



THE WORLD BANK

Cascade Management Plan (CMP) - Paththinippai



Under
Climate Smart Irrigated Agriculture Project (CSIAP)

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1. General Information

1.1 Summary Data

Information	Details
Name of the Province	Northern
Name of the District	Kilinochchi
Name of the Divisional Secretariat/s	Poonakary
Name of the Electorate	Jaffna
Name of the River Basin	Madakkal Aru
Name of the Cascade	Paththinippai
Name of the Agrarian Development Center/s	Poonakary
Name/s of GramaNiladari Division/s	Pallikuda
Extent of the cascade (ha)	175
Command area in the cascade (ha)	175
Catchment area	4.954 km ²
Number of sub-watersheds	-
Number of Total tanks in cascade	3
Gross designed capacity of the tanks	648.51Ac.Ft.
Number of tanks used for agriculture	2
Number of families living in the command areas of the Cascade	80
Number of tanks located within the forest	1



Figure 1: The Cascade Maps in Kilinochchi

Source: Climate Smart Irrigated Agriculture Project

1.2 Executive Summary

The CSIAP has conducted an Information Education Campaign (IEC) awareness program in the hotspot area (HSA) and spearheaded the process for the preparation of the Paththinippai Cascade Management Plan (CMP). This initiative engaged participants residing in the hotspot area, Community Management Committees (CMC), Field Officers (FO), and representatives from Government Organizations.

Emphasizing the necessity of a well-designed CMP is crucial for several reasons. Firstly, it facilitates equitable water distribution for all agricultural fields within the system. By strengthening the natural contours of the land, water wastage is minimized, and risks of waterlogging or erosion are reduced.

Within the CMP, channels and structures are constructed at appropriate elevations to ensure gravity-driven water flow from higher to lower elevations. This construction method reduces the need for pumping and energy consumption.

Moreover, the CMP regulates water flow and integrates storage reservoirs at different levels. This strategy ensures a consistent water supply during the dry season by storing excess water during periods of high rainfall or low irrigation demand.

Overall, the Paththinippai CMP plays a pivotal role in minimizing losses and promoting Climate Smart Agricultural Practices in water-scarce areas. It optimizes the utilization of available water resources, enabling farmers to meet their irrigation needs while mitigating environmental impact. The CMP also guides more appropriate actions to protect the landscape of the cascade. Tank Cascade Systems serve as buffers against climatic fluctuations and serve as cornerstones in adapting to future climate change in the dry zone.

1.3 Background

The Mandekallaru river basin is primarily located in the Kilinochchi district and comprises five cascades: SiththanOdai Middle & Lower, SiththanOdai Upper, Paththinippai, Pandivetti, and Mallikai Aru. Until the implementation of the Comprehensive Strategic Irrigation Agriculture Project (CSIAP), no declared tank cascade system existed in the Mandekallaru River basin.

There are four tanks under the Paththinippai cascade, namely Iyanarkulam, Paththinippaikulam, Karumarikulam, and Kadaliranchitalvukulam. These tanks serve multiple purposes, including irrigation for agriculture, providing water for livestock and wildlife, supporting inland fisheries, maintaining forest resources, meeting domestic needs, recharging groundwater, and sustaining the regional groundwater table. The tank beds also function as pasture land for cattle, and the deposited sediments are commonly used as organic fertilizer.

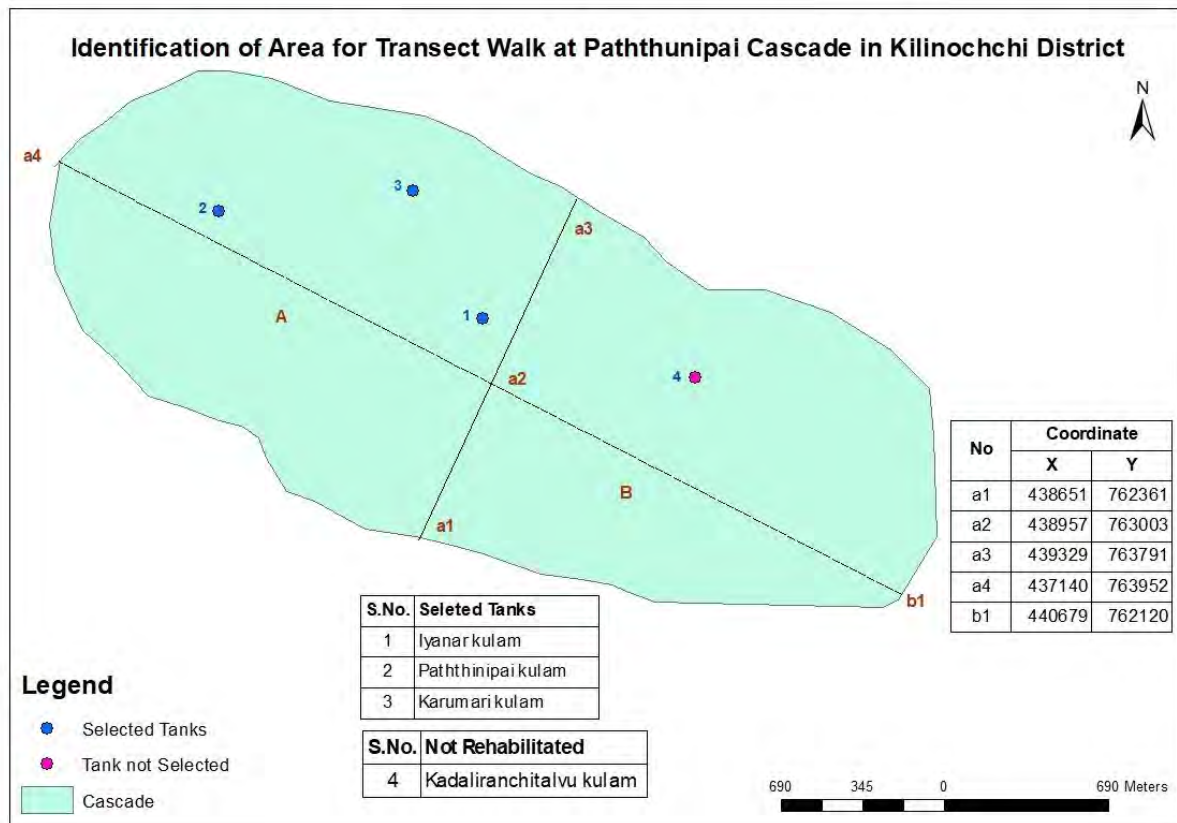


Figure 2: Map of the Paththinippai Cascade

Source: Climate Smart Irrigated Agriculture Project

1.4 Introduction

A cascade system is a connected series of tanks organized within a micro-catchment of the dry zone landscape for storing, conveying and utilizing water. They are connected by channels for harvesting floodwater and for distribution. In this network small tanks are connected with large reservoirs that store rainwater and surface runoff. The cascade refers to a system of interconnected irrigation tanks and downstream water flows that are strategically designed to provide water to agricultural fields and ensure efficient water distribution. This system is often employed in areas where water is scarcity and where there is a need to optimize water usage for agricultural purposes.

The main principle behind the Tank Cascade System is recycling and re-using water through a network of small to large-scale tanks. The advantage of such a system is that excess water flow from a reservoir is captured by the next downstream reservoir and thus, the excess or runoff water in the command area of reservoir is collected in the down slope reservoir. This water is continuously filtered and recycled in subsequent tanks.

Before the climate change, in the past, the dry zone of Sri Lanka particularly north and east receive rain fall by the north east monsoon from October to January. Considering the rain fall pattern small water storages were established to retain water throughout the year. These small water storages are referred "*Kulam* (tanks)". These tanks serve to collect the surface runoff, storage, distribution of runoff and irrigation for the cultivation of paddy and Other Field Crops (OFC) even during the dry seasons.

Historically, the tanks played major roles in facilitating the colonization in the dry zone. The tank cascade system (*wewa-ellangava* in Sinhala or *viluneerkulathodar* in Tamil) is an evident for ancient infrastructure of Sri Lankan irrigation. Thus, the tanks have characterized the cultural landscape and have become an identity-generating factor for the rural culture. The management of Tank Cascade Systems is intimately associated with their sociological setting and the evolution of rural settlements.

