(current (instead of</i> -functional ly different since Dole try and the was agreed preparatory Dole Lanka
		Remark: The current collection ce temporary facility and procurem permanent sites.	entre ent	has been esta process is una	ablished as derway for

6	Name of Public Enlisted Company (PUC)	Registered
		Name: Porathevupattu Agro Paradise Banana Limited
		• Registration Number: PB 00281590
		Status: Operational
		Remark: Selling about 3000-4500 kgs/ week to Dole and contract signed.
		Not Established
7	Compost Production Unit	Remark: Despite of various follow-ups by ISP from PMU and PPMU, there was no action on land selection and/ or procurement of raw material. The matter was flagged with SC on 27 th September 2023, still could not be receive any promising response. The matter was then flagged in the monthly progress reports, during RC meeting on 16 th December 2023 and was admitted by PMU's Agronomist on various challenges in procurement of raw material or land selection. Therefore, task could not be completed due to factors beyond ISP's control.
		Documentary evidence attached as annexure 8.4
9 Market Linkages		ISP is also facilitating linkages with other buyers for surplus quantities with Ceylon Fresh and Serendib Global.
10	Issues and Challenges	Cavendish bananas is a major export crop for Sri Lanka for the Middle East market. Dole Lanka, the largest exporter, does not have enough volumes to satisfy the market demand and is always looking for more growers to provide additional volumes of high-quality fruit. Nevertheless, banana cultivation has had many challenges in Batticaloa, beginning with proper land preparation and, most importantly, proper drainage which has been a limiting factor from the beginning at Vela Velly. Fungal diseases such as Black Sigatoka and Verticillium Cigar End Rot have affected productivity and quality as well. In general, the technology package recommended by the ISP for high productivity and quality has not been properly implemented, especially quality practices dealing with bunch care to create and preserve quality. Another area of concern relates to field losses of mother plants with fruit due to lack of protection through proper propping and guying. Delay in establishing elephant fence leading to frequent elephant attack on well-established crops. Delay in establishment of agro-well led to death of more than 25000 suckers planted in the field during period Feb – Oct 2023. Erratic supply of planting material by supplier led to loss of confidence among farmers
11	Recommendations	 Rule number one in banana cultivation is drainage. Much work needs to be done in Vela Velly to achieve the drainage level bananas required at the farm level.

	 Proper irrigation and fertigation are needs that must be addressed as well through closer supervision and training. Training on the operation and maintenance of the ASMP low pressure irrigation systems is a priority. Tagging with coloured ribbons for age control at harvest needs to be applied properly and the Fruit Desk must become more efficient in managing the fruit inventory, including accounting for fruit lost in the field and fruit sold
	to the local market.
	 Bunch quality practices must be applied weekly as well as IPM practices to prevent Sigatoka and other pests and diseases.
	• Fill in the vacancies in the established plantation using grown up suckers available in harvesting area.
	• Complete the irrigation infrastructure before expanding to new areas.
	 Supply solar water numps
	 Establish aerial support systems, atleast as demonstrations

4.3 MONARAGALA

4.3.1 Banana Cluster (Sevenagala)

S. No.	Particular	Details		
1	Crop and Variety	BANANA (CAVENDISH)		
			Farmers	Acreage (Acres)
2	Beneficiaries and acreage	Total Target	500	250
		Active Farmers (Selected and Planted)	500	250
		Expected: 50 MT/ Hectare ~ C 20.23 MT/ Acre	urrent: 40 MT/ H 1T/ Acre	ectare ~ 16
3	Yield	Remark: The expected yield in the the current yield due to higher plants per Acre vs 680) used in banana bunch weight from prop and other ISP agronomic praction fruit quality from the application practices for bananas	he CDP is much h r population der n the new plantin per irrigation and ces; less field los of the ISP quality	nigher than hsities (971 hgs; higher fertigation hses; better enhancing
4	Harvest Cycle	Round the year		
5	Post Harvest Processing and Packaging Centre (PHPPC)	 PHPPC Proposal, Engineering Designs, Business Model and Technical Specifications for the equipment submitted. Installed and commissioned under supervision of ISP experts. 		



		Remark:		
		 The building for permanent PHPPC is yet to be constructed; established as temporary facility. The facility is operational, selling to Cargills and Keels 		
		For details, please refer to report for milestone VII.5		
		Registered		
		Name: King Banana Sevangala		
	Name of Public Enlisted	• Registration Number: PB 00268165		
6	Company (PUC)	• Status: Operational; selling to Cargills and Keels.		
		Remark: For detailed status on shareholding, bank account balance, operations, challenges, recommendations, please refer to report for milestone VIII		
		Dropped		
7	Compost Production Unit	Remark: Despite of various follow-ups by ISP from PMU and PPMU, there was no action on land selection and/ or procurement of raw material. The matter was flagged with SC on 27 th September 2023, still could not receive any promising response/support.		
		The matter was also flagged in the monthly progress reports, during RC meeting on 16 th December 2023 and was admitted by PMU's Agronomist on various challenges in procurement of raw material and/ or land selection. Therefore, task could not be completed due to factors beyond ISP's control.		
		Documentary evidence attached as annexure 8.4		
9	Since depending on one buyer is not a sustainable model, IS has connected the PUC with various other potential buyers SR Bio Foods had expressed their interest to purchas sweeping lot i.e., all grades with volumes of 10,000 – 12,00 Kg/ week. However, PUC had very high expressions on th price and reduced the offer. Currently, in discussion wit Dole.			
10	Cavendish bananas is a major export crop for Sri Lanka Middle East market. Dole Lanka, the largest exporter not have enough volumes to satisfy the market demar is always looking for more growers to provide add volumes of high-quality fruit. Nevertheless, b cultivation has had many challenges in Monar beginning with proper land preparation and, importantly, proper drainage which has been a limiting from the beginning. Proper irrigation and fertigation been severely lacking. Fungal diseases such as Black Sig and Verticillium Cigar End Rot have affected productivit quality as well. In general, the technology par recommended by the ISP for high productivity and qual not been properly implemented, especially quality pro-			

		dealing with bunch care to create and preserve qua Another area of concern relates to field losses of mot plants with fruit due to lack of protection through pro			
		propping and guying. Tagging and forecasting technology has not been practiced adequately, leading to over ripening of the fruit and other quality issues. Also, there is no forecast data available for buyers from the Fruit Desk.			
		Other non-agronomic issues affecting the Cluster are:			
		 PUC not open to explore partnership with various buyers. Very high expectations on the price. PUC is not clear on the establishment of permanent PHPPC and handing over mechanism for assets. No handholding on business management of PUC till date 			
		 More than 2700 of Banana plants died due to drought prevail in the middle of the year 2023 (due to non- availability of irrigation water) 			
11	Recommendations	 Proper irrigation and fertigation are priority needs that must be addressed as well through closer supervision and training. Training on the operation and maintenance of the ASMP low pressure irrigation systems is a priority. Much work needs to be done in Sevanagala to achieve the drainage level bananas required at the farm level. Tagging with coloured ribbons for age control at harvest needs to be applied properly and the Fruit Desk must become more efficient in managing the fruit inventory and providing production forecasting data, including accounting for fruit lost in the field and fruit sold to the local market. Bunch quality practices must be applied weekly as well as IPM practices to prevent Sigatoka and other pests and diseases. Field losses of mother plants with fruit must be avoided at all costs through proper propping and guying. 			

4.3.2 Mango Cluster (Siyambalanduwa)

S. No.	Particular	Details		
1	CROP AND VARIETY	MANGO (TJC)		
			Farmers	Acreage
2	Beneficiaries and acreage	TOTAL TARGET	200	100
		ISP Farmers	200	100

		Pilot Farmers		40	40
		Remark: Initial target was 200 farmers with 100 acres of lar However, ISP achieved 240 farmers with 140 acres of land.			res of land. s of land.
		Expected: 126 MT/ Hectare ~ Current: 40 MT/ Hectare ~ 16 MT/ Acre			ectare ~ 16
3	Yield	Remark: The expected yield in the CDP is much higher than the current yield due to much higher population densities (560 plants per Acre vs 160) used in the new plantings; higher fruit weight from proper irrigation and fertigation and other ISP agronomic practices; a larger number of fruits produced per tree per season due to improved modern pruning practices and better fruit quality from the application of the ISP quality enhancing practices for mango			
4	Harvest Cycle	May to March; Peak time is Nov	emb	per – January	
5	Post Harvest Processing	 PHPPC Proposal, Layout De Technical Specifications for To be established by PMU e 	esig the ngir	ns, Business I equipment su neers	Vodel and bmitted.
	and Packaging Centre (PHPPC)	Remark: Since ISP was re implementation of only seven f PMU to establish one facility pe done by PMU engineers.	equii facili er d	red to supe ities, it was a istrict and oth	ervise the greed with hers will be
		Registered			
		Name: Siyambalanduwa Agro Products Limited			
		Registration Number: PB 00268165			
6	Name of Public Enlisted Company (PUC)	 Status: Operational; selling cover bags. In the previous seasons, it was direct sales of Mangoes by farmers to collection agents majorly due to quality issues because of rainfall during peak season and was not exportable quality 			e previous farmers to es because exportable
		Remark: For detailed status on balance, operations, challenges refer to report for milestone VIII	sha s, re	reholding, bai ecommendatio	nk account ons, please
		Dropped			
7	Compost Production Unit	Remark: Despite of various follow-ups by ISP from PMU and PPMU, there was no action on land selection and/ or procurement of raw material. The matter was flagged with SC on 27 th September 2023, still could not receive any promising response/ support.			
		The matter was also flagged in t during RC meeting on 16 th Decer by PMU's Agronomist on variou of raw material and/ or land sel not be completed due to factors	he r nbe Is ch lecti bey	nonthly progra r 2023 and wa nallenges in pr on. Therefore, vond ISP's cont	ess reports, is admitted ocurement task could trol.

		Documentary evidence attached as annexure 8.4
		Potential buyers are Lanka Canneries (Grade 3 and below), Development Interplan and Serendib Global.
9	Market Linkages	Heavy raining during Dec/Jan badly impacted the peak of the production making it was nearly impossible to reach some farms and fruit quality deterioration. Working with the identified buyers to connect in the next season post May.
10	Specific Issues and Challenges	Mango volumes for the export market are increasing in this Cluster as new plantings come into production and the PUC is well organized and managed. Their main challenge is the quality of the mango. Anthracnose and Mealy Bugs significantly affect quality. Production forecasting is also a major issue affecting the time frame of marketing and selling of the mango.
11	Recommendations	 The recommended practices in the ISP technology package need to be applied with special emphasis on quality practices such as the control of Anthracnose and Mealy Bugs. Anthracnose control practices must begin at flowering time. In addition, bagging with coloured bags needs to be applied properly and the Fruit Desk must become more efficient in managing the fruit inventory, including accounting for fruit lost in the field. The expansion of the Espalier Trellis production system should facilitate these practices. Proper drainage, irrigation and fertigation are needs that must be addressed through closer supervision and training. Training on the operation and maintenance of the ASMP low pressure irrigation systems is a priority. In addition, priority should be given to Pruning for architecture of the trees as well as for production Fill in vacancies caused due to droughts. Expansion of cultivation to meet the market demand

4.4 JAFFNA

4.4.1 Banana Cluster

S. No.	Particular	Details		
1	Crop and Variety	BANANA (AMBUL)		
			Farmers	Acreage
		Total Target	500	250
2	Beneficiaries and	Existing Farmers	472	250
	acreage	New Farmers	61	31
		Total Achieved	533	281
3	Yield	Expected: 50 MT/ Hectare ~ Cu 20.23 MT/ Acre M [*]	rrent: 32 MT/ ⊦ ī/ Acre	lectare ~ 15



		Remark: The expected yield in the CDP is much higher than the current yield due to higher population densities (971 plants per Acre vs 680) used in the new plantings; higher banana bunch weight from proper irrigation and fertigation and other ISP agronomic practices; less field losses; better fruit quality from the application of the ISP quality enhancing practices for bananas. Low production is also due to some farmers still managing crop with organic manures as original plan of the cluster.
4	Harvest Cycle	Round the year crop
		 PHPPC Proposal, Engineering Designs, Business Model and Technical Specifications for the equipment submitted. Installed and commissioned under supervision of ISP experts
		Remark:
5	Post Harvest Processing and Packaging Centre (PHPPC)	 Installed and commissioned under supervision of ISP experts Remark: The building for permanent PHPPC is under construction and currently established as temporary facility in the rented premises. As on 15th February 2024, facility is non-operational due to non-harvesting season for Mangoes and Banana farmers are not practicing ISP technology practices, leading to pool quality for exports. For details, please refer to report for milestone VII.5 Registered Name: Jaffna Organics Farmers Company Limited Registration Number: PB 00273052
		• As on 15 th February 2024, facility is non-operational due to non-harvesting season for Mangoes and Banana farmers are not practicing ISP technology practices, leading to poor quality for exports.
		For details, please refer to report for milestone VII.5
		For details, please refer to report for milestone VII.5Registered
		Name: Jaffna Organics Farmers Company Limited
		Registration Number: PB 00273052
		 Name: Jaffna Organics Farmers Company Limited Registration Number: PB 00273052 Status: Active; recently board members have be replaced due to non-performance.
6	Name of Public Enlisted Company (PUC)	 The capital is collected through contribution of farmers for various services/ products offered by PUC like ladders, bags, irrigation pumps, etc.
		 To commence the trade of Bananas through PUC, there is a need for handholding the PUC and motivating the farmers to practice the ISP technology package and sell through the PUC
		Remark: For detailed status on shareholding, bank account balance, operations, challenges, recommendations, please refer to report for milestone VIII
		Completed
7	Compost Production Unit	Remark: Considering the various challenges of establishing the commercial compost production yard in each cluster, it was agreed with RC and PMU to establish demonstration unit of 20 MT for production cycle, which can be scaled up by PMU/ PUCs at a later stage and defer the liquid fertilizer production facility.