1.5 The Methodology

The participatory assessment process forms the basic methodology for developing the CMP. An interactive and iterative approach was used to identify the bio-physical condition of the cascade area. The required data were collected through primary and secondary data collection techniques. Participatory Rural Appraisal (PRA), Hydrological Studies, Engineering Surveys, Preliminary Investigation Report (PIR), Focused Group Discussion, Key Informant Interviews, Matrix Ranking, and Transect Walks were utilized to gather quantitative and qualitative data and validate it.

People from the hotspot area, members of CMC, farmers' organizations (FO), and officials of State Organizations participated in this assessment process. Participants were grouped into three categories based on their expertise in the area. Safeguard Officers took the leading role in each group as group coordinators, with the support of IDCB and Specialists of CSIAP-NP. Each group walked along tanks and the adjoining settlement area to observe and understand the context.

The participants prioritized critical issues through a ranking method, and interventions were proposed for each critical issue. Key Performance Indicators (KPIs) were also developed to measure the outcomes of the project. The findings of the assessment were captured in a report and shared among the CSIAP officers who participated in the transect walk. The draft report on the Cascade Basic Development Plan was compiled based on

the cascade profile and technical information. The report was finalized with the insights of the PMU.

Finally, the cascade was declared by the Department of Agrarian Development (DAD) and Provincial Department of Irrigation (PDI) at the Divisional Agriculture Development Committee.

2. Logical Information

2.1 Need for Cascade Management Project

Preparing a profile is essential as it provides a comprehensive overview of the design, components, and operational parameters of the cascade. This CMP serves as a valuable reference for stakeholders and layman farmers involved in the maintenance and management of the system. By detailing factors such as tank specifications, interconnections, control mechanisms, safety features, critical issues, and fluid transfer dynamics, the profile enables a clear understanding of how the cascade system functions and how it fits within the entire command and catchment areas. Ultimately, the CMP facilitates effective decision-making, troubleshooting, and optimization. The list below outlines the necessities for preparing the profile:

- To ensure the sustainability of the environmental, ecosystem, and cascade system.
- To avoid/minimize high water loss, flooding, frequent repairs of structures, low system productivity, waterborne diseases, etc.
- To optimize the contribution from other users than farmers for the maintenance of the irrigation system and ensure the active involvement of all stakeholders in a cascade in its management.
- To educate on the responsible usage of resources.

2.2 Goal

The goal of the CMPPaththinipai cascade is to reduce vulnerability of climate change through efficient water management and preventing illegal activities.

2.3 Objectives of the Cascade Management Project - Paththinipai

By the end of 2026, cascade management will improve the living standards of the communities living around Paththinipai Cascade through the restoration and improvement of the irrigation system. The project will:

- Address water scarcity and provide improved and reliable water accessibility for farming, drinking, and environmental purposes from 2024.
- Manage water and associated natural resources in a sustainable manner.
- Enhance the restoration of the watershed of the system to conserve biodiversity (flora & fauna, wild animals, etc.) through integrated management.
- Improve knowledge on water management techniques, irrigation scheduling, operation, and maintenance of tank cascade areas, tank beds, feeder canals, and drainage networks.

2.4 Targets

- To promote crop zoning programmes and facilitate marketing
- To facilitate the access for transportation and marketing.
- To solve land related issues.
- To facilitate cattle rearing during the cropping time
- To establish a legally empowered entity to safeguard the cascade

2.5 Composition of a CMC at Divisional Level

Strengthening the institutional framework in the cascade is identified as one of the key requirements for managing the cascade system. Hence, at the national level it was decided that CMCs are activated with the representation of Farmers Organizations and regional or district level officials.

The district level and regional level committees are described in the circular # 06 of 2023 published by Department of Agrarian Development regarding “CMC Establishment and Continuity” which was released on 2023.08.03 having reference number 7/3/9/CMC/2023. As per the circular the regional level committee consists of the following bureaucrats from the respective divisional secretarial jurisdiction.

- Divisional Secretary (DS) serving as Chairman
- Divisional Officer of the Department of Agrarian Development (DAD) - Secretary
- Agriculture Instructors (AIs) in the cascade

- Engineer/Technical Officer – Department of Irrigation
- Engineer/ Technical Officer representing Provincial Irrigation Department
- Regional Engineer/ Technical Officer representing Department of Agrarian Development
- Agricultural Research and Production Assistant
- Representative of the Department of Wildlife Conservation (DoWC)
- Representative of the Department of Forest Conservation (DoFC)
- Representative of Fisheries Unit
- Representative of Central Environment Authority
- Representative of the Department of Animal Production and Health
- Representative of the Agricultural and Agrarian Insurance Board
- Representative of the Geological Survey and Mines Bureau (GS & MB)
- Representative of the National Water Supply & Drainage Board (NWSDB)
- Representative of the Local Government Authority (Pradheshiya Saba)
- Representative of the Department of Land Use & Policy Planning
- Representative of National Aquaculture Development Authority (NAQDA)
- Representative of the Environmental Division of Police
- Representative of the Department of Archaeology
- Representative of the Department of Civil Defense
- GramaNiladhari
- Samurdhi Development Officer
- Economic Development Officer
- President or Secretary of each Farmers Organization and Women Farmers Organizations
- Representative of a Community Water Organization
- One representative from each organization representing other community organizations and environmental organizations

The meeting shall be convened by the Secretary as per the instructions of the Chairman of the Committee. The committee has re-intervened all the stakeholders.

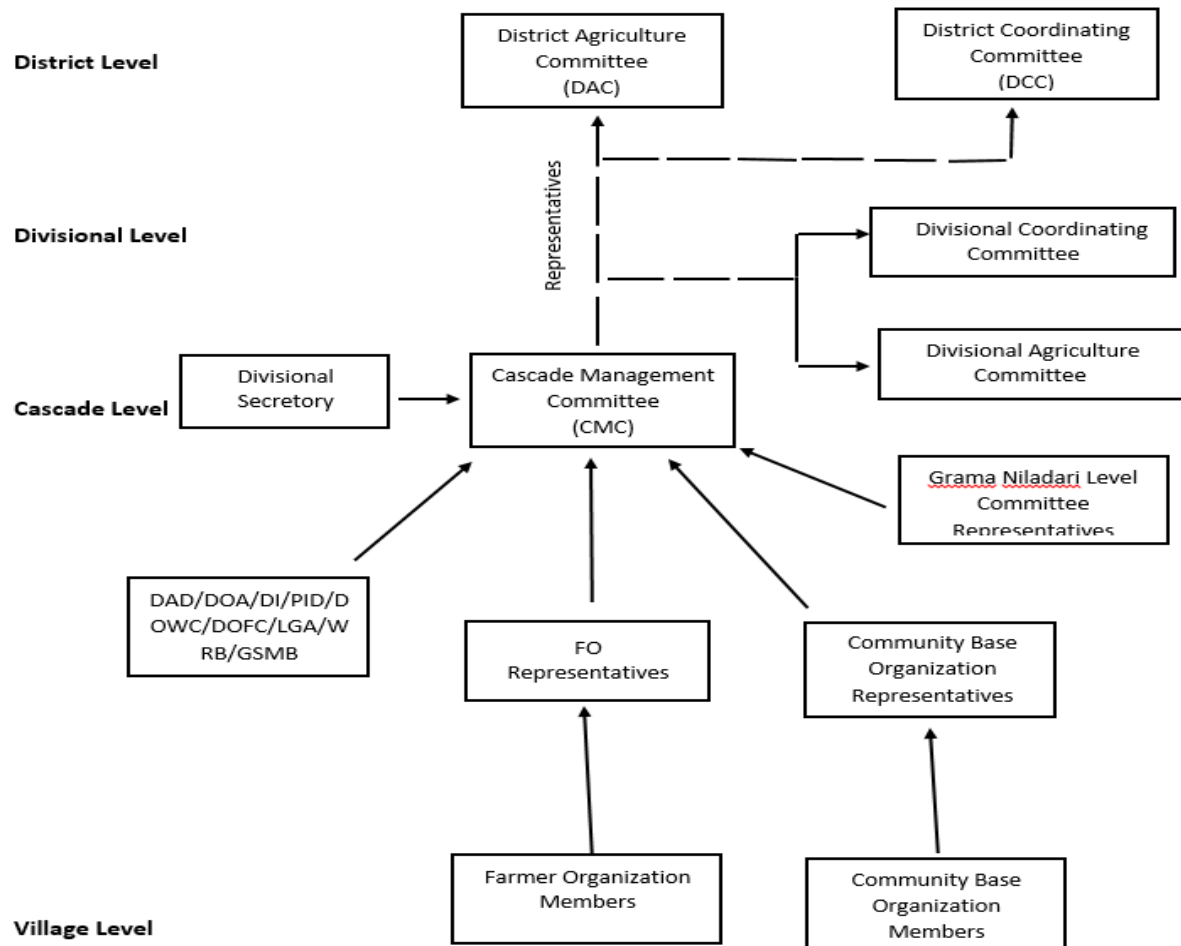


Figure 3: Structure of Cascade Management Committee

2.6 Roles and Responsibilities of the CMC

The Committee bears the overall responsibility in managing water and associated resources (including ecosystems) in the cascade. The defined roles and responsibilities in the above circular are as follows:

- Planning, implementation and monitor cascade system
Prepare/ update an integrated agriculture development plan for the water hotspot area of the cascade. The committee make necessary decisions to manage the resources of the cascade through a joint approach of relevant Government Institutions and beneficiaries of the cascade, implement those decisions and monitor the progress and process.
- Increase the productivity
- Management of water resources is to minimize natural disasters and harmful human activities.
- Plan cultivation, input supply, training programmes, and other production activities and facilitate market access to the production.
- Establish a formal system for optimal management of inputs and outputs related to ecosystems within the catchment.
- The committee should discuss the outcomes of cultivation committee meetings. Providing solutions to the problems that can be solved at the cascade level, referring unsolved problems to the Regional/ District Agriculture Committee as applicable.
- Provide support to enforce enacted laws related to ecosystems.
- Educate the farming community to understand the weather pattern and agriculture advisories. Exchange the knowledge and resources among water consumers in cascade.
- Promote climate-smart agriculture practices and technologies. Implementation of climate-friendly strategic plans appropriate to existing and predicted climate changes.
- Encourage participatory approach in carrying out activities of the development programs at the cascade level.
- The committee should discuss the maintenance work to be carried out in the cascade.

- Establish efficient information communication system among water consumers within the catchment area.
- Submit report related to the management of cascade to the regional / district agriculture committee time to time.

3. Current Profile of the Paththinippai CMP

3.1 Geological Aspect

The topography of the cascade is almost flat with a slight slope. The elevation varies from 0 to 10 m MSL, with the majority of the cascade area lying below 4 m MSL. The dominant soil group of the cascade is Soladizedsolonetz and solo, which can be found anywhere on the flat terrain. Red yellow latosols are also present in some areas of the cascade.

The groundwater quality of this area mainly depends on the height of the water table of the tanks. The level of Total Dissolved Salts (TDS) in the groundwater is higher than the permissible level of drinking water quality according to WHO standards. Most of the land is slightly affected by salinity, leading to crop suffering due to nutrient deficiencies. Hence, proper variety selection, Integrated Plant Nutrition Management (IPNS), and special agronomic practices are required to optimize yield.

Based on a combination of climate, soil, and topographic relief characteristics most of the cascade area lies within the agro-ecological region of Low Country Dry Zone Flat to Slightly Undulating (DL3), with Low Country Dry Zone Flat (DL4) also found in some areas. Deep confined aquifers occur within the sedimentary limestone and sandstone formations in this cascade.

3.2 Geographical Features

a. Flora

The forest cover in Kilinochchi district is 31042 ha (23% of total area), and the type of forest found in this area is tropical thorn, which is primarily influenced by monsoon rains. The vegetation around the Paththinippai cascade system is diverse and includes both terrestrial and aquatic plant species. Mangroves, grasses, reeds, water lilies and various types of aquatic vegetation are common plant species. These plants provide habitats for a wide range of wildlife.

b. Fauna

The tank cascade system supports a diverse array of fauna, including both terrestrial and aquatic species. The tanks and their surrounding areas attract numerous animals like elephant, monkey, deer, sambur, rabbit, and wild boar. Both terrestrial and aquatic plant species provide shelter for birds such as herons, egrets, woodpecker, jungle fowl, peacock, and waterfowl and is making an excellent spot for bird watching. Additionally, the tanks and their surrounding areas often attract migrant birds of colder regions which seek warmer climate during the winter season. This seasonal influx of birds adds to the biodiversity of the area. Other common fauna in the region includes as fish, amphibians, small mammals and reptiles like crocodiles, snakes, and lizards, as well.

c. Aquatic Life

The tanks within the cascade system are home to various fish species. These fish serve as a food source for local communities and contribute to the overall ecological balance of the tanks. Some of the common fish species found in these tanks include Tilapia, Catfish, and Gourami.

3.3Hydrological Aspect (Technical Data)

There are three working tanks located under the Paththinipai cascade. These tanks are known as Paththinipai, Karumari, and IyanarKulam. All three tanks are intended to be used for recharging groundwater, and two of them are also used for lift irrigation of paddy and other field crop cultivation.

No	Name of Tank	Existing Capacity (Ac.ft)	Designed Capacity (Ac.ft)	Command Area (ac.)	No of farmer families
01	Paththinipai	132.89	156.84	70	30
02	Karumari	10.23	21.70	0	0
03	IyanarKulam	112.18	469.97	105	50

Table 01: Particulars of the tanks

a. Command Area & Capacity of the Cascade System

The below 3 tables show the command area and capacity of 3 tanks.

1. Paththinipaikulam

Contour level (m)	Area (Ac)	Mean Area (Ac)	Volume (Ac.ft)	Capacity (Ac.ft)
0.30	0.242	0.121	0.121	0.121
0.60	2.057	1.150	1.150	1.271
0.90	16.526	9.292	9.292	10.563
1.20	25.026	20.776	20.776	31.340
1.50	30.637	27.832	27.832	59.172
1.80	36.733	33.685	33.685	92.858
2.10	43.333	40.033	40.033	132.892
2.40	52.477	47.905	47.905	180.797
2.70	62.121	57.299	57.299	238.096
3.00	67.726	64.924	64.924	303.020
3.30	72.341	70.033	70.033	373.054
3.60	82.728	77.534	77.534	450.589
3.90	90.354	86.541	86.541	537.131
4.20	97.076	93.715	93.715	630.846
4.50	99.418	98.247	98.247	729.094
4.80	100.659	100.039	100.039	829.133
5.10	100.934	100.797	100.797	929.930
5.40	100.981	100.958	100.958	1030.888
5.70	101.013	100.997	100.997	1131.885
6.00	101.031	101.022	101.022	1232.907
6.30	101.037	101.034	101.034	1333.941

2. Karumarikulam

Contour level (m)	Area (Ac)	Mean Area (Ac)	Volume (Ac.ft)	Capacity (Ac.ft)
3.00	0.669	0.335	0.335	0.335
3.30	4.721	2.695	2.695	3.030
3.60	9.685	7.203	7.203	10.232
3.90	13.268	11.477	11.477	21.709
4.20	16.656	14.962	14.962	36.671
4.50	19.536	18.096	18.096	54.767
4.80	21.421	20.479	20.479	75.246
5.10	22.140	21.781	21.781	97.027
5.40	22.260	22.200	22.200	119.227

3. Iyanarkulam

Contour level (m)	Area (Ac)	Mean Area (Ac)	Volume (Ac.ft)	Capacity (Ac.ft)
-0.30	0.005	0.002	0.002	0.002
0.00	0.009	0.007	0.007	0.009
0.30	0.032	0.020	0.020	0.029
0.60	0.126	0.079	0.079	0.108
0.90	0.249	0.187	0.187	0.295
1.20	0.427	0.338	0.338	0.633
1.50	0.718	0.572	0.572	1.205
1.80	1.614	1.166	1.166	2.371
2.10	2.651	2.133	2.133	4.503
2.40	4.631	3.641	3.641	8.144
2.70	10.658	7.644	7.644	15.788
3.00	46.812	28.735	28.735	44.523
3.30	88.508	67.660	67.660	112.183
3.60	113.750	101.129	101.129	213.312
3.90	129.277	121.514	121.514	334.826
4.20	141.015	135.146	135.146	469.972
4.50	149.902	145.459	145.459	615.431
4.80	158.559	154.231	154.231	769.661
5.10	162.647	160.603	160.603	930.264
5.40	164.575	163.611	163.611	1093.875
5.70	165.015	164.795	164.795	1258.670
6.00	165.022	165.018	165.018	1423.689

b. Parameters of Tanks

The surface water storage capacity of the cascade will be enhanced through renovating the head works of these tanks indicated in below table.