1		
		The revised list of requirements was submitted to PMU on 6 th September 2023 and activity was undertaken on 14 th Oct 2023.
		The layout design of compost production shed was also submitted on 19 th Sep 2023.
		Dole Lanka and Ceylon Fresh Fields are connected to PUC as potential buyers.
		Ceylon Fresh Fields made a visit to Jaffna and Mullaitivu on the 14 th January 2024 and Dole Lanka is scheduled to meet project stakeholders on the 27 th Feb 2024 in Jaffna. They have recruited a field supervisor to engage in Jaffna cluster.
9	Market Linkages	For Banana, both Dole and Ceylon Fresh will engage and expected to have fullest support from the ASMP and PUC.
		According to the feedback from Ceylon Fresh, they have observed improvement in quality of production, however, the ribbon tagging is still not practices in many fields, making the forecasting very vague. They stressed that the farmers should be using the ISP technology package in full which is very important for export market.
10		The Ambul Banana Cluster in Jaffna was established to increase the market opportunities for this banana by adding export markets to the existing local market options in Jaffna. At the time the Cluster was established, farmers were complaining about the very low prices the market was paying for Ambul and the limited options they had to sell the fruit. In order to increase the marketability of the Jaffna Ambul banana in the international market, the Cluster was promoted and developed as a producer of "organic" bananas because of the organic nature of the existing cultivation, whereby only organic inputs such as fertilizers were used by the farmers from way back in time. The Cluster was also established to supplement Ambul volumes from Rajanganaya as a way to attract a larger number of potential exporters to Jaffna.
	Specific Issues and Challenges	Notwithstanding the above reasoning and justifications, Ambul banana cultivation has had many challenges in Jaffna. Perhaps the most significant challenge was the farmers lost faith in the new ISP technology due to a procurement error related to the plastic bags to protect the fruit from damage. Out-of-specs bags with respect to the width of the bag (too narrow) and the size (too small) and pattern of the ventilation holes were issued to the farmers. These faulty bags caused great damage to the fruit to the point that the Jaffna market refused to buy bagged bananas from the Cluster farmers.
		The supervision, Cluster Coordinator, also lost faith in the ISP technology and was reluctant to work with the farmers to bring them back on the ISP technical track. After these happenings, it became very difficult to work with the PUC and the farmers on the introduction of new practices. The banana field

		supervision was also affected by the poor working relationship between the ISP staff and the PPMU staff. A spirit of teamwork and cooperation never developed. On top of this situation, there were serious delays in the supply of inputs. These state of affairs greatly affected the efforts in the field with the farmers.
		Other factors, such as the extreme height of the Ambul banana plants in Jaffna, made it difficult to implement bunch care quality practices such as deflowering, de-budding and de- handing and the coloured tagging of the bananas to control the age of the fruit at harvest time. Fungal diseases such as Black Sigatoka and Verticillium Cigar End Rot affected productivity and quality as well. These difficulties delayed the improvement of the export quality of the fruit. Farmers had to harvest many bunches to secure small volumes for export. Under this scenario, the cost of the Jaffna fruit became very high for willing exporters, and they became hesitant to work with the Jaffna PUC.
		In general, the technology package recommended by the ISP for high productivity and quality has not been properly implemented, especially quality practices dealing with bunch care to create and preserve quality. Another area of concern relates to field losses of mother plants with fruit due to lack of protection through proper propping and guying. The new double row banana plantings lacked proper land preparation and, most importantly, proper drainage.
		 Other challenges faced in the Jaffna Ambul banana Cluster were: Farmers not adopting the ISP technology package; poor quality harvest. No supervision by PPMU/ DoA officials Due to large distance from the port, buyers willing to trade only sizable quantities. Delay in transferring fund from society bank account to PUC bank account by PPMU and DoA
		The confidence of the farmers in the new technology needs to be restored to accelerate progress in the field in terms of quality and volumes that will be attractive for buyers to go to Jaffna to work with the PUC.
11	Recommendations	Practices such as bagging, bunch care and bunch tagging with coloured ribbons for age control at harvest need to be applied properly and quickly. The Fruit Desk must be re-established and must become more efficient in managing the fruit inventory, including accounting for fruit lost in the field and fruit sold to the local market. Bunch quality practices must be applied weekly as well as IPM practices to prevent Sigatoka and other pests and diseases.

4.4.2 Potato/ Onion Cluster

S. No.	Particular	Details			
1	Crop and Variety	POTATO (Red Lasorda) and ON	ION	(Manju Co-On	15)
				Farmers	Acreage
		Total Target		400	200
2	Beneficiaries and acreage	Selected Farmers		512	256
		Remark: Initial target was 500 J land holding.	farm	ners with 500 a	cres of
		Expected: 54 MT/ Hectare ~ 21.85 MT/ Acre (Potato)	Cur MT/	rent: 50 MT/ H [/] Acre (Potato)	ectare ~ 20
		20 MT/ Hectare ~ 8 MT/ Acre (Big Onion)	17 M (Big	MT/ Hectare ~ Onion)	7 MT/ Acre
3	Yield	Remark: The expected yield in the CDP is much higher than the current yield due to higher population densities (30,000 plants per Acre vs 14,000) used in the new plantings; higher tuber weight and numbers of tubers per plant from proper irrigation and fertigation and other ISP agronomic practices and better tuber quality from the application of the ISP quality enhancing practices for potatoes.			
4	Harvest Cycle	Potato: March- April	20.0	and August to	Octobor
	Post Harvest Processing	 Onion: Two Seasons: May to June and August to October PHPPC Proposal, Layout Design, Business Model and Technical Specifications for the equipment submitted. To be established by PMU 			
5	and Packaging Centre (PHPPC)	Remark: Since ISP was re implementation of only seven PMU to establish one facility per be done by PMU engineers.	equi faci r dis	ired to supe lities, it was a trict by ISP and	ervise the greed with I others will
		Registered			
		• Name: Ceylon Smart Poton	Far	mers Company	/ Limited
		• <i>Registration Number:</i> PB 00267818			
6	Name of Public Enlisted Company (PUC)	• <i>Status:</i> Active; renting farm equipment and selling agriculture inputs. Until previous year, farmers were selling the produce directly. This year farmers plan to sell through PUC.			and selling mers were plan to sell
		Remark: For detailed status on balance, operations, challenges refer to report for milestone VII	sha 5, rec 1	reholding, ban commendation	k account as, please
7	Compost Production Unit	Completed			



		Remark: Considering the various challenges of establishing the commercial compost production yard in each cluster, it was agreed with RC and PMU to establish demonstration unit of 20 MT for production cycle, which can be scaled up by PMU/ PUCs at a later stage and defer the liquid fertilizer production facility.
		The revised list of requirements was submitted to PMU on 6 th September 2023 and activity was conducted on 14 th Oct 2023.
		The layout design of compost production shed was also submitted on 19 th Sep 2023.
9	Market Linkages	The layout design of compost production shed was also submitted on 19th Sep 2023.Potatoes and Onions have a high demand in the local marked and plantation under ASMP is targeted to substitute import in the country. ISP has been in contact with local supermarkets i.e., Cargills and Keels who have expressed their high interest on the crop.Process is under-way to establish concrete market linkage close to the harvesting timelines. For now, Onion is expected to start harvesting in April and Potato season will be toward end of year.A remarkably high tech and advanced production technolog package was also introduced for Jaffna potatoes. Thi package was made up of the use of imported seed from the US and/or France, improved land preparation practice emphasizing surface drainage, high planting beds (0.5 m) drip tape irrigation with fertigation, plastic mulch, peripheral insect nets, yellow sticky traps and other IPM practices for the prevention and control of pests and diseases
		Process is under-way to establish concrete market linkages close to the harvesting timelines. For now, Onion is expected to start harvesting in April and Potato season will be towards end of year.
10		A remarkably high tech and advanced production technology package was also introduced for Jaffna potatoes. This package was made up of the use of imported seed from the US and/or France, improved land preparation practices emphasizing surface drainage, high planting beds (0.5 m), drip tape irrigation with fertigation, plastic mulch, peripheral insect nets, yellow sticky traps and other IPM practices for the prevention and control of pests and diseases.
	Specific Issues and Challenges	Low light penetration plastic mulch is used to prevent the greening of the tubers during their development and eliminates the need for "hilling" the planting beds which require labour at a high cost. In addition, by using soil testing to formulate fertilizer applications, a large reduction in fertilizer amounts was realized. The so called "Potato Formulation", an N-P-K mix, was replaced by a few required nutrients indicated by the soil test.
		Good internal drainage is still one of the greatest challenges remaining for the Potato Cluster farmers. When the height of the planting beds is not maintained at 0.5 m, potatoes suffer from more pests and diseases because of impeded internal drainage in the proximity of the tubers. Losses of tubers may occur from rotting and the quality of affected tubers is drastically reduced. Moreover, water accumulation spots, from faulty surface drainage practices in potato fields, always suffer tuber rots and several other pests and diseases. The proper use of yellow sticky traps is still lacking in many fields, leading to problems with the potato insects, particularly Thrips Micronutrients deficiency symptoms are often observed in potato fields in Jaffna.

11	Recommendations	Complete adherence to the ISP technology package, as a package, is necessary to realize the high yield potential of the introduced new ISP technology for potatoes. Of special importance is the application of the surface drainage practices contained in the ISP technology package.
		Storage facilities are required to protect harvested potatoes before they are marketed. A collection Centre to grade the potatoes for the market is also still lacking.

4.4.3 Mango Cluster

S. No.	Particular	Details		
1	CROP AND VARIETY	MANGO (TJC)		
			Farmers	Acreage
		TOTAL TARGET	300	150
		Selected Farmers (A)	164	82
2	Beneficiaries and acreage	Pilot/ Existing Farmers (B)	161	80
		TOTAL (A+B)	325	162
		Remark: Initially the target was 50 reduced to 300 farmers with 1 Currently, only existing plantation is	00 farmers an 50 acres of s harvesting	d was then plantation.
		Expected: 126 MT/ Hectare ~ 51 MT/ Acre Remark: The expected yield in the CDP is much higher the		lectare ~ 20
3	Yield	Remark: The expected yield in the the current yield due to much hig (560 plants per Acre vs 160) used in fruit weight from proper irrigation ISP agronomic practices; a larger r per tree per season due to im practices and better fruit quality fr ISP quality enhancing practices harvesting the pilot plantation and less as compared to new plant practice is poor.	CDP is much i gher population the new plant and fertigation proved mode om the applica for mango their plant den tation and m	higher than on densities ings; higher n and other ts produced rn pruning ation of the Currently sity is much paintenance
4	Harvest Cycle	May to March; Peak time is Novem	ber – January	
5	Post Harvest Processing and Packaging Centre (PHPPC)	 PHPPC Proposal, Engineering and Technical Specification submitted. Installed and commissioned u experts 	Designs, Busir s for the under supervi	ness Model equipment sion of ISP

		 The building for permanent PHPPC is under construction and currently established as temporary facility in the rented premises. As on 15th February 2024, facility is non-operational due to non-harvesting season for Mangoes and Banana farmers are not practicing ISP technology practices, leading to poor quality for exports. For details, please refer to report for milestone VII.5
		Registered
		 Name: Jaffna Mango Queen Farmers Limited
	Nome of Dublic Colleted	Registration Number: PB 00273025
6	Company (PUC)	Status: Inactive
		Remark: For detailed status on shareholding, bank account balance, operations, challenges, recommendations, please refer to report for milestone VIII
		Completed
7	Compost Production Unit	Remark: Considering the various challenges of establishing the commercial compost production yard in each cluster, it was agreed with RC and PMU to establish demonstration unit of 20 MT for production cycle, which can be scaled up by PMU/ PUCs at a later stage and defer the liquid fertilizer production facility.
		The revised list of requirements was submitted to PMU on 6 th September 2023 and activity was conducted on 15 th Oct 2023.
		The layout design of compost production shed was also submitted on 19 th Sep 2023.
		Serendib Global Trading, Sadaharitha Exports and Development Interplan Ceylon Ltd are connected as potential buyers.
0	MarketLinkages	Serendib Global Trading has issued a Letter of Intent expressing interest to collaborate with PUC close to harvesting times.
9	Warket Linkages	Since Mango harvest is expected from May onwards, any action from the potential buyers will delay until it is close to product availability.
		Logistics cost plays a pivotal role in Jaffna and therefore, PUC and the buyers need to understand the right pricing for sustainable linkages.
10	Specific Issues and Challenges	The mango Cluster in Jaffna is made up of old and new plantations. The old plantations were developed under an ASMP Pilot Project. The new plantations have been developed using the ISP technology package. The old plantations farmers complained from the beginning that the Project provided a mix of varieties in the planting material

		distributed to them. They were supposed to receive only the TJC mango. Because of this issue and for a long time, the farmers refused to work with the Project. This caused delays in the introduction of new ISP quality enhancing technology for existing plantations for this Cluster.
		The development of the new plantations was greatly delayed because of delays of more than a year in the procurement of TJC planting material and in the installation of the new mini sprinklers irrigation systems.
		However, mango volumes for the export market are increasing in this Cluster as new plantings come into production and the PUC gets better organized with better management. Their main challenge is the quality of the mango. Anthracnose and Mealy Bugs significantly affect quality. Production forecasting is also a major issue affecting the time frame of marketing and selling of the mango.
11	Recommendations	The recommended practices in the ISP technology package need to be applied in the new and old plantations with special emphasis on quality practices such as the control of Anthracnose and Mealy Bugs. Anthracnose control practices must begin at flowering time. In addition, bagging with coloured bags needs to be applied properly and the Fruit Desk must become more efficient in managing the fruit inventory, including accounting for fruit lost in the field. The expansion of the Espalier Trellis production system should facilitate these practices. Proper drainage, irrigation and fertigation are needs that must be addressed through closer supervision and training. Training on the operation and maintenance of the ASMP low pressure irrigation systems is a priority.

4.5 MULLAITIVU

4.5.1 Banana Cluster

S. No.	Particular	Details		
1	CROP AND VARIETY	BANANA (KOLLIKUTU)		
			Farmers	Acreage
2	Beneficiaries and acreage	Total Target	300	250
		Farmers Planted	93	46
		Remark: In year 2022, ISP had select due to unavailability of planting mo dropped and now the target farmer 500 to 300 by PMU in Jan 20	ted 500 farmer Iterial, half of t Is have been re 1024. At prese	s, however, the farmers duced from nt due to

		unavailability of planting material only 93 farmers have planted.	
3		Expected: 50 MT/ Hectare ~Current: 45 MT/ Hectare ~ 1820.23 MT/ AcreMT/ Acre	
	Yield	Remark: The expected yield in the CDP is much higher than the current yield due to higher population densities (971 plants per Acre vs 680) used in the new plantings; higher banana bunch weight from proper irrigation and fertigation and other ISP agronomic practices; less field losses; better fruit quality from the application of the ISP quality enhancing practices for bananas.	
4	Harvest Cycle	Throughout the year	
5	Post Harvest Processing	 PHPPC Proposal, Layout Design, Business Model and Technical Specifications for the equipment submitted. To be established by PMU engineers 	
5 and Packaging Centre (PHPPC)	(PHPPC)	Remark: Since ISP was required to supervise the implementation of only seven facilities, it was agreed with PMU to establish one facility per district with assistance from ISP and others by PMU engineers.	
		Registered	
		Name: Vanni Fresh Fruits Farmers Company Limited	
		Registration Number: PB 00268621	
6	Name of Public Enlisted Company (PUC)	<i>Status:</i> Active; the potential harvest is expected in Feb-March 2024 and PUC then plans to sell through the company. Currently due to low volumes, farmers were selling directly. PUC has started selling the inputs like fertilizers, seed trays, irrigations system, etc.	
		Remark: For detailed status on shareholding, bank account balance, operations, challenges, recommendations, please refer to report for milestone VIII	
		Completed	
7	Compost Production Unit	Remark: Considering various challenges in establishing the commercial compost production yard in each cluster, it was agreed with RC and PMU to establish demonstration unit of 20 MT for production cycle, which can be scaled up by PMU/ PUCs at a later stage and defer the liquid fertilizer production facility.	
		The revised list of requirements was submitted to PMU on 6 th September 2023 and activity was conducted on 16 th Oct 2023.	
		The layout design of compost production shed was also submitted on 19 th Sep 2023.	

9	Market Linkages	Kollikutu Banana is always a high demand product in domestic market. Jay Kay Marketing (Keells) and Ceylon Fresh Fields have shown interest to connect.
		Ceylon Fresh's officer made a visit to field on 14 th Feb and are keen to pursue this linkage further. Since the volumes are not enough for commercial transportation, they are keen to wait until the volumes improve.
		They have issued a letter of intent to collaborate with the cluster.
10	Specific Issues and Challenges	The Kolikuttu bananas has the highest value of all small bananas in Sri Lanka. The main reason for this appreciation, in addition to being the sweetest small banana, is the Kolikuttu is part of the Sri Lankan culture. It is used in all festivals, in family gatherings and is a valuable gift for people in hospitals and for children.
		Unfortunately, the Kolikuttu banana has a lethal enemy, Fusarium Wilt of bananas (TR4), known as Panama Disease. The Kolikutto is highly susceptible to this terrible disease that has no cure until now with the advent of GMO varieties resistant to the disease. In addition, banana cultivation in Mullaitivu has had many challenges, beginning with a lack of proper land preparation and, most importantly, proper drainage which has been a limiting factor from the beginning. Proper irrigation and fertigation have been severely lacking as well. In general, the technology package recommended by the ISP for high productivity and quality has not been properly followed in the field, especially quality practices dealing with bunch care to create and preserve quality. Another area of concern relates to field losses of mother plants with fruit due to lack of protection through proper propping and guying. Tagging and forecasting technology has not been practiced adequately, leading to over ripening of the fruit and other quality issues. Also, there is no forecast data available for buyers from the Fruit Desk.
		There was unpredicted delivery of planting material, making it impossible to complete the plantation with targeted farmers. In year 2021, planting material was supplied for demonstration plots only and after one year the next supply. The irrigation infrastructure was significantly delayed and convincing farmers to irrigate the field was a big challenge.
11	Recommendations	The prevention of Panama Disease is of very high priority through quarantine protocols, including the use of suckers or followers for planting material. Only certified tissue culture meristems must be used. Moreover, the isolation of affected areas, with minimum human traffic, is necessary together with the disinfection of shoes upon entering and exiting an affected plot. Plant to plant disinfection of all cutting field tools must be practiced as well. Since the fungus is

transmitted through contaminated water, drainage works and strict control of the amounts of water applied through irrigation are must practices in the prevention protocol.
Since the disease has no cure, the ISP has recommended a rotation system using the double row high density production system. As soon as the infection level of the disease reaches 30% - 35%, a clean double is planted in the middle of the double row isle. Gradually, the whole plantation is shifted in place through a rotation within the same production plot.
On other agronomic aspects of cultivation, proper irrigation and fertigation are priority needs that must be addressed as well through closer supervision and training. Training on the operation and maintenance of the ASMP low pressure irrigation systems is a priority. Much work needs to be done in Mullaitivu to achieve the drainage level bananas require at the farm level. In addition, tagging with coloured ribbons for age control at harvest needs to be applied properly and the Fruit Desk must become more efficient in managing the fruit inventory and providing production forecasting data, including accounting for fruit lost in the field and fruit sold to the local market. Bunch quality practices must be applied weekly as well as IPM practices to prevent Sigatoka and other pests and diseases. Field losses of mother plants with fruit must be avoided at all costs through proper propping and guying.
For the timely supply of planting material, a reliable supplier should be identified in the nearby areas.

4.5.2 Papaya Cluster

S. No.	Particular	Details		
1	CROP AND VARIETY	PAPAYA (TAINUNG)		
			Farmers	Acreage
2	Beneficiaries and acreage	TOTAL TARGET	400	200
		ISP Farmers	180	90
		Remark:		
		• ISP had selected 434 farmer. elephant attack and unavaile majority of farmers dropped have been reduced from 500	s in 2022, howe ability of plantin 1. Now the targ to 400.	ver, due to g material, jet farmers
		• Currently, due to unavailabili farmers have planted	ity of planting m	aterial 180
3	Yield (MT/Hectare)	Expected: 112.5 MT/ Hectare Cu ~ 45.5 MT/ Acre 25	urrent: 62.5 MT/ 5 MT/ Acre	Hectare ~



		Remark: Crop was heavily damaged during the rains in Oct- Dec 2023. Just started flowering now	
4	Harvest Cycle	Round the year	
5	Post Harvest Processing and Packaging Centre (PHPPC)	 PHPPC Proposal, Engineering Designs, Business Model and Technical Specifications for the equipment submitted. Since the building was not ready for installation of equipment, the International Food Technologist visited the workshop of fabricator to audit the fabrication quality of equipment as per the specifications provided by ISP. Also, a trial operation with Papaya was done in Dambulla facility on 15th Dec 2023 to check the fitment of equipment for Papaya. For details, please refer to report for milestone VII.5 	
		Registered	
		Name: Golden Papaya Farmers Limited	
		Registration Number: PB 00280494	
6	Name of Public Enlisted Company (PUC)	<i>Status:</i> Inactive; we expected the harvest to begin with 150 farmers in December 2023, unfortunately, extreme weather destroyed 80% of the fields. Consequently, restarting the distribution of seeds for 400 farmers. Therefore, the potential harvest will now commence in July/August 2024. Currently, very low volumes ranging 500-1000 kg per week, making not viable for any institutional buyer.	
		Remark: For detailed status on shareholding, bank account balance, operations, challenges, recommendations, please refer to report for milestone VIII	
		Completed	
7	Compost Production Unit	Remark: Considering the various challenges of establishing the commercial compost production yard in each cluster, it was agreed with RC and PMU to establish demonstration unit of 20 MT for production cycle, which can be scaled up by PMU/ PUC at a later stage and defer the liquid fertilizer production facility.	
		The revised list of requirements was submitted to PMU on 6 th September 2023 and activity was conducted on 8 th Nov 2023.	
		The layout design of compost production shed was also submitted on 19 th Sep 2023.	
9	Market Linkages	Serendib Global Trading is one of the top buyers interested in Tainung variety of Papaya. Since due to recent rainfalls more than 80% of the plantation is destroyed, we will need to take the discussion further once the new crop is near to harvest.	

		In addition, discussions are on-going with CR Exports and Development Interplan Ceylon.
10	Specific Issues and Challenges	The major challenge of the Papaya Clusters is to obtain the right fruit size for the export market. This can be achieved beginning with choosing the right variety. The Tainung, variety used by the ASMP is a papaya already recognized in the international market, but the fruit tends to be larger than the Hawaiian Solo varieties used in many exporting countries. The size can be reduced by applying the ISP recommended population density to maximize the population effect on the fruit size.
		The other major challenge is drainage, both surface drainage and deep drainage to be able to cultivate low laying areas successfully. Is a well-known fact that papaya is susceptible to root diseases such as Phytophtora that are more common in poorly drained soils, especially during the rainy season as experienced last year in November and December in Mullaitivu and Polonnaruwa.
		Physically losing plants is also more prevalent when the soil is over saturated with water. In this condition, the roots do not have the soil anchorage to hold the plant straight up and keep them from falling.
		Due to extreme rainfall in November and December, 70% of farmers lost their cultivation.
		Mealy bugs infestations have been observed in a few fields during the transition from the dry season to the rainy season. Mealy bugs can damage the fruit as well as the foliage of the plants, reducing their photosynthetic capacity.
		In addition, elephant fences has been delayed for long, impact the cultivation through attack from wild elephants.
11	Recommendations	The recommended practices in the ISP technology package need to be applied, with special emphasis on drainage and quality practices such as the control of Anthracnose. Proper irrigation and fertigation are needs that must be addressed through closer supervision and training. Training on the operation and maintenance of the ASMP low pressure irrigation systems is a priority. The control of mealy bugs is important during climatic transitions.