No	Name of Tank	Existing Capacity (Ac.ft)	Designed Capacity (Ac.ft)	Coordinate	
1	Paththinipai	132.89	156.84	437812.394	763729.93
2	Karumari	10.23	21.70	438629.142	763816.019
3	IyanarKulam	112.18	469.97	438925.678	763279.004
		255.30	648.51		

Table 5: Details of Existing and Designed Capacity

Afterintensive study of the hydrological, PIR, and engineering surveys, FSL levels have been raised for the tanks during the ongoing development works initiated by CSIAP in collaboration with PDOI and DAD. Table 5 shows the details.

No	Name of Tank	Existing FSL (m MSL)	Designed FSL (m MSL)	Spill raised by (m)
1	Paththinipai	2.1	2.3	0.2
2	Karumari	3.6	3.9	0.3
3	IyanarKulam	3.3	4.2	1.1

Table 6: Details of Existing and Designed Full Supply Level.

Tanks in this cascade did not have spill structures or spill pathways, causing them to become breached. However, as part of the CSIAP Project, spill and irrigation structures were constructed according to the topography as much as possible, as outlined in Table 6

No	Name of tank	Design Peak flow (m ³ /s)	Existing Spill Length (m)	Designed Afflux (m)	Design Spill length (m)
1	Paththinipai	12.24	No	0.3	50
2	Karumari	12.612	No	0.3	50
3	IyanarKulam	53.124	No	0.6	80

Table 7: Existing and Designed spill Length (based on Design Afflux)

No.	Name of Tank	Existing BTL (MSL)	Designed BTL (m MSL)
1	Paththinipai	3.2	3.6
2	Karumari	-	4.8
3	IyanarKulam	4.0	5.9

Table 8: Bund Top Level

c. Tanks Layouts

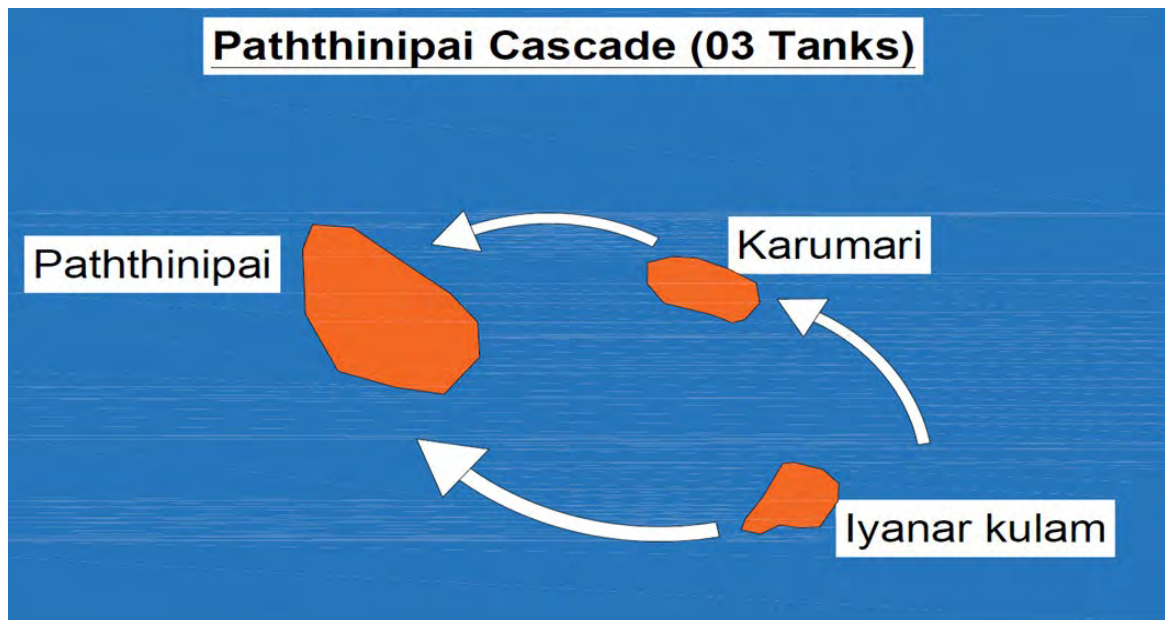
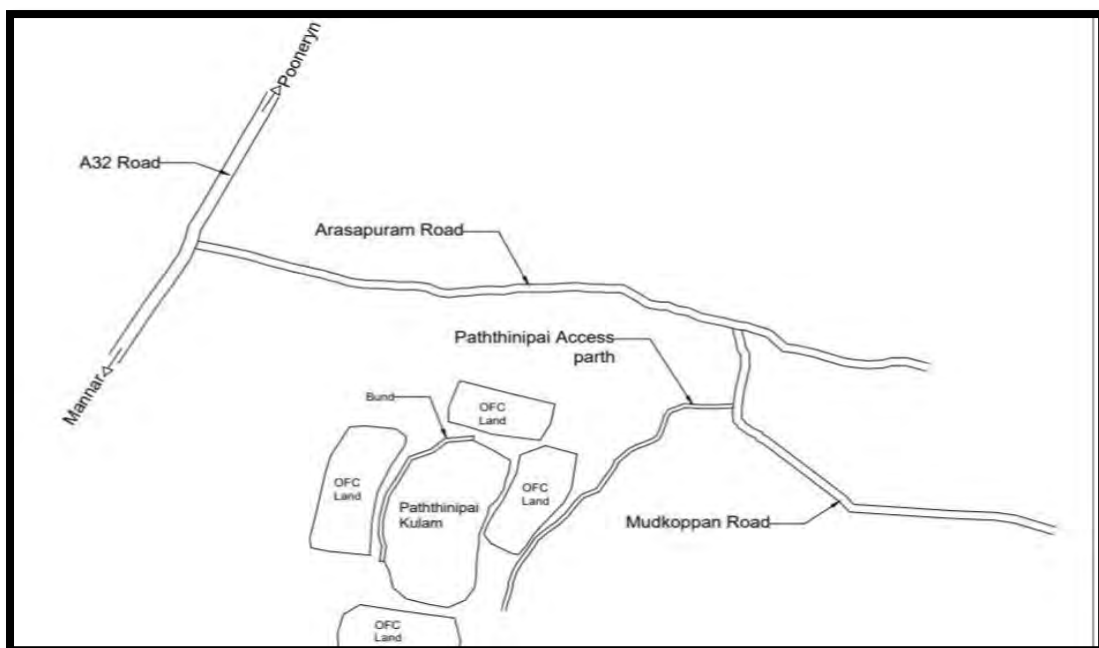
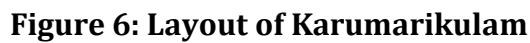


Figure 4: Map of Paththinipai Cascade

The PaththinipaiKulam serves as the lower tank in the cascade, with water flowing from the Karumaari tank along the natural tail path. It also receives water from IyanaarKulamvia connected control structure. As having an earth bund spanning 908 meters and a natural spill structure, the PaththinipaiKulam is an important component of the overall system.



Total length of Karumaarikulam Bund is 400 m. Karumaarikulam receives the water from its own catchment area and iyanaarkulam. Spill water from Karumaaarikulam flows to Pathinippaikulam.



The IyannarKulam is a crucial tank in the cascade system, as it receives water from its own catchment area. The earth bund of the tank spans 725 meters and it has a sluice structure and a natural spill structure. Additionally, a control regulator structure has been constructed at Iyannar to release water to the Paththinipai tank.