4.5.3 Pomegranate Cluster

S. No.	Particular	Details		
1	CROP AND VARIETY	POMEGRANATE (BHAGWA VARIET	Y)	
	2 Beneficiaries and acreage		Farmers	Acreage
2		TOTAL TARGET	150	75

		Farmers Selected	75	37.5
		Remark: Initially the target we increased to 150 in Aug 2023. Out 75 have been selected and 50 farn 25 acres.	is 50 farmers of remaining 1. iers have plante	and then 50 farmers, d in area of
3	Yield (MT/ Hectare)	Expected: 44.5 MT/ Hectare ~ 18 MT/ Acre Current: Harvesting not started. 10 MT/ Hectare ~ 4 MT/ Acre can be expected		ng not ectare ~ 4 expected
4	Harvest Cycle	May to October		
	Post Harvest Processing	 PHPPC Proposal, Layout Design Technical Specifications for the To be established by PMU englished 	n, Business Moo e equipment su gineers	del and bmitted.
5	and Packaging Centre (PHPPC)	Remark: Since ISP was req implementation of only seven fac PMU to establish one facility per of ISP and others by PMU enginee	uired to sup iilities, it was a district through rs.	ervise the greed with assistance
		Registered		
	Name of Public Enlisted	• Name: Lanka Red Gems Farm	ers Company Lir	nited
6		• Registration Number: PB 002	76698	
_	Company (PUC)	Status: Non-Operational		
		Remark: Harvest expected from N	larch 2024 onw	ards.
		For details, please refer to report ;	or milestone VI	11
	Compost Production Unit	Completed		
7		Remark: Considering the various the commercial compost product was agreed with RC and PMU to es of 20 MT for production cycle, v PMU/ PUCs at a later stage and production facility.	challenges of e on yard in each tablish demons hich can be sc defer the liqu	establishing h cluster, it tration unit raled up by id fertilizer
		The revised list of requirements we September 2023 and activity was	as submitted to conducted on 8 th	PMU on 6 th ^h Nov 2023.
		The layout design of compost submitted on 19 th Sep 2023.	oroduction shee	1 was also
9	Market Linkages	Pomegranate has a high demand in the local market an plantation under ASMP is targeted to substitute imports i the country. ISP has been in contact with local supermarket i.e., Cargills and Keels who have expressed their high interes on the crop. However, tangible market linkage could only b realized only once the crop is ready for harvest and the buye are confident on the quality quantity and pricing		narket and imports in permarkets igh interest uld only be d the buyer
10	Issues and Challenges	Pomegranate is a very promis Mullaitivu. This crop was chosen k	ing crop for the Project to	farmers in be located



11	Recommendations	of pomegranate in this Cluster, particularly in the demonstration plot where there has been conflicts in the technical advice given to the farmer between the ISP and the DoA AI. The recommended irrigation and fertigation regimes must be followed to the letter. Water and nutrients must never be lacking. The mini weather stations installed by the Project in every Cluster will contribute greatly to applying the right amounts of water. Fertilizers for fertigation must be available and always used. Proper Anthracnose control must be practiced as recommended by the ISP, beginning at flowering time. Timely bagging of the fruit must be practiced as well to prevent fruit damage by insect pests.
		hear the seashore, in the Northern and Eastern Provinces, to benefit from the mild, Mediterranean type, microclimate created by the sea breeze that helps in lowering the incidence of fungal diseases and allows for the optimum development of the pomegranate fruit. However, such locations have very sandy soils that are low in fertility. In addition, these soils have very low water retention. The water and fertilizer management of these soils is therefore the major agronomic issue facing these farmers. Deficiencies of Magnesium and micronutrients such as Sulphur, Copper and Zinc are always a threat. Anthracnose has also been a negative factor affecting the quality of the fruit and fruit flies and other fruit insect pests have the potential to do the same. Supervision and the timely delivery of irrigation equipment and fertilizer materials have greatly affected the cultivation

4.6 ANURADHAPURA

4.6.1 Banana Cluster

S. No.	Particular	Details			
1	CROP AND VARIETY	BANANA (AMBUL)			
	Beneficiaries and acreage			Farmers	Acreage
		TOTAL TARGET		642	953
2		New Farmers		150	50
		Self-Funded Farmers		151	246.5
		TOTAL		301	296.5
3	Yield	Expected: 50 MT/ Hectare ~ 20.23 MT/ Acre	Curre Demo Hecta	e nt: o Farmers: 62 are ~ 25 MT/ /	.5 MT/ Acre



		Existing: 25 MT/ Hectare ~ 10 MT/ Acre
		Remark: The expected yield in the CDP is much higher than the current yield due to higher population densities (971 plants per Acre vs 680) used in the new plantings; higher banana bunch weight from proper irrigation and fertigation and other ISP agronomic practices; less field losses; better fruit quality from the application of the ISP quality enhancing practices for bananas.
4	Harvest Cycle	Throughout the year
		 PHPPC Proposal, Engineering Designs, Business Model and Technical Specifications for the equipment submitted. Installed and commissioned under supervision of ISP experts
5	Post Harvest Processing and Packaging Centre	Remark:
5	(PHPPC)	 The building for permanent PHPPC is still to be constructed, therefore, established as temporary facility in the rented premises. As on 15th February 2024, facility was operational
		For details, please refer to report for milestone VII 5
	Name of Public Enlisted Company (PUC)	Registered
		Name: Rajanganava A Park Limited
		Registration Number: PB 00266121
6		 Status: Operational; Selling to Ceylon Fresh for exports, 2nd grade to Cargills for domestic market and 3rd grade to various other sources. Total volumes about 7000-7500 Kgs per week. Also selling bunch covering bags to farmers
		Remark: For detailed status on shareholding, bank account balance, operations, challenges, recommendations, please refer to report for milestone VIII
		Dropped
7	Compost Production Unit	Remark: Despite of various follow-ups by ISP from PMU and PPMU, there was no action on land selection and/ or procurement of raw material. The matter was flagged with SC on 27 th September 2023, still could not be receive any promising response.
		The matter was then flagged in the monthly progress reports, during RC meeting on 16 th December 2023 and was admitted by PMU's Agronomist on various challenges in procurement of raw material or land selection. Therefore, task could not be completed due to factors beyond ISP's control. Documentary evidence attached as annexure 8.4

0	Market Linkages	Selling to Ceylon Fresh for exports, 2 nd grade to Cargills for domestic market and 3 rd grade to various other sources.
5	Warket Linkages	Agreement between Ceylon Fresh and PUC is under advanced stages of discussion.
10	Specific Issues and Challenges	The Rajanganaya Ambul Banana Cluster in Anuradhapura was the first Cluster established by the ASMP through the ISP. It was also the first cluster oriented to exports. From that time, banana cultivation has faced many challenges in Rajanganaya.
		Drainage is a chronic problem because the production area is low paddy land. Farmers use a rotation of paddy rice (1 year) and bananas (5 years). Poor drainage enhances fungal diseases that are quite common on the banana fruit and on the foliage of the banana plants. However, irrigation is required during the dry season and fertigation should be a year around practice. Some of the challenges that affect exports are short fingers, freckles, red rust stains from the rust thrips and damage from flower thrips.
		Fungal diseases such as Black Sigatoka and Verticillium Cigar End Rot have affected productivity and quality as well. The small number of active and functioning leaves on the plants caused by severe Sigatoka disease at harvest time has caused serious ripening problems during the voyage to the Middle East market.
		In general, the technology package recommended by the ISP for high productivity and quality has not been properly implemented, especially quality practices dealing with bunch care to create and preserve quality.
		Another area of concern relates to field losses of mother plants with fruit at certain times of the year due to lack of protection through proper propping and guying. In addition, tagging and forecasting technology has not been practiced adequately, leading to over ripening of the fruit and other quality issues.
		Despite the above, the most serious challenge for the Cluster has been to secure the harvest volumes required to export a full reefer container per week. Fortunately, much work has been done to bring more farmers into the program and presently weekly exports of Ambul banana are consistently happening. Supporting the continuity of exports and the development of the PUC is the fact that the Cluster was able to establish a close relationship with a buyer/exporter from the beginning. This buyer, with his own staff, manages all pre- and post- harvest operations, including the supervision of the application of the ISP technology package at the farm level and the packing and shipping of the bananas.

		In this sense, Rajanganaya has become a model for other Clusters and PUCs on what the ASMP is all about, farmers, grouped into an unlisted private company, doing business on a continuous basis.
	Recommendations	Pest and disease control practices that affect the premature ripening and the quality of the bananas, micro drainage work, proper irrigation and fertigation are priority needs that must be addressed as well through closer supervision and training.
11		Training on the operation and maintenance of the ASMP low pressure irrigation systems is a priority. Much work needs to be done to achieve the drainage level bananas required at the farm level.
		In addition, tagging with coloured ribbons for age control at harvest needs to be applied properly and the Bunch quality practices must be applied weekly as well as IPM practices to prevent Sigatoka and other pests and diseases. Field losses of mother plants with fruit must be avoided at all costs through proper propping and guying.
		But the best recommendation for the Rajanganaya PUC is to sustain and grow the exports of Ambul bananas by constantly improving fruit quality and increasing export volumes. The buyer/exporter should look at tapping other international markets, particularly in North-East Asia and Singapore.
		China is a market with immense potential.

4.6.2 Guava Cluster

S. No.	Particular	Details		
1	CROP AND VARIETY	GUAVA (APPLE GUAVA)		
			Farmers	Acreage
		TOTAL TARGET	300	150
		ISP Farmers (New)	150 50	50
2	Ponoficiaries and acrease	Self-Funded (Existing)	152	130
2	Delleliciaries and acreage	Total	302*	180
		Remark: Initial target was 498 farmers with 524 acres of plantation. This was reduced to 300 farmers with 150 acres. *Currently, active farmers are 202		
		Expected: 67 MT/ Hectare ~ Cu 27.1 MT/ Acre M	rrent: 55 MT/ Η Γ/ Acre	ectare ~ 22
3	Yield	Remark: The expected yield in the the current yield due to higher p plants per Acre vs 619) used in the	e CDP is much h opulation densi new plantings;	nigher than ities (1,133 higher fruit



		weight from proper irrigation and fertigation and other ISP agronomic practices; better fruit quality from the application of the ISP quality enhancing practices for guava.	
		Currently, harvesting is only for the existing plantations.	
4	Harvest Cycle	Round the year	
5	Post Harvest Processing and Packaging Centre (PHPPC)	 PHPPC Proposal, Layout Design, Business Model and Technical Specifications for the equipment submitted. To be established by PMU engineers <i>Remark: Since ISP was required to supervise the</i> <i>implementation of only seven facilities, it was agreed with</i> <i>PMU to establish one facility per district and others will be</i> 	
		done by PMU engineers.	
		 Name: Ipalogama Agri Products Limited 	
	Name of Public Enlisted Company (PUC)	Registration Number: PB 00275773	
6		 Status: Operational; selling cover bags. Guavas are still sold directly through collection agenda 	
		Remark: For detailed status on shareholding, bank account balance, operations, challenges, recommendations, please refer to report for milestone VIII	
		Dropped	
7	Compost Production Unit	Dropped Remark: Despite of various follow-ups by ISP from PMU and PPMU, there was no action on land selection and/ or procurement of raw material. The matter was flagged with SC on 27 th September 2023, still could not be receive any promising response.	
7	Compost Production Unit	Dropped Remark: Despite of various follow-ups by ISP from PMU and PPMU, there was no action on land selection and/ or procurement of raw material. The matter was flagged with SC on 27 th September 2023, still could not be receive any promising response. The matter was then flagged in the monthly progress reports, during RC meeting on 16 th December 2023 and was admitted by PMU's Agronomist on various challenges in procurement of raw material or land selection. Therefore, task could not be completed due to factors beyond ISP's control.	
7	Compost Production Unit	DroppedRemark: Despite of various follow-ups by ISP from PMU and PPMU, there was no action on land selection and/ or procurement of raw material. The matter was flagged with SC on 27th September 2023, still could not be receive any promising response.The matter was then flagged in the monthly progress reports, during RC meeting on 16th December 2023 and was admitted by PMU's Agronomist on various challenges in procurement of raw material or land selection. Therefore, task could not be completed due to factors beyond ISP's control.Documentary evidence attached as annexure 8.4	
9	Compost Production Unit Market Linkages	DroppedRemark: Despite of various follow-ups by ISP from PMU and PPMU, there was no action on land selection and/ or procurement of raw material. The matter was flagged with SC on 27th September 2023, still could not be receive any promising response.The matter was then flagged in the monthly progress reports, during RC meeting on 16th December 2023 and was admitted by PMU's Agronomist on various challenges in procurement of raw material or land selection. Therefore, task could not be completed due to factors beyond ISP's control.Documentary evidence attached as annexure 8.4Cargills and Development Interplan have been connected as potential buyers. Given the relatively low volume produced, PUC seems not very keen for new linkages on short- or medium-term contracts which the exporters seek at least a three months price to work with their buyers.	

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	macro drainage patterns of the water sheds in this area ar at the same time, training the farmers to apply mid drainage practices at the farm level. Other agronor challenges in this guava Cluster in Ipologama is t procurement of nematode free planting material, togeth with mixing of varieties in a few fields, resulting in or shaped fruit. Fortunately, the variety mixing is not a ma problem presently and has been addressed by the supply certified planting material to the farmers to replace tre with odd-shaped fruit. Proper irrigation and fertigati practices are needs that must be addressed through clos supervision and training. Training on the operation a maintenance of the ASMP low pressure irrigation systems a priority. The Espalier Trellis production system has shor good potential to increase quality and volumes and should expanded.	
		 Non-agronomic issues are: Low participation of farmers in the region Inactive involvement of PUC mobilizers Need for independent audit and guidance on increasing the profits
11	Recommendations	A larger number of DoA certified nurseries to supply planting material to the Cluster is required. In addition, bagging with coloured bags needs to be applied properly and the Fruit Desk must become more efficient in managing the fruit inventory, including accounting for fruit lost in the field. The expansion of the Espalier Trellis production system should facilitate these practices. Training in the proper operation and maintenance of the introduced low pressure irrigation systems and the proper application of the ISP fertigation protocol is also highly necessary.

4.6.3 Chili Cluster

S. No.	Particular	Details		
1	Crop and Variety	Chili (MICH HY 1)		
			Farmers	Acreage
2	Beneficiaries and acreage	Total Target	400	200
		Farmers Selected	400	200
		Remark: Initially the target was of plantation. However, was incr 200 acres.	300 farmers with reased to 400 farr	150 acres ners with
3	Yield	Expected: 100 MT/ Hectare ~ 40.46 MT/ Acre	Current: 50 MT/ H MT/ Acre (Green (lectare ~ 20 Chilli)



		Remark: The expected yield in the CDP is much higher than the current yield due to higher population densities (30,000 plants per Acre vs 14,000) used in the new plantings; higher numbers of pods per plant from proper irrigation and fertigation and other ISP agronomic practices; better pod quality from the application of the ISP quality enhancing practices for chili.
4	Harvest Cycle	Round the year
	Post Harvest Processing	 PHPPC Proposal, Layout Design, Business Model and Technical Specifications for the equipment submitted. To be established by PMU engineers
	(PHPPC)	Remark: Since ISP was required to supervise the implementation of only seven facilities, it was agreed with PMU to establish one facility per district and others will be done by PMU engineers.
6	6 Name of Public Enlisted Company (PUC)	 Registered Name: Ceylon Agro Park Limited Registration Number: PB 00270145 Status: Active; selling fertilizers and solar irrigation pumps
		Remark: For detailed status on shareholding, bank account balance, operations, challenges, recommendations, please refer to report for milestone VIII
	Compost Production Unit	Dropped
7		Remark: Despite of various follow-ups by ISP from PMU and PPMU, there was no action on land selection and/ or procurement of raw material. The matter was flagged with SC on 27 th September 2023, still could not be receive any promising response.
7		The matter was then flagged in the monthly progress reports, during RC meeting on 16 th December 2023 and was admitted by PMU's Agronomist on various challenges in procurement of raw material or land selection. Therefore, task could not be completed due to factors beyond ISP's control.
		Documentary evidence attached as annexure 8.4
9	Market Linkages	Cargills and Keells are the most potential buyers, however given the prevailing high and volatile market prices, PUC is not keen to connect with buyers with a commitment.
10	Specific Issues and Challenges	The ISP rewrote the "Book of Chili" in Sri Lanka by introducing a remarkably high tech and advanced production technology package for chili. This package was made up of the use of certified hybrid seed produced by the ASMP (the hybrid was developed by the DoA), improved land preparation practices emphasizing surface drainage, high planting beds (0.5 m),

		drip tape irrigation with fertigation, plastic mulch, peripheral insect nets, yellow sticky traps and other IPM practices for the prevention and control of pests and diseases.
		The Chili Cluster in Anuradhapura is perhaps the most successful Cluster in the entire ASMP. Its success was due to the proper application of the above ISP technology package which proved to be extremely successful in increasing yields 3 to 5 times compared to the yields obtained with the traditional technology package previously used in this same area. The results were way beyond expectations.
		Drainage is still the greatest challenge remaining for the Cluster farmers. When the height of the planting beds is not maintained at 0.5 m, chili suffers from more pests and diseases because of impeded internal drainage in the proximity of the chili roots. Moreover, water accumulation spots, from faulty surface drainage practices in chili fields, always suffer from Fusarium Wilt, Root Rot and several other pests and diseases. The proper management of insect nets and the proper use of yellow sticky traps is still lacking in many fields, leading to problems with the Chili Curled Leaf Virus that is caused by the whitefly in conjunction with mealy bugs and chili thrips. Chili fields bordering banana fields have shown to suffer more frequently from thrips infestations since bananas are a preferred host for thrips. Micronutrients deficiency symptoms are commonly observed in chili fields in Anuradhapura.
11	Recommendations	Complete adherence to the ISP technology package, as a package, is necessary to realize the high yield potential of the introduced new ISP technology. Of special importance is the application of the surface drainage practices contained in the ISP technology package.
		Drying facilities are required to produce dry red chili that has a higher demand and value in the local and export markets.

4.7 POLONNARUWA

4.7.1 Papaya Cluster

S. No.	Particular	Details		
1	CROP AND VARIETY	PAPAYA (TAINUNG)		
2			Farmers	Acreage
		Total Target	300	150
	Beneficiaries and acreage	Farmers Selected	102	51
		Farmers Selected10251Remark: Initially the target was 400 farmers with 150 acrof plantation. This was reduced to 300 farmers.		

3		Expected: 112.5 MT/ Hectare ~ 45.5 MT/ Acre	Current: Harvesting not started yet. 75 MT/ Hectare ~ 30 MT/ Acre can be expected
	Yield	Remark: The expected yield in the CDP is much hig the current yield due to higher population densitie plants per Acre vs 619) used in the new plantings; hig weight from proper irrigation and fertigation and agronomic practices; better fruit quality from the ap of the ISP quality enhancing practices for Papaya.	the CDP is much higher than er population densities (1,133 the new plantings; higher fruit and fertigation and other ISP it quality from the application actices for Papaya.
4	Harvest Cycle	Round the year	
5 a	Post Harvest Processing	 PHPPC Proposal, Layout Design, Business Model Technical Specifications for the equipment subn To be established by PMU engineers 	
	and Packaging Centre (PHPPC)	Remark: Since ISP was required to supervise the implementation of only seven facilities, it was agreed with PMU to establish one facility per district and others will be done by PMU engineers.	
		Registered	
	Name of Public Enlisted Company (PUC)	Name: Ceylon Fresh Papaya Limited	
		Registration Number: PB 00276056	
6		Status: Operational; generation material, renting bed forming r	g incomes by selling planting nachine and agriculture inputs
		Remark: For detailed status or balance, operations, challenge refer to report for milestone VI	n shareholding, bank account s, recommendations, please II
		Dropped	
7	Compost Production Unit	Remark: Despite of various follow-ups by ISP from PPMU, there was no action on land selection procurement of raw material. The matter was fla SC on 27 th September 2023, still could not be re- promising response.	low-ups by ISP from PMU and on land selection and/ or The matter was flagged with still could not be receive any
/	Compost Production Unit	The matter was then flagged in the monthly progress report during RC meeting on 16 th December 2023 and was admitte by PMU's Agronomist on various challenges in procuremen of raw material or land selection. Therefore, task could not b completed due to factors beyond ISP's control.	
		Documentary evidence attache	ed as annexure 8.4
9	Market Linkages	Serandib Global Trading and Ke when the crop is close to har negotiate with buyers.	eells are interested to connect vest and the PUC is ready to
10	Specific Issues and Challenges	The major challenge of the Pa right fruit size for the export	paya Clusters is to obtain the market. This can be achieved



-		
		beginning with choosing the right variety. The Tainung, variety used by the ASMP is a papaya already recognized in the international market, but the fruit tends to be larger than the Hawaiian Solo varieties used in many exporting countries. The size can be reduced by applying the ISP recommended population density to maximize the population effect on the fruit size.
		The other major challenge is drainage, both surface drainage and deep drainage to be able to cultivate low laying areas successfully. Is a well-known fact that papaya is susceptible to root diseases such as Phytophtora that are more common in poorly drained soils, especially during the rainy season as experienced last year in November and December in Mullaitivu and Polonnaruwa.
		Physically losing plants is also more prevalent when the soil is over saturated with water. In this condition, the roots do not have the soil anchorage to hold the plant straight up and keep them from falling.
		Mealy bugs infestations have been observed in a few fields during the transition from the dry season to the rainy season. Mealy bugs can damage the fruit as well as the foliage of the plants, reducing their photosynthetic capacity.
11	Recommendations	The recommended practices in the ISP technology package need to be applied with special emphasis on drainage and quality practices such as the control of Anthracnose. Proper irrigation and fertigation are needs that must be addressed through closer supervision and training. Training on the operation and maintenance of the ASMP low pressure irrigation systems is a priority. The control of mealy bugs is important during climatic transitions.

4.7.2 Chili Cluster

S. No.	Particular	Details		
1	CROP AND VARIETY	CHILI (MICH HY 1)		
		۲ Farmers ۵		Acreage
		Total Target	400	200
		Farmers Selected	200	100
2	Beneficiaries and acreage	Remark:		
		• Initially the target was 300 for plantation.	armers with 20	00 acres of
		• All 400 farmers selected, howe farming at present. 180 farmer.	ever, only 220 j s did not start i	farmers are the farming

		because of delay in infrastructure (agrowells, etc) and did not pay their share capital.	
	Yield	Expected: 100 MT/ Hectare ~ 40.46 MT/ Acre	Current: 30 MT/ Hectare ~ 12 MT/ Acre
3		Remark: The expected yield in the CDP is much higher than the current yield due to higher population densities (30,000 plants per Acre vs 14,000) used in the new plantings; higher numbers of pods per plant from proper irrigation and fertigation and other ISP agronomic practices; better pod quality from the application of the ISP quality enhancing practices for chili	
4	Harvest Cycle	May - September	
5	Post Harvest Processing	 PHPPC Proposal, Layout De Technical Specifications for To be established by PMU 	esign, Business Model and r the equipment submitted. engineers
	(PHPPC)	Remark: Since ISP was required to supervision the implementation of only seven facilities, it was agreed with PMU to establish one facility per district and others will be done by PMU engineers.	
		Registered	
		Name: Ceylon Agro Park Li	mited
	Name of Public Enlisted Company (PUC)	• Registration Number: PB C	00270145
6		Status: Operational; selling for pumps	ertilizers and solar irrigation
		Remark: For detailed status of balance, operations, challeng refer to report for milestone VI	n shareholding, bank account es, recommendations, please II
		Dropped	
7	Compost Production Unit	Remark: Despite of various follow-ups by ISP from PMU and PPMU, there was no action on land selection and/ or procurement of raw material. The matter was flagged with SC on 27 th September 2023, still could not be receive any promising response.	
/		The matter was then flagged in the monthly progress reports during RC meeting on 16 th December 2023 and was admitted by PMU's Agronomist on various challenges in procuremen of raw material or land selection. Therefore, task could not be completed due to factors beyond ISP's control.	
		Documentary evidence attache	ed as annexure 8.4
9	Market Linkages	Cargills and Keells are the mo given the prevailing high and not keen to connect with buve	st potential buyers, however volatile market prices, PUC is rs with a commitment.