3.4 Environmental Aspect

a. Climate (Rainfall & Temperature)

It is found from the Annual Resource Profile and Statistics of Poonakary DSD that the mean annual rainfall in Poonahary is 1,286 mm, and 75% of the rainfall received during the period starting from September to December by North-East monsoon. But a huge variation was observed in the monthly rainfall pattern compared with the last decade due to global warming and the disturbance of atmospheric circulation. Most of the rain fed cultivations such as paddy, black gram, and OFC were severely affected due to both unexpected drought and heavy rainfall. But the annual temperature varies from 25 C to 35 C.

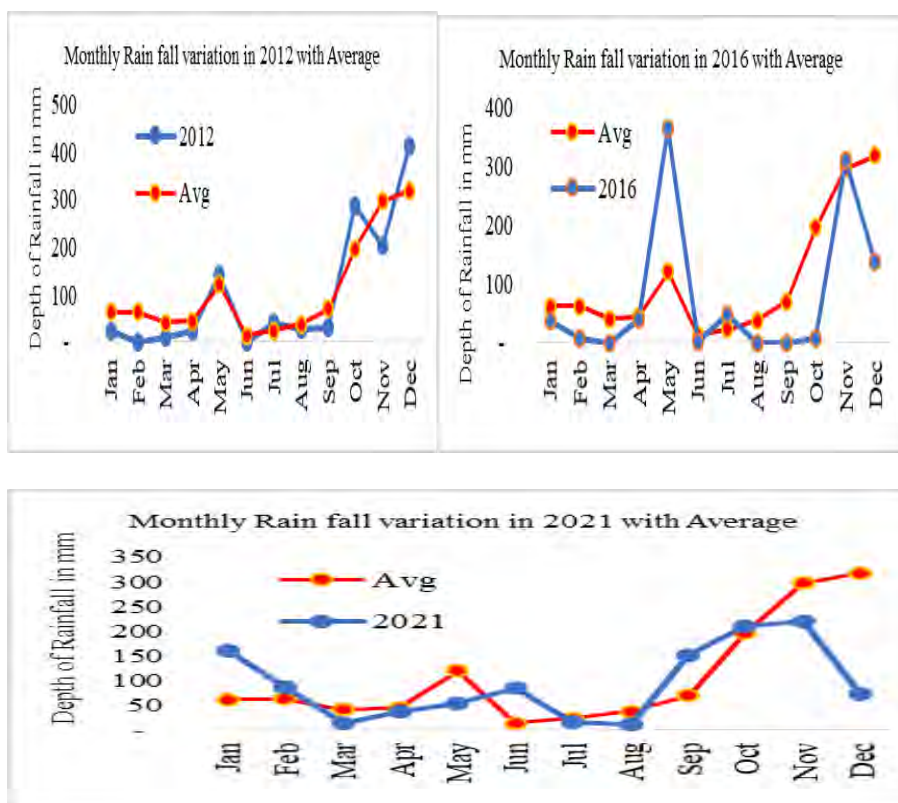


Figure 8: Temporal rainfall variation in Paththinippai cascade

(The source: Annual Resource Profile and Statistics of Poonakary DSD from 2012 to 2021)

b. Extent of Environmental Issues

•**Effect on Domestic Water Supply:**Water is not distributed for domestic drinking purposes from this cascade and there is no domestic water supply identified within the 300m radius of the cascade. The data of transect walk reveals that Iyanarkulam,

Paththinippaikulam, Karumarikulam and Kadaliranchitalvukulam are used for bathing, washing clothes, bathing domestic pets and farm animals, and animals quench thirst.

·**Health Hazard:** Increased hardness of groundwater, fertilizer run-off from farming lands and extensive agricultural practices are associated with incidence of Chronic Kidney Diseases in this area. Studies on groundwater quality indicates that the necessity of prior treatment is required, as most of ground water sources has not met the standard of WHO and contaminated with coliforms and Salmonella.

·**Effect on Flora and Fauna:** High value timber is taken out tree called *Paalai* or *Pallu* is common in the cascade. The communities engage in forestry-related activities such as hunting, timber extraction

On other hand, wild boar, monkey, elephant, deer are affecting the field specially groundnut and pulses.

·**Soil Erosion:** There is a high chance for induced soil erosion due to the rehabilitation of this cascade system. Clearing vegetation, excavation activities, and developing bunds, digging barrow pits, and piling soil are the causes for induce.

Being a flat terrain, there is less chances of getting soil eroded due to agricultural practices. However, if the land preparation is done and exposed to intensive rains occurring during September and October there is more chance for soil erosion as these soils are not much stable. On the other hand, the soil get compacted due to absence of organic manure and tend to generate more runoff leaving soil with low water holding capacity. As a result, the soil soon becomes dry and crops are affected with soil moisture deficit. Since no one has done any study on this aspect in this area, it is appropriate to initiate studies on soil erosion and soil regeneration.

·**Siltation:** There is significant de-siltation was observed in this cascade area. This would have been due to mass scale land clearing for cultivation soon after the war and resettlement. The rehabilitation of the cascade system will mitigate these impacts. Anyway, farmers have an opinion that all the tanks in the cascade should be renovated to enjoy the holistic benefit of the rehabilitation. However, this is not happening as only three tanks out of four are rehabilitated.

·**Encroachment:** There is no encroachment due to rehabilitation.

3.5 Socio-Economic Summary

Tank Name	Total Population	Total Families	Vulnerable Family			
			Women Headed	Disable	Elders	Samurdhi
Paththinippai Tank	38	09	01	01	04	02
Karumari Tank	146	52	02	-	21	29
Iyanarkulam Tank	120	50	03	-	17	33
Total	304	111	06	01	42	64

Table 09: Demographic detail of Paththinippai cascade

3.6 Crop Pattern within the Cascade System



Each farmer possesses land with extents ranging from 2 to 4 acres. They hold deeds for the lands around Iyanarkovil temple.

In the Maha season, a total extent of 136 acres of land is used for paddy, the prominent crop, while 36 acres are dedicated to OFC, but only 41 acres in Yala. Fields are prepared using machinery. Farmers cultivated

red onion a couple of years ago, but it failed, so they switched to tobacco in 1996 and earned significant income. Chilli is cultivated on 6 acres and groundnut on 10 acres using a lift irrigation system, yielding 500kg of groundnut and 4000kg of chilli per acre. Despite having marketing facilities in adjoining towns such as Poonagary, Kilinochchi, and Chavakachcheri, there is no public transport via these villages. Therefore, farmers must transport their products to the nearby village called Mutkompan, where there is very limited transport access.

Based on the water availability in each tank in the cascade, Farmer Organizations and their members decide the extent of cultivation and carefully manage the water in each tank. To sustain soil fertility and control pests and diseases, farmers often practice crop rotation and diversification. After the paddy harvest, chilli and groundnut are grown in rotation. This practice helps maximize land productivity and diversify the cropping index.

There are many possibilities for introducing new crops like long beans, which would cater to the vegetable requirements of the village people.

The total cultivable land extent in the Paththinipai Cascade is around 172 acres in Maha and 41 acres in Yala season, as detailed in Table 09.

No	Name of Tank	Cultivable Extent (ac)			
		Yala		Maha	
		Paddy	OFC	Paddy	OFC
1	Paththinipai tank	0	16.0	84.0	16.0
2	Iyankankulam tank	0	25.0	0	20.0
3	Karumari tank	0	0	52.0	0
	Total	-	41.0	136.0	36.0

Table 10: Details of crop pattern under the small tanks within the cascade

3.7 Details of irrigation management within the cascade system



Irrigation management in the Paththinipai cascade area is crucial for ensuring sustainable agriculture and water resource utilization. Tube wells or open wells are being used for both cultivation and domestic purposes, but the water quality is inadequate for either.

Farmers cultivate chili, groundnut, and brinjal before the tank water level drops.

Due to the restoration of the tank, the water level has risen by an additional 2 feet, and farmers expect that they could extend cultivation for another two months. An abandoned well is available nearby the bund, and villagers can use this well for drinking purposes when settlement takes place.

3.8 Responsibilities Community

The development of Paththinippai cascade system requires a concerted effort from the community to ensure its success and sustainability. Firstly, community members actively participated in the planning process, providing insights, preferences, and traditional knowledge about water management. Their involvement ensured that the system aligns with the community's priorities and respect the cultural practices.

Additionally, community members can contribute to the physical construction of the cascade system, offering labor, skills, and materials where possible. This participatory approach fosters a sense of ownership and pride in the project, enhancing its long-term viability.

Moreover, the community plays a crucial role in maintaining the system once it is operational. This includes regular maintenance of infrastructure, such as clearing debris and repairing any damages, as well as managing water distribution fairly among users.

Furthermore, community education and awareness programs can promote sustainable water usage practices and encourage conservation efforts, ensuring the efficient and equitable management of water resources for current and future generations.

In essence, the success of the Paththinippai cascade system hinges on the active involvement and commitment of the community in all stages of its development and management.

3.9 Cultural Diversity

Paththinippai Cascade embodies a rich tapestry of cultural diversity that reflects the heritage of the region. Nestled amidst lush greenery and serene surroundings, the cascade is not only a natural marvel but also a significant cultural landmark. The area is home to a diverse ethnic community of Tamil population, each contributing their unique traditions and customs to the tapestry of local culture. Visitors to Paththinippai Cascade are often treated to a vibrant display of cultural festivities from Paththinippai Pillaiyar temple, where the worship based traditional music, dance, and culinary delights showcase the harmonious coexistence of the Tamil community.

The cascade serves as a focal point for social gatherings and community events, fostering a sense of unity and solidarity among the residents. As CSIAP explore the cascading waters and verdant landscapes, they are immersed in a cultural mosaic that celebrates the rich heritage of Kilinochchi, making Paththinippai Cascade not just a natural attraction but a symbol of cultural diversity and harmony.

4. Human Interventions

4.1 Completed Government Projects

In the Paththinipai cascade various construction activities have been completed over the past years. Government Stakeholders including Road Development Department, Road Development Authority and Department of Local Government have undertaken road and infrastructure development projects to improve connectivity and accessibility within the Cascade area. The road construction made easy access to the markets in Mulankavil, Kilinochchi, Chavakachcheri and Jaffna. Also, the housing projects supported rebuilding the homes and sanitation facilities in the proposed cascade area. The Ceylon Electricity Board also facilitated the connections to the domestic houses and other community buildings in last decade.

4.2 Ongoing Livelihood Activities within the Cascade

The human livelihood activities occurring within this cascade area include the following:

- **Agriculture:** Agriculture is significant livelihood activity in the cascade area. Farmers cultivate paddy (210ac), vegetables (Chili, pumpkin, tomato and long beans), fruits (cashew, mango & guava), grains (green gram, ground nut, and black gram) and other highland crops depending on the availability of water from the cascade.
- **Forestry and Non-timber Forest Products (NTFPs):** The people collect wood, medicinal herbs and honey. Pallai bears edible, sweet fruit in the season which falls the months May to August. The residents of this cascade pluck the fruit, sell it for passengers and earn a substantial amount.
- **Small-Scale Businesses:** Small-scale retail shops, transportation services and other businesses catering to the local community's needs also exist in the cascade area.
- **Government Employment:** Individuals of this area (03 numbers) are working in Divisional Secretariat of Poonahary and Agriculture Service Centre in the same division as government servants.
- **Inland Fishing:** The farmers from this area engage with the leisure time inland fishing activities at Paththinippai and Iyanarkulam tanks. They requested to promote inland fishing.

- Livestock rearing: The people from the cascade area involve in the animal husbandry such as cattle, goats, and poultry. They bring the cattle from the nearby villages named Karukkaitheevu, Gnanimadam and Sekkalai.

4.3 Planned Activities

3 out of 4 tanks in the cascade are being restored under CSIAP. The proposed restoration works for Paththinipai, Iyanar and Karumari tank were curtailed and Kadalarichchathalvu tank will not be renovated due to the intervention of Department of Forest and Wild life.

No.	Paththinipaikulam	Karumarikulam	Iyanarkulam
1	Improvement of tank bund (Existing and propose) – 908 m	Improvement of tank bund (Existing and propose) – 400 m	Improvement of tank bund (Existing and propose) –725 m
2	Construction of Spill -35 m	Construction of Spill (Cause way type) -50 m	Construction of Spill -52 m
3	Construction of Bathing step - 02	Improvements Spill tail Canal	Construction of Sluice
4	Improvements Spill tail Canal		Improvements Spill tail Canal
5	Construction of Access Road–350m		Construction of canal and O&M Road -925m (Iyanar to paththinipai)
6	Construction of Platform for lift irrigation -03 Nos		

Table 11: Construction activities are planned to be implemented under CSIAP

Tanks in this cascade will be benefited when Mandakallaru Barrage construction is done. However, barrage construction has not yet started because it was included under the project of Wind Power which is going to be funded by the Adani and Group of India.

5. Addressing Critical Issues

5.1 The identified key issues

- **Outdated or Poor Maintenance of the Irrigation Infrastructure:** One of the primary issues in irrigation management is unable to drain the spill water due to existence of natural spill especially in the Paththinipai tank. It is leading to inundation of cultivation



in down-stream while others face water logging and loss



of yeilds. To address this issue, modernizing and upgrading the irrigation infrastructure is very essential.

There is 1Km length of access road and branch channel at Paththinipai tank which feed the water for cultivation is abandoned. It should be renovated for ease transportation of inputs and harvest.

- **Lack of Water Storage Facilities:** Another issue in the cascade area is the limited availability of water storage facilities. During the monsoon season, a significant amount of water is lost due to inadequate storage capacity for these three tanks. Rehabilitating all 04 tanks (Paththinipai, Iyankankulam, Karumari and Kadalarichchathalvu tanks) and constructing small-scale surface water harvesting structures will help to store water and ensure more consistent water availability throughout the year.
- **Inaccurate Irrigation Scheduling:** Inaccurate irrigation schedule cause over- or under-irrigation, negatively impact on crop productivity and water conservation efforts. Implementing modern irrigation management techniques like Precision Agriculture, which utilizes sensors and data analysis can provide real-time information on soil moisture levels, weather patterns, and crop water requirements. This data-driven approach enables using water precisely when and where it is needed and minimizing water wastage.
- **Poor Irrigation Efficiency:** Most of the layman farmers are lack of knowledge about efficient irrigation practices and water management techniques. They adopt surface / flood irrigation methods during cultivation of OFC, fruit crops and perennial crops.

At present, The CSIAP is conducting training programs for SAC and workshops to educate farmers about the benefits of sustainable irrigation practices, including water-saving methods. Considering the soil and weather conditions of the cascade, the introduction of micro irrigation can help to optimize water usage and reduce wastage of water by 25 to 35 %.

- **Climate Change Impacts:** Climate change poses additional challenges to irrigation management in the cascade area. Erratic rainfall patterns, increased temperatures and prolonged dry spells can affect water availability and water requirements for crop. Developing climate-resilient irrigation strategies, such as implementing micro-irrigation systems, using drought-tolerant crop varieties like pumpkin and long beans and practicing conservation agriculture, can help mitigate the adverse impacts of climate change and ensure the sustainability of agriculture in the area.
- **Stakeholder Collaboration and Governance:** Effective irrigation management requires strong collaboration among various stakeholders, including Farmers, Government Agencies and Community Organizations. Establishing participatory irrigation management systems that involve all relevant parties in decision-making processes can lead to more inclusive and sustainable water resource management. Additionally, improving governance structures, promoting transparency and enforcing regulations related to water usage and irrigation practices are essential for efficient and equitable water allocation.

By addressing these key issues and implementing sustainable irrigation management practices, the Paththinipai cascade area, can enhance water efficiency, increase agricultural productivity, and ensure availability of water resources for long-term.

- **Sea water intrusion:** towards the tank area and farm land during rainy season & causes salinity contamination specially on soils fertility and crop yield.
- **Land Fragmentation:** As explained above 47 Farmers used entire land cultivation. This fragmentation challenges the farmers to manage their crops efficiently and limits the mechanized farming practices. It may also lead to difficulties in accessing and maintaining the land.
- **Intensive Irrigation Practices:** Over-extraction of either groundwater or tank water (Surface water) can cause the water scarcity and affect the crop cultivation in yala

season. Remedial measures such as groundwater management and land-use planning is essential to ensure water availability and cultivation.