		The ISP high technology package validated in Anuradhape and made up of the use of certified hybrid seed produced by the ASMP (the hybrid was developed by the DoA), improved land preparation practices emphasizing surface drainage, high planting beds (0.5 m), drip tape irrigation with fertigation, plastic mulch, peripheral insect nets, yel sticky traps and other IPM practices for the prevention ar control of pests and diseases was used as well in Polonnaruwa.	
10	Specific Issues and Challenges	Drainage is of special concern in Polonnaruwa and is still the greatest challenge for the chili Cluster farmers. There are a good number of low laying areas use for chili production in Polonnruwa that need more elaborate drainage infrastructure to make them productive. In existing fields, when the height of the planting beds is not maintained at 0.5 m, chili suffers from more pests and diseases because of impeded internal drainage in the proximity of the chili roots. Moreover, water accumulation spots, from faulty surface drainage practices in chili fields, always suffer from Fusarium Wilt, Root Rot and several other pests and diseases. The proper management of insect nets and the proper use of yellow sticky traps is still lacking in many fields, leading to problems with the Chili Curled Leaf Virus that is caused by the whitefly in conjunction with mealy bugs and chili thrips. Chili fields bordering banana fields have shown to suffer more frequently from thrips infestations since bananas are a preferred host for thrips. Micronutrients deficiency symptoms are commonly observed in chili fields in Anuradhapura.	
11	Recommendations	Complete adherence to the ISP technology package, as a package, is necessary to realize the high yield potential of the introduced new ISP technology. Of special importance is the development of drainage infrastructure in low laying areas and the application of the surface drainage practices contained in the ISP technology package. Drying facilities are required to produce dry red chili that has a higher demand and value in the local and export markets.	

4.7.3 Vegetables Cluster

S. No.	Particular	Details		
1	CROP AND VARIETY	BRINJAL (THINNAWELI PURPLE) OKRA (HARITHA)		
2	Beneficiaries and acreage	Total Target	Farmers 300	Acreage 150

		Remark: All 300 are selected, however, cultivation will start with 50 farmers only. Since there was change of crop from organic to non-organic in October 2023 and the region has been adversely impacted by heavy rains, it was impossible to commence the activity.		
		Expected:		
3	Yield	Brinjal: 90 MT/ Hectare ~ 36.42 MT/ Acre	Current: Not Applicable	
		Okra: 120 MT/ Hectare ~ 48.56 MT/ Acre		
4	Harvest Cycle	Throughout the year		
5	Post Harvest Processing and Packaging Centre (PHPPC)	 PHPPC Proposal, Engineering Designs, Business Model and Technical Specifications for the equipment submitted. Since the building was not ready for installation of equipments, the International Food Technologist visited the workshop of fabricator to audit the fabrication quality of equipment as per the specifications provided by ISP. Also, a trial operation with Papaya was done in Dambulla facility on 15th Dec 2023 to check the fitment of equipment for Papaya. 		
For actails, please refer to re				
6	Name of Public Enlisted Company (PUC)			
		Name: Ceylon Vege Cultivators Limited		
		<i>Status:</i> Non-Operational; PUC has been recently established and need to start the plantation.		
		Remark: For detailed status on shareholding, bank account balance, operations, challenges, recommendations, please refer to report for milestone VIII		
7	Compost Production Unit	Dropped		
		Remark: Despite of various follow-ups by ISP from PMU and PPMU, there was no action on land selection and/ or procurement of raw material. The matter was flagged with SC on 27 th September 2023, still could not be receive any promising response. The matter was then flagged in the monthly progress reports, during RC meeting on 16 th December 2023 and was admitted by PMU's Agronomist on various challenges in procurement of raw material or land selection. Therefore, task could not be		
		Documentary evidence attached as annexure8.4		
9	Market Linkages	For Okra, ISP is discussing opportunities with Alwis Agro Ltd, however they are concerned about the high logistics costs and the freshness for the young okra that are in demand by the international buyers. When the crop is ready to harvest, depending on the demand conditions ISP is expected to have focused approach to connect the exporters to the PUC. ISP has been in contact with local supermarkets i.e., Cargills and Keels who have expressed their high interest on the crop. However, tangible market linkage could only be realized only		
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		once the crop is ready for harvest and the buyer are confident on the quality, quantity, and pricing.		
10		The Vegetables Cluster (Okra and Brinjal) in Polonnnaruwa was establish for export purposes. The full ISP technology package, designed for chili, must be applied as well for these vegetables. The only difference is the population densities for Okra and Brinjal are lower because the plant spacing within the planting rows was increased to 0.40 m to adjust for the larger plant structure and canopies of okra and Brinjal compared to Chili.		
	Specific Issues and Challenges	The production fields must be well drained using, if necessary, macro drainage infrastructure and certainly surface drainage practices at the farm level. Special attention must be paid to the bed height recommended by the ISP (0,50 m). This type of bed will work in keeping excess water from the root systems of the vegetables.		
		The greatest challenge for this Cluster is to develop and implement a staggered planting system that will be able to produces the volume required to ship the reefer container per week, which is 18 mt to 20 mt. to the international markets.		
		There are also special post-harvest considerations to avoid the blackening of Okra and the decay of Brinjal during the voyage to international markets.		
11	Recommendations	Complete adherence to the ISP technology package, as a package, is necessary to realize the high yield potential of the introduced new ISP technology. In addition to normal agronomic practices, of special importance is the development of drainage infrastructure in low laying areas and the application of the surface drainage practices contained in the ISP technology package.		
		The management of the cold chain is very important because these vegetables are highly perishable. For this purpose, the packing facility (PHPPC) must have proper cold storage rooms and pre-cooling equipment to rapidly remove the field heat of the produce at harvest time and bring the pulp temperature down to the desired shipping temperature as soon as possible.		

5 CHALLENGES

5.1 Governance

- a) PMU: The PMU did a great job of being PoC for the ISP and bridging various communication gaps with the client and provincial stakeholders; however, there was lack of effective participation from the PMU subject matter experts during the implementation and review of deliverables.
- b) *Review Committee (RC):* The RC members were very helpful in strategic guidance; however, the RC should have had delegated authority from the client to undertake decisions on non-commercial contractual matters, such as modification of milestones, etc. The limited authority of the RC significantly increased the time required to seek approval from Steering Committee, the maximum Project authority that did not meet regularly.

5.2 Implementation

- a) COVID-19 Pandemic and Economic Crisis: These unforeseen events caused long delays in the implementation of the field activities and procurement of agriculture inputs, equipment, which in turn, precipitated the withdrawal of a significant number of farmers from the Project. Delays in the provision of inputs such as irrigation had a severe effect in the development, the harvest timing and, eventually, the yield potential of the ASMP crops in the different Clusters, especially in the Pomegranate Clusters.
- *b) Social Acceptance:* In a few of the clusters, adoption of the ISP technology packages was a slow process and still needs regular supervision and mentoring by the extension officers due to the socio-economic environment within the Clusters. This was especially true in Jaffna.
- *c) Time Constraint:* The assignment was initially structured for a period of 26 months which is a very short time span to show tangible impact in such agricultural development projects.
- d) Unscheduled Visits and Events Demanding the ISP Presence: The ISP experts and field staff were requested to participate in numerous visits by international delegates, review visits by the World Bank, supervision visits of the Review Committee members, etc., etc. These activities took productive time away from of the ISP experts and field staff.

5.3 Interventions

- a) Production
 - Long delays in providing planting material, agriculture inputs and equipment to farmers.
 - Incorrect and/or conflicting technical guidance from various other officers (PMU, PPMU, DoA, Mahaweli) and PPMU mobilizers at the field level
 - Inferior quality procurement of few items such as banana plastic bags and coloured bags for mango and guava. This was a serious issue particularly in the Banana Cluster in Jaffna where out-of-specs plastic bags caused significant fruit losses to the farmers.
 - There was not an institutionalized quality check protocol for procured items by the PMU/PPMU's and for the services provided by suppliers.
- b) Post-Harvest Infrastructure
 - No official land clearance or formal land acquisition for PHPPC's, except for the one in Matale. This resulted in most of the PHPPC's not yet being established, with only temporary facilities being commissioned.
 - The exporters in Sri Lanka need to learn to comply with international food safety standards that can only be applied in the ASMP PHPPC's or similar.



- c) Institutional Development
 - PUC's lacked clarity from the PMU/ PPMU's on the support provided by the Project for working capital.
 - Lack of administrative support from PPMU's. For example, in Jaffna the transfer of funds from a potato society bank account to the Potato PUC account has been in question for months and despite commitment from the PPMU, no action has been taken to date.
 - Poor accounting systems/improper record keeping by the PUC's.
 - PUC's need guidance in fulfilling the legal compliances and taxation regulations from the Government.
 - Lack of confidence among the PUC's BoD's on business management and commercial operations
- d) Market Linkages
 - In the business of selling fresh produce, consistent quality and sufficient volumes play a determining role, and since most of the ASMP Clusters are not fully established, they cannot fulfil these requirements from institutional buyers. These buyers are waiting for sizeable quantities of quality product to be able to trade.
 - PUC's have very high expectations on pricing and are not willing to accept the tabled offers by buyers. They need more mentoring and training to understand the market pricing dynamics.

5.4 Contractual

a) Lack of Flexibility: During implementation, the need arose to modify a few of the interventions and associated contractual milestones, however the client did not have the flexibility to make such changes contractually.



6 RECOMENDATIONS AND SUSTAINABILITY

Agriculture is one of the development sectors that needs a reasonable gestation period to be able to showcase outcomes from investments. With respect to the ASMP and given the two major calamities that affected the Country during the life of the assignment, attaining sustainability in a short period of time becomes an even more difficult task despite the significant investments made for the development of the sector by the Project.

ISP values a participatory and inclusive approach to implementation of any assignment. This approach is proven to be extraordinarily successful in assuring a substantial return on development investment in the long term, no matter the circumstances. For this reason, capacity building was undertaken with priority by the ISP for officials of the DoA, the Mahaweli authorities, the PPMU's, the PMU, etc., to make sure they were enabled to enlist the participation of the farmers and PUC's in ensuring the sustainability of the Project after the departure of the ISP.

Listed below are a few ISP recommendations that will contribute to the sustainability of the ASMP and ensure a return on investment is made by the Project:

Production

- Regular supervision by extension officer of DoA to ensure adoption of the ISP technology package.
- Awareness programmes by the PPMU's for increased farmer mobilization to reach a critical mass that guarantees consistency in the timely delivery of high-quality volumes for the market.
- Timely procurement and distribution of planting material and agriculture inputs for the farmers.

Post-Harvest Infrastructure

- Formal land acquisition for PHPPC's and a smooth title transfer protocol of the facilities to the PUC's
- A quality assurance protocol for the procurement of PHPPC equipment by the PMU, including a service contract with the supplier.
- Promptly secure required operational licences for the facilities.
- Guidance to PUC's on seeking ISO and other required certifications.

Institutional Development & Market Linkages

• Technical handholding support to the PUC's for at least a period of three-to five years through advisors in varied fields like agronomy, marketing and exports, finance, legal and secretarial services, etc.



7 CONCLUSION

Overall, the technical assistance from the ISP has been received well by the MoA, the farmers, and other stakeholders. The ISP managed to lay the foundation for the application of modern agricultural technology practices, which is now being replicated by MoA in other Clusters through funding from the European Union (EU) and various other institutions such as the ADB, USAID and JICA. All of them have expressed their interest to replicate the ASMP model in other Districts of Sri Lanka. In addition, there has been positive private sector interest to join hands with farmer companies to build businesses together.

Despite many changes in the operating environment the ISP has delivered on most of the outputs. As a consequence, positive results are starting to flow throughout into the agriculture sector of the whole country.

Operating Environment

From its inception in Oct 2019, the ISP operated continuously until the end of its contract. There were a number of issues that arose which meant that the Team was obliged to reconsider and reconfigure the way implementation was carried out. These were forced reactions caused by changes in the operating environment. The most important events which impacted the way in which the ISP worked were the global Covid-19 pandemic and the economic and political crisis that gripped Sri Lanka in 2022. In addition, the war in Ukraine further exacerbated the economic crisis with its impacts on food prices, fertilizer availability and costs, and fuel availability and costs.

The ISP carefully managed risks throughout the work of the Team to implement the assignment. This was particularly necessary as the situation in-country worsened at times, including curfews, lockdowns, limitations of travel, and limits on the size of gatherings. Additionally, consideration had to be given by the ISP to the domestic price inflation of many items from basic food and medical supplies to farm inputs and shortages of fuel and cooking gas. All these economic misfortunes impacted travel within the Country causing limitations on public transport. Fundamental to the success in maintaining progress was the efforts by the Project Management Unit, and the close collaboration between the international Experts, national experts, and the field staff. They adopted a nimble approach to implementation to keep delivering, maintaining stakeholder participation by doing things differently but safeguarding a clear sight on the Project objectives.

Examples of the practice of this approach included the use of Zoom video conferencing to remain in touch with the field staff during the pandemic. WhatsApp groups were created to keep track on field activities and ensure technical advice through subject matter experts.

Successful Aspects

Below are the successful aspects of the assignment regarding the achievement the desired outcomes:

- Fundamental changes in the agricultural practices: The modern agriculture techniques were in general well accepted by the farmers and have significantly reduced the cost of production along with a significant increase in productivity. Many extensionists acknowledge that the introduction of ISP technology practices was a game changer for the agriculture sector of Sri Lanka
- Farming as a business: Prior to the interventions of the ISP, no training or thoughtful consideration had been given for smallholder farmers to undertake an export-oriented business. Institutionalizing the smallholder farmers into farmer companies and training them on business management has helped them understand the business aspects necessary to increase profitability at a reduced level of uncertainty regarding earnings.



- **Post harvest management infrastructure:** Post harvest infrastructure is one of the most critical components of the agriculture business and prior to the ASMP, wastage indexes after harvest were more than 30 % 40%. Through the technical assistance of the ISP, the Project has come up with processing and packaging infrastructure to add value to the harvested produce by increasing quality and reducing the post-harvest losses significantly.
- Inclusion of women and youth: After some initial resistance but observing the formation of farmer companies and the setting up of infrastructure, more women and youth started participating in the Project activities. In fact, various farmer companies are now led by highly educated women and youth, which left their well settled jobs in the cities.

Unsuccessful aspects

While many successes can be reported, the nature of the Project and the challenges faced during implementation meant that not all outputs were entirely successful.

- Alignment of agriculture extension within DoA across all Provinces: Although most of the farmers have adopted the ISP practices and are realizing their accrued benefits, there is still reluctance from some farmers to do so. These farmers will need more mentoring from the extension officers. However, the assignment to deliver extension given to the provinces creates a fractionated Extension Service which is difficult to coordinate and optimize. A case in point is the ISP struggled to get alignment and consistency of delivery and follow-up from all Provinces in which the Project worked. However, the ISP made progress in providing technical training and written materials for the extension staff. These efforts were undertaken to foster the consistency of technical approaches, but their ability to influence farmers through this extension delivery system is limited. It is hoped that an effective national agriculture extension system can be developed to increase the adoption of modern technology practices. Currently, as Departmental budgets are cut, there is a risk that extension services will be reduced for farmers to a level where agents are completely unable to reach out to the farmers and effectively assist them within such an evolving environment.
- **Collaboration with institutional buyers:** Although the ISP has invested significant time and efforts to facilitate formal collaborations between buyers and sellers, there remains work to do to establish long term agreements. One on one meetings at buyer-seller meets have given visibility to the potential buyers, however, the farmers are not able to ensure the consistent quality and quantities required, making the buyers lose interest. Since marketing is an on-going activity and takes time, the ISP suggests that PUCs receive support for two to three years to avoid future failures.

To summarize, the assignment has been quite successful to establish a foundation to build upon; however, the answer to sustainability and growth is the handholding of PUCs on various technical, managerial, and financial aspects. If this handholding is achieved, the Project truly can bring a green revolution into the country, leading to high exports and reduced imports of fruits and vegetables.

8 ANNEUXURES

8.1 List of Clusters

Selected Cluster Profiles, amended 1 February 2021

District	Cluster Type	System	Cluster DS Division	Сгор	Farmer No.	Area (ac)	Potential Agribusiness	Markets	Organic
Anuradhapura	New and Existing	Monocrop	Rajanganya	Small Banana, Ambul, new and existing plantations	642	948	Dole, Lulu, CR Exports, Ceylon Fresh Exports, BA Trading JV, Keels, Cargilis	Export	
Anuradhapura	New	Monocrop	Thalawa and Galnewa	Chili	400	400	Lanka SATHOSA	Local	
Anuradhapura	New and Existing	Monocrop	Ipologama	Guava	620	875	LFVPPEA, Lulu, CBL, Pubudu International	Export / Local	
Batticaloa	New	Intercrop	Kaluwanchikudy	Pomegranate/Chili	25	25	Large fruits Importers and Traders, Lanka SATHOSA	Local	
Batticaloa	New	Intercrop	Walachchena Sandiweli	Pomegranate/Chili	25	25	Large fruits Importers and Traders, Lanka SATHOSA	local	
latticaloa	New	Intercrop	Velavely	Cavendish Bananas/Chili	500	500	Havleys, Cargilis, Dole	Export / local	
affna	New	Monocrop	Oddusan Tentative	Potato/Onion Rotation	500	500	Chunnakam Co-op, SM Chains, Lanka SATHOSA	Local	
affna	New and Existing	Monocrop	Кораі	Small Banana, Ambul (Organic) new and existing plantations	500	1,000	Hayleys (organic), LFVPPEA, Dole, BA Trading JV	Export / Local	Yes
affna	New and Existing	Intercrop	Chavakachcheri	Mango/Chili	300	300	LFVPPEA, Lanka SATHOSA, Dole, BA Trading JV	Export / Local	
/latale	New and Existing	Intercrop	Luster	Mango/Big Onion	200	375	LFVPPEA, Lanka SATHOSA, Dole, BA Trading JV	Export / Local	
Aatale	New and Existing	Monocrop	Dambulla	Guava	200	375	LFVPPEA, Lulu, CBL, Pubudu International	Export / Local	
Aatale	New	Intercrop	Laggala	Papaya/Chili	300	300	LFVPPEA, CBL, Lulu, CGC, Lanka SATHOSA	Export / Local	-
Ionaragala	New	Intercrop	Sooriyawewa Area	Cavendish Bananas/Chili	500	1.000	Dole, Cargills, CIC	Export / Local	-
Nonaragala	New and Existing	Intercrop	Śyambalanduwa	Mango/Chili	150	150	LFVPPEA, Lanka SATHOSA	Export / local	
lullaitivu	New	Intercrop	Maritimepattu	Pomegranate/Chili	50	50	Local Super Market Chains, Lanka SATHOSA	Local	
Aullaitivu	New	Intercrop	Pudukuiuppu	Banana (Kolikuttu)/Chili new and existing plantations	700	2,000	Cargills, CGC, LFVPPEA	Export / Local	
lullaitivu	New	Intercrop	Oddusan	Papaya/ Chili	600	1,000	LFVPPEA, CBL, Lulu, CGC, Lanka SATHOSA	Export / Local	
olonnaruwa	New	Intercrop	Hingurankoda	Papaya/Chili	400	200	LFVPPEA, CBL, Lulu, CGC, Lanka SATHOSA	Export / Local	
olonnaruwa	New	Monocrop	Ellahera	Organic Vegetables	300	420	MOPA/ Bio Foods Ltd	Export / Local	Yes
olonnaruwa	New	Monocrop	Mahaweli Area	Chili	300	300	Lanka SATHOSA	Local	
otals			the second s		7.220	10 751			

Footnotes:

Small bananas, mango and guava will be exported from existing plantations using proper protocols for reefer containers developed by ISP
 MD-2 pineapple will be tested in small plots (1 Acre) in Matale and Monaragala
 Grapes adaptability trials with new suitable varieties will be carried out in Jaffna and Monaragala by the ASMP

Review Committee Report on ISP Response Matrix

Review committee members met on 11th February 2021 and discussed the Comments and Response Matrix submitted by the ISP in response to review committee amended feasibility report submitted to Scoretary Ministry of Agriculture on 01/01/2021. The committee submits herewith the following report based on discussion held.

- 1. The committee approved 20 cluster arrangements submitted covering 10,751 acres with 7220 farmers to develop cluster development plan.
- Approved crops are for exports and expect that ISP will introduce modern sustainable technology in increasing potential productivity and farmer profitability.
- 3. Since approval has already been given to introduce pineapple variety MD-2, to plant one hectare each in Matale and Monaragala, each locations must be developed by ISP as demonstration parks with a view to train other farmers in these locations.
- 4. Based on the performance of MD2 pineapple variety, appropriate multiplication technology must be developed by the ISP with the ultimate objective of expanding the clusters.

Dr.Ajantha de Silva Dr. W.N D≉ Geg

W.M.Weerakoon

Chairman

Dr.Ajofitha de Silv Member

Member

Prof. B.Maram Member



8.2 Request for Replacement of Clusters



To: Dr. Rohan Wijekoon, Project Director, Agriculture Sector Modernization Project (ASMP) Ministry of Agriculture

Reference: Agriculture Sector Modernization Project (ASMP), World Bank Credit No: 5873 LK. Providing of Consultancy Services to Design, Establish, Operate, Manage and Transfer of Agriculture Technology Demonstration Parks (ATDPs) to Farmer Producer Organisations (FPOs) Supported by the Project. Contract No. LK-MOA-PMU-41990-CS-QBS

Subject: Replacing the proposed three (3) papaya clusters with full-fledged MD-2 pineapple clusters; and replacing one (1) organic vegetable cluster with an agro-processing oriented normal, non-organic vegetables cluster; and adding one (1) additional MD-2 pineapple cluster

Dear Dr Wijekoon,

As the key objective of ASMP is to promote commercial and export-oriented agriculture in the country, considering the challenges facing the import of agriculture inputs for papaya and organic vegetables, we propose that alternative options with good export market potential be introduced in selected clusters.

Enclosed herewith are the detailed proposals for:

- Replacing initially proposed three (3) papaya clusters (under CDP #14: Mullaitivu, #15: Polonnaruwa & #18: Matale) with MD-2 pineapple clusters;
- Replacing one (1) organic vegetable cluster in Polonnaruwa (CDP #20) with an agro-processing oriented normal, non-organic vegetables cluster; and
- Adding one (1) additional MD-2 pineapple cluster in Monaragala which shall add value to the outputs of the project.

While each of the above are subject to the approval of the Review Committee, please note that proposal iii. in particular, if approved by the Review Committee, could require a further addendum to the contract. The Terms of Reference and Milestone payments in the latest signed Contract Addendum between the Ministry of Agriculture and FCG (dated 31 January 2022) lists twenty (20) clusters. The addition of one (1) additional MD-2 pineapple cluster to our scope would entail a revision to the number of clusters and associated milestones in our contract.

An alternative could be to remove one of the other existing clusters from the list, namely a cluster which the Review Committee deems to be less promising, and to replace it instead with the one (1) additional MD-2 pineapple cluster in Monaragala.

We kindly request for review and approval by the Review Committee of the attached proposals, and feedback on if/how we should proceed with adding the additional MD-2 pineapple cluster in Monaragala. This shall allow us to progress further on the clusters in question.

FCG New Zealand (FCG ANZDEC Ltd.) B:HIVE, Smales Farm, 72 Taharoto Road, Takapuna, Auckland 0622, New Zealand Tel. +64 9 523 2830 www.fcg.nz | consult@fcg.nz



FCG•

We thank you in advance for your kind assistance.

Yours sincerely,

16 12

Mark Ryan Managing Director FCG ANZDEC Limited

Enclosed:

- Proposal: Replacing the proposed papaya clusters (under CDP #14: Mullaitivu, 15: Polonnaruwa & 18: Matale) to full-fledged MD-2 pineapple clusters and one additional cluster in Monaragala
- Proposal: replacing the the proposed organic vegetables cluster in Polonnaruwa (CDP #20) with an agroprocessing oriented normal, non-organic vegetables cluster



8.3 Concept note on revision of milestone V

ISP: Concept Note: Revision of Milestone V

CONCEPT NOTE

Revision of Milestone V

From "Long-Term Purchasing Agreement" to "Purchase Order or Contract"

A) BACKGROUND

A.1 FARMERS SIDE

Agricultural commodities are subject to variations in production volumes due to a multitude of factors that are outside the control of farmers. Some of the factors that impact output are:

- a) Climatic conditions: Amount of rain, timing of rain, wind conditions etc.
- b) Planting conditions: Time of planting, technology applied in planting, drainage etc.
- c) Growing conditions: Pest and insect attack, irrigation, availability of water
- d) Others: Area devoted to a particular crop based on expected price at the time of harvest of multiple options available.