- **No Safe Place for Water Pumps:** Farmers operate around 15 water pumps to extract water from tank for the lift irrigation systems. Just those pumps are installed along the bund without any safety measures.
- **Displacement of Native Farmers:** Due to the abundant of Iyanar tank, farmers migrated



to 'Karukkaithivu' and they will come back to the native places once the restoration work of Iyanar tank is completed. Hence, they will revive the cultivation in their own land.

- **Soil Erosion:** Water flowing through the cascade system can cause soil erosion, particularly in areas where the sandy type soil. This erosion can lead to loss of fertile topsoil, affecting the long-term productivity of the land.
- **Siltation:** As water moves through the cascade system, it can carry sediment, which may accumulate in lower-lying areas or reservoirs. Sedimentation can reduce the water storage capacity and hinder the effective functioning of the irrigation infrastructure. Regular maintenance and sediment removal are essential to ensure the efficient operation of the cascade system.
- **No Hatchery for Fish Breeding:** There is no any fingerling stocked in the Paththinipai tank. Farmers and Other villagers use hand hook to catch the varieties of fish for their consumption and earn small amount of revenue through selling. This tank has 50 Ac of holding capacity and 10 feet depth in the middle. These features of the tank enable the stocking the fingerlings.
- **Sand Mining:** Excavation of sand in the forest area is the severe problem and it depleted the forestry resources. People from other villages and natives are mining the sand as illegal business activities. Addressing the sand mining requires high level commitment and interest from everyone. The team of this project has burden on shoulders to create awareness and play advocacy role to mitigate or eliminate this issue. Otherwise the consequences would be high risk.

- **Drainage Issues:** Having inadequate drainage systems in Paththinipai tank area can



lead to waterlogging, especially during heavy rainfall or when excessive irrigation occurs. Waterlogged soil can negatively impact crop growth, causing root suffocation and increased susceptibility to diseases. Proper drainage infrastructure is crucial to prevent

waterlogging and ensure optimal growing conditions.

- **Bund Damage due to Livestock Movement:** Around 500 numbers of cattle from adjacent village are coming for grazing and farmers used those cattle for the paddock in their paddy land in order to enhance the soil fertility as traditional practice. The urine and fresh cow dung enrich the soil and minimize the use of inorganic fertilizer. Livestock owners use this command area as grazing land and intensively bring them October to February.



5.2 Critical issues of the cascade system

The critical issues were identified and ranked during the workshop then interventions were proposed for each critical issues.

S/No.	Identified Critical Issues
1	Spill water is not directed in a correct manner
2	Sea water intrusion during the raining season and well water became brackish
3	Wild beast (boar, monkey, elephant, dear etc..) affect the field specially ground nut cultivation
4	Crocodiles in the Pathinipai tank are threat for the cattle
5	Lack of safe drinking water
6	The Electricity connection is not for all of the villagers
7	No hatchery for fish breeding
8	There is no any bathing step for domestic or religious purpose

9	The cattle tread the tank bund and weaken the strength of bund.
10	Siltation affects tank water holding capacity
11	No safety place for water pumps that are being used for the lift irrigation
12	No public transport facilities in Paththinipai area
13	Unusable 1km access road to Paththinipai temple
14	Inadequate water flow to the paddy field
15	Human Elephant conflict
16	Shortage of agriculture machineries
17	Difficulties in getting the land ownership
18	No reservation for grassing lands
19	Poor hygienic facilities
20	Impassable 4km access road called Vedarassan road
21	Restricted water supply for yala cultivation
22	Improper disposal of waste in forest are by the arm forces
23	Illegal deforestation
24	Migration of inhabitances

Table 12: Critical Issues of the cascade system

5.3 Proposed Strategic Interventions

Table 13: Proposed Intervention to overcome the identified issues

S/No.	Identified critical Issues	Rank	Proposed Strategic Interventions
1	Spill water is not directed in a correct manner	4	Cleaning the Spillway and direct spill water towards Pathinipai tank
2	Sea water intrusion during the raining season and well water became brackish	7	Construction of Mandakallaru Barrage
3	Wild beast (boar, monkey, elephant, deer etc..) affect the field specially ground nut cultivation	23	Support to get the Air gun to FOs
4	Crocodiles in the Pathinipai tank are threat for the cattle	11	Advocate the Department of Forest & Department of Wild life to shift the Crocodiles from Paththinipai to Kadalarichchakulam
5	Lack of safe drinking water	3	Restoration of existing well and removal of mud, other debris and apply calcium oxychloride
			Facilitate for installation of RO plant to delicate the drinking purpose and provide awareness on operation & maintenance of the system
6	The Electricity connection is not for all of the villagers	6	Advocate the Ministry of Power and Energy for electricity supply for the whole villagers
7	No hatchery for fish breeding	12	Facilitate the community to get the fingerlings form NAQDA
8	There is no any bathing step for domestic or religious purpose	8	Construction bathing steps closer to the Paththinipai temple
9	The cattle tread the tank bund and weaken the strength of bund.	13	Construction of narrow pathway for livestock mobility next to the bund
10	Siltation affects tank water holding capacity	9	Build the capacity to de-siltation of tank after the tank bed survey.

11	No safety place for water pumps that are being used for the lift irrigation	22	Connect agencies for the construction of pump house
12	No public transport facilities in Paththinipai area	14	Advocate SLTB and Private Bus Owners Association to extend the service
13	Unusable 1km access road to Paththinipai temple	5	Construction of access road to the Paththinipai temple
14	Inadequate water flow to the paddy field	15	Construction of branch channel at the Paththinipai tank
15	Human Elephant conflict	1	Providing Elephant fence for the identified Locations
16	Shortage of agriculture machineries	10	Establish the village level machinery hubs and equip them
17	Difficulties in getting the land ownership	16	Facilitate the farmers through FOs to get legal clearance for their lands.
18	No reservation for grassing lands	17	Convince the Minister of Fisheries to submit the concept paper for establish of pasture land
19	Poor hygienic facilities	18	Negotiate with Divisional Secretary of Poonahary to provide latrine facilities
20	Impassable 4km access road called Vedarassan road	2	Construction of Vedyarasan 4km access road
21	Restricted water supply for yala cultivation	19	Provision of micro irrigation system & promote crop diversification
22	Improper disposal of waste in forest are by the arm forces	20	Strengthen CMC to dialog with Pradesiya Sabha for safety disposal of waste
23	Illegal deforestation	21	Enforce the existing legislation and Conduct awareness programme for forest conservation
24	Migration of inhabitances	24	Reforestation & establishment of agro forestry

5.4 Proposed activities to overcome the identified issues

Table 14: Proposed activities to achieve the targets / specific objectives

S/No.	Identified critical Issues	Proposed strategic interventions	Proposed Activities
1	Human Elephant conflict	Providing Elephant fence for the identified Locations	Providing Elephant fence for the identified areas
2	Impassable 4km access road called Vedarassan road	Construction of Vedyarasan 4km access road	Construction of access road (Vedyarasan Road) – 4km
3	Lack of safe drinking water	Restoration of existing well and removal of mud, other debris and apply calcium oxychloride	Rehabilitation of Common Well at Pathinippai Tank
		Facilitate for installation of RO plant to delicate the drinking purpose and provide awareness on operation & maintenance of the system	Facilitate for installation of an RO plant to desiccate the drinking water of the domestic people and provide awareness on the operation & maintenance of the system
4	Spill water is not directed in a correct manner	Cleaning the Spillway and direct spill water towards Pathinipai tank	spillway clearing and direct spill water towards the Pathinipai tank
5	Unusable 1km access road to Paththinipai temple	Construction of access road to the Pathinipai temple	Construction of access road to the iyanaar temple – 1Km
6	The Electricity connection is not for all of the villagers	Advocate the Ministry of Power and Energy for electricity supply for the whole villagers	Coordinate with relevant authorities to get electricity service connection for the remaining villages
7	Sea water intrusion during the raining season and well water became brackish	Construction of Mandakallaru Barrage	Construction of Saltwater exclusive Barrage at the river mouth of Mandakkal Aru
8	There is no any bathing step for domestic or religious purpose	Construction bathing steps closer to the Paththinipai temple	Construction Bathing steps closer to the Paththinipai temple
9	De-siltation affects tank water holding capacity	Build the capacity to de-siltation of tank after the tank bed survey.	de-siltation of tank after the tank bed survey.