Since the crop output is very variable, the price expectations are linked to cost of growing and expected sales price are also very dynamic.

A.2 BUYER SIDE

The price at which a buyer would like to buy agricultural products depends on:

- a) Final customer: The price that a final customer would like to pay for the product i.e., the quantity in demand by the consumer.
- b) Value Chain Cost: Each part of the value chain adds cost and each element of the chain is subject to price changes. E.g., the cost of freight, insurance, document fees, packing material, labor etc. are subject to change.
- c) Economy: Factors in the economy impact the price e.g., foreign currency exchange rates, interest rate for working capital etc.

In summary, we operate in an environment in which a number of uncontrollable factors impact the volume of output and expected price and a number of uncontrollable factors impact the price expectations from the buyer side.

To solve these competing expectations from the seller and buyer sides, free-market economies have evolved price discovery institutions. These institutions match the demand and supply needs and discover an equilibrium price.

The life of this price equilibrium ranges from a few micro-seconds to a week or a month. E.g., the price for coffee and cocoa is stable for only a few micro-seconds and trades happen within that time span.

For crops of fruits and vegetables grown by independent farmers the price equilibrium is stable only for a day. Each new day a new price is born. Trades are done on that day's price.



ISP: Concept Note: Revision of Milestone V

B) LONG-TERM AGREEEMENT (LTA)

B.1 What is a Long-Term Agreement (LTA)

An LTA is imagined to last across a time period that spans a crop cycle (sowing, growth, harvest, field cleaning and grading and sale). It offers the seller a price that is valid for the crop cycle. So, the price is valid for a period that could range from one month to six months.

Disadvantages of LTA

For Seller:

The seller is locked into a price at time period zero, for a time period that could be as long as six months.

- During the six months period the cost of cultivation may skyrocket (exchange rate depreciation, inflation of agri-inputs, inflation of non-farm inputs etc.) making the LTA price unprofitable.
- b) During the six months period the open market (non-LTA price) would adjust to a price equilibrium that adjusts upwards for cost increases.
- c) During the six months period a new buyer may offer a higher price than the LTA price.

IMPACT: The farmers would "divert" their product to the "open market" or to the new buyer. The LTA would fail.

For Buyer

The buyer is locked into a price at time period zero, for a time period that could be as long as 6 months.

- a) During this period the non-commodity costs of the buyer could skyrocket (exchange rate appreciation, inflation in cost of supply chain costs like fuel, sea freight, insurances, document fees, packing material, labor etc.). This could make the LTA price unprofitable.
- b) During this period the open market could offer a lower price than the LTA price.
- c) During the period the buyer's final buyer could insist on a lower price.

IMPACT: The buyer would find it unviable to service and honor the LTA and prefer to buy from the open market. The LTA would fail.

C) SOLUTIONS

SOLUTION A

The first enemy of the LTA is the time component. "LONG-TERM" here is any period more than a month (in normal circumstances). For a successful exchange of goods between the buyer and seller it is suggested that an LTA is an inefficient instrument.

It is proposed that the PUC and buyer transact business on the basis of a "Purchase Order" (PO). The PUC and buyer should have an open line of communication, they talk, exchange information and expectations and arrive at an agreement on volume and price. This volume and prices are valid for that PO only. Once the PO has been executed, they negotiate for the next PO.

SOLUTION B

In order for price discovery to be efficient it is proposed that the PUC interact with a number of buyers. The PUC should be aware of all options and pathways to sell their product.

To enable this, it is proposed that a buyer-seller meet is organized once a quarter by the Project Management Unit, supported by ISP. This can be a hybrid event in which the farmers display their product and buyers communicate their expectations about quantity, quality and prices.



ISP: Concept Note: Revision of Milestone V

D) RECOMMENDATION

To apply a combination of the two solutions identified above, the milestone should be revised as:

- 1. 50% of the payment on establishing PO/ contract from the buyer for the identified crop
- 50% of the payment based on performance (evidence of continuous transactions i.e., over a period of three months)

Due to cropping cycle or delay in harvest, connecting each PUC with the buyer may not be feasible until December 2023. Therefore, ISP proposes to undertake responsibility of linking each of the selected PHPPCs from each district (which is the responsibility of ISP to supervise end-to-end) with the buyers.

Additionally, to ensure sustainability of the PUCs, build capacity to market their product and help with a network of potential buyers, ISP shall go beyond the contractual commitments and support PMU in organizing "meet-the-traders" events, bringing together potential buyers and PUCs.

The "meet-the-traders" events should be organized for specific crops for example potential buyers of Ambul Bananas will be brought in contact with potential sellers/PUCs of the crop. The same will be done for other crops. In cases where there are multiple products, multiple crop-specific sessions could be organized. To be effective, the event shall be organized every quarter until the end of the project.

ISP will support PMU in organizing such events, with ISP providing the necessary support to PUCs in pitching their product (volumes, quality, prices and other terms) to potential buyers and subsequent negotiations with such buyers.

After the achievement of the milestone and payments, ISP will continue to support the PUCs in their marketing and negotiation skills for the duration of the ISP contract to ensure sustainability of the marketing of the crops and further strengthening the financial and management capabilities of the PUCs.



8.4 Compost Yard Production

PROGRESS REPORT OCTOBER 2023

2.9 ATDP Clusters completed and operational in accordance with CDP (Milestone VIII)

COMPOST YARDS

One of the components in the CDPs is preparation of a compost yard, which ISP agreed to supervise in each of the 20 clusters. This requires tasks from ISP and PMU both. As technical consultants ISP can supervise the establishment of compost yards in the clusters but require support from PMU to provide equipment and select land. On 4th September 2023, it was announced by Chairman of RC that the land and equipments are ready in all clusters of Northern, North central, Uva and Eastern Province. Central province should be dropped by ISP.

As on 30th October 2023, ISP has been updated on the sites for Northern Province only and has completed the activity in four clusters, out of six. Despite repeated follow-ups, there is no update on sites for North Central, Uva and Eastern Province, due to which ISP shall not be setup compost yard in these three provinces.



Gupta, Parag

From:	Gupta, Parag
Sent:	Thursday, 9 November 2023 10:26 pm
To:	Dr. Rohan Wijekoon
Cc:	Asoka Casiechetty; Julian Velez; Dr. J.D.H. Wijewardane, DDR, Makandura
Subject:	RE: Urgent - Details related to Compost Production Sites

Dear Sir,

Land is not the only requirement for compost production. We have no idea on status of procurement in each of the districts. Like in NP, when Dr Hemantha reached there, they started collecting the plant waste.

The districts are not completely ready to start the activity immediately. Please see my comments as follows:

Uva Province:

- As suggested by Nadana, due to water logging, we will need for rain to stop.
- · They are still working on procurement of raw material and will complete by next week
- They are not able to find cow dung

Anuradhapura:

- Out of three clusters, land for one cluster only
- No status update on procurement of raw material

Polonnaruwa

- Out of three clusters, land for one cluster only
- No status update on procurement of raw material

Batticaloa

No status update on procurement of raw material

I would appreciate if the DPDs can also update on the status of procurement, which we have been following up for long now.

Regards

Parag Gupta

From: Dr. Rohan Wijekoon <projectdirectorasmp2@hotmail.com> Sent: Thursday, November 9, 2023 8:54 PM To: Gupta, Parag <Parag.Gupta@fcg.nz>; Dr. J.D.H. Wijewardane, DDR, Makandura <wijehema@yahoo.com> Subject: Fwd: Urgent - Details related to Compost Production Sites

Dear Parag and Hemantha Start immediately without asking any quarries PD

Sent from Outlook for Android

From: Agri Development <<u>agri.development.new@gmail.com</u>> Sent: Thursday, November 9, 2023 1:06:47 PM



To: anuratsri@gmail.com <anuratsri@gmail.com>; Anura Wijayathunga DPD <dpdpmuasmp@hotmail.com> Cc: Dr. Rohan Wijekoon <projectdirectorasmp2@hotmail.com>; Padmasiri Bandara <padmasiri2017@yahoo.com>; uppe2asmp@hotmail.com <uppe2asmp@hotmail.com>; Anuradha Wijethunga <anuradha040444@gmail.com>; dinnesh86@gmail.com <Dinnesh86@gmail.com>; kdevarajah@yahoo.com <kdevarajah@yahoo.com>; Radika Malawwathanthri <mnespecialistasmp2@hotmail.com; Manori Perera <<u>secretaryasmp@hotmail.com</u>>; Lathisha Liyanage <<u>lathishal@yahoo.com</u>>; liyanagelathishap@gmail.com; Manori Perera <<u>secretaryasmp@hotmail.com</u>>; Renuka Rathnayaka <rathnayakemmr@gmail.com>; Gupta, Parag <<u>Parag.Gupta@fcg.nz</u>>; Asoka Casiechetty <<u>acasiechetty@yahoo.com</u>> Subject: Urgent - Details related to Compost Production Sites

Deputy Project Director ASMP

Dear Sir,

This refers to the details regarding the Compost Production sites in NCP, CP, NP and EP.

Accordingly, it is observed that Provincial Senior Engineers of NCP, CP,NP and EP have shared relevant details of Compost Production sites .

As per the instructions given by the Director (Development), you are kindly requested to check the details submitted by the Provincial Senior Engineers and forward the details to ISP immediately in order to fast-track the activity without any delay.

Best regards

Achira Abeysinghe Development Officer Development Division Ministry of Agriculture



Gupta, Parag

From:	Gupta, Parag
Sent:	Thursday, 30 November 2023 6:17 pm
To:	Dr. Rohan Wijekoon
Cc:	W.D. Lesly Agri. Scientist- PMU; Hemantha Wijewardena; Asoka Casiechetty; Julian Velez
Subject:	Compost Production Delays
Attachments:	Uva Province.docx; Northern Province.docx; North Central Province.docx; Eastern province.docx

Dear Sir,

This is regarding the issues we are facing for completing our activity for the compost production demonstration.

Despite of your support in identifying the locations in all the provinces, we are struggling to get any support on the raw material and few remaining sites.

North Central Province

Anuradhapura:

- According to our DC, Rock Phosphate is still not procured.
- According to the list of location you shared with us on 9th Nov, out of three clusters, land is identified for one cluster only.

Polonnaruwa:

- According to our DC, Rock Phosphate is still not procured.
- According to the list of location you shared with us on 9th Nov, out of three clusters, land is identified for one cluster only.

Uva Province:

Monaragala:

• Cow Dung and Rock Phosphate is still not procured.

Eastern Province:

Batticaloa: According to PDPD, cow dung is available only in one cluster and in other two they are unable to procure due to heavy rains. For rock phosphate they have awarded the procurement letter, however, waiting for payment from PMU.

I would highly appreciate if Lesly can intervene with all the PPMU and provide us with the confirmation availability of all the raw material. We intend to complete this activity asap.

It is very difficult to complete the activity with incomplete raw material.

Kind regards



Gupta, Parag

From:	Gupta, Parag
Sent:	Sunday, 3 December 2023 11:33 pm
To:	Scientist asmp
Cc:	Dr. Rohan Wijekoon; Hemantha Wijewardena; Asoka Casiechetty; Julian Velez
Subject:	RE: Compost Production Delays

Thank you for your intervention.

Let's discuss on the meeting tomorrow morning. In summary, looks problem in every cluster.

Regards

Parag Gupta

From: Scientist asmp <asmpscientist@gmail.com>
Sent: Friday, December 1, 2023 10:00 PM
To: Gupta, Parag <Parag.Gupta@fcg.nz>
Cc: Dr. Rohan Wijekoon <projectdirectorasmp2@hotmail.com>; Hemantha Wijewardena <wijehema@yahoo.com>;
Asoka Casiechetty <acasiechetty@yahoo.com>; Julian Velez <velezju@gmail.com>
Subject: Re: Compost Production Delays

Dear Parag

I discussed with officers in different locations In Batticaloa due to heavy rains they cannot transport cowdung . They have ordered cow dung. Problem with rains Within severa; I days it will be ok. Rock phosphate will not be a issue Uva: Land problem will be cleared by next week. There also the heavy rains are affecting to the work.

Anuradhapura and and pollonnnaruwa No problem with rock phosphate But land clearance is still problem with Mahaweli head office .

Lesly