10	Shortage of agriculture machineries	Establish the village level machinery hubs and equip them	Provision of agriculture machineries & establish the village level machinery hubs
11	Crocodiles in the Paththinipai tank are threat for the cattle	Advocate the Department of Forest & Department of Wild life to shift the Crocodiles from Paththinipai to Kadalarichchakulam	capturing the Crocodile from Paththinipai and transfer to Kadalarichchakula with the help of Department of Forest & Department of Wild life
12	No hatchery for fish breeding	Facilitate the community to get the fingerlings form NAQDA	Strengthen the community to get the fingerlings form NAQDA
13	The cattle tread the tank bund and weaken the strength of bund.	Construction of narrow pathway for livestock mobility next to the bund	Construction of narrow pathway for livestock mobility next to the bond
14	No public transport facilities in Paththinipai area	Advocate SLTB and Private Bus Owners Association to extend the service	Discuss with the stakeholder & coordinate for revived the public transport
15	Inadequate water flow to the paddy field	Construction of branch channel at the Paththinipai tank	Construction of branch channel at the Paththinipai tank(700M)
16	Difficulties in getting the land ownership	Facilitate the farmers through FOs to get legal clearance for their lands.	Facilitate the farmers through FOs to get legal clearance for their lands.
17	No reservation for grassing lands	Convince the Minister of Fisheries to submit the concept paper for establish of pasture land	coordinate with the respective department and help to prepare the solution paper Establish the pasture land for free grazing
18	Poor hygienic facilities	Negotiate with Divisional Secretary of Poonahary to provide latrine facilities	Coordinate to link the respective agencies to construct the latrine facilities
19	Restricted water supply for yala cultivation	Provision of micro irrigation system & promote crop diversification	Provision of micro irrigation system & promote croup diversification programme
20	Improper disposal of waste in forest are by the arm forces	Strengthen CMC to dialog with Pradesiya Sabha for safety disposal of waste	Strength for CMC to dialog with Pradesiya Sabha in order to resave land for safety disposal of waste
21	Illegal deforestation	Enforce the existing legislation and Conduct awareness programme for forest conservation	Conduct awareness programme for importance of forest and other legislation of forest and its conservation

[illegible]

Table 18: Proposed Activities with Expected Contribution from Stakeholder Agencies

No.	Proposed Activities	Total Budget (Rs. Mn.)	Expected Budget Contribution in Rs. Mn.			
			Private	Line Agencies	Farmers	Funding Agencies
2	Construction of access road (Vediyarasan Road) – 4km	32		32		
4	Facilitate for installation of an RO plant to desiccate the drinking water of the domestic people and provide awareness on the operation & maintenance of the system	3.0		5.0		
7	Coordinate with relevant authorities to get electricity service connection for the remaining villages	10.0		5.0		
8	Construction of Saltwater exclusive Barrage at the river mouth of Mandakkal Aru	500.0				300.0
12	capturing the Crocodile from Paththinipai and transfer to Kadalarichchakula with the help of Department of Forest & Department of Wild life	1.0		1.0		
15	Discuss with the stakeholder & coordinate for revived the public transport	1.0		1.0		
17	Facilitate the farmers through FOs to get legal clearance for their lands.	1.0		1.0		
18	coordinate with the respective department and help to prepare the solution paper Establish the pasture land for free grazing	1.0		1.0		
19	Coordinate to link the respective agencies to construct the latrine facilities	20.0		20.0		
21	Strength for CMC to dialog with Pradesiya Sabha in order to resave land for safety disposal of waste	1.0		1.0		
24	Support to get the Air gun to FOs	1.0		1.0		

5.6 Interventions and Major Activities Expected to be Implemented by the CSIAP within its Project Period

Table 16: Gannt Chart for Proposed Activities to be Implemented by CSIAP

No.	Proposed Activities	Total Budget (Rs. Mn.)	Time Frame							
			2024/2025				2025/2026			
			3 rd Q	4 th Q	1 st Q	2 nd Q	3 rd Q	4 th Q	1 st Q	2 nd Q
1	Providing Elephant fence for the identified areas	100.0								
3	Rehabilitation of Common Well at Pathinippai Tank	1.0								
5	spillway clearing and direct spill water towards the Pathinipai tank	1.0								
6	Construction of access road to the iyanaar temple – 1Km	8.0								
9	Construction Bathing steps closer to the Paththinipai temple	5.0								
10	de-siltation of tank after the tank bed survey.	1.0								
11	Provision of agriculture machineries & establish the village level machinery hubs	50.0								
13	Strengthen the community to get the fingerlings form NAQDA	2.0								
14	Construction of narrow pathway for livestock mobility next to the bond	5.0								
16	Construction of branch channel at the Paththinipai tank(700M)	5.0								
20	Provision of micro irrigation system & promote croup diversification programme	3.0								
22	Conduct awareness programme for importance of forest and other legislation of forest and its conservation	1.0								
23	Support or find the resources for the construction of pump house for the lift irrigation	20.0								
25	Coordinate with Department of Forest to declarer land as a sanctuary	1.0								
26	Reforestation & establishment of agro forestry	1.0								

6. Implementation methodology of the cascade management plan

CMP should be submitted to the Divisional Agriculture Development Committee and to the District Agriculture Development Committee for approval. After getting the approval, it will be implemented.

The sub project proposals (Attachment No. 04) will be prepared by CMC with the support of the relevant implementing agencies for obtaining capital assistance. Major partner institutions committed to implementing the proposed activities, preparing and supporting existing investment plans, budget, reports and implementation plans, and assist CMC in submitting proposals for grant.

7. Annexure

Annexure 1: Circular No 6 of 2023 issued by the Department of Agrarian Development on 3rd August 2023 to establish Cascade Management Committees

சுற்றறிக்கை இலக்கம் - 06/2023

அனைத்துமாவட்ட செயலாளர்களுக்கும் பிரதேச செயலாளர்களுக்கும்,

குள அடுக்குத்தொடர் அமைப்பு முகாமைத்துவ குழு உருவாக்கம் மற்றும் நடாத்திச் செல்லல் ஒழுங்கு முறைகள்

நாட்டின் உள்ளகத்திலிருந்து கடலுக்கு வழிந்தோடும் பிரதான ஆறுகள் மூன்றாம் நிலை நீர்வழிகள் எனவும், அப்பிரதான ஆறுகளைச் சேரும் கிளை ஆறுகள் இரண்டாம் நிலை நீர்வழிகள் எனவும் அக்கிளை ஆறுகளுக்கு நீர்வழங்கும் சிறிய நீர்வழிகள் ஆரம்ப நிலை நீர்வழிகள் எனவும் அழைக்கப்படும். கிராமிய மட்டத்திலான குளங்களும் நீர்த்தேக்கங்களும் பெரும்பாலும் ஆரம்ப நிலை நீர்வழிகளினூடே அமைக்கப்பட்டுள்ளதோடு பூமியின் மேற்பரப்பில் நீரைத் தேக்கிக் கீழே வழிந்தோடச் செய்ய அமைக்கப்பட்டிருக்கும் வாழிகளும் இதனுள் அடங்கும்.

- நாட்டின் உள்ளகத்தில் காணப்படும் ஆரம்ப நிலை நீர்வழியொன்று அல்லது நீர்வழி வலையமைப்பிலுள்ள நீர்வழி தியாக ஒன்றிணைந்த சிறுமற்றும் நடுத்தர அளவிலான வாழி அமைப்புக்கள் அல்லது குளங்கள் மற்றும் நீர்த்தேக்க அமைப்புக்கள் அல்லது நீர்த்தேக்க அமைப்புக்களினாலான நடுத்தர அளவிலான நீரேந்துபகுதிகள அடுக்குத்தொடர் அமைப்பு எனக் கூறப்படும்.
- இலங்கையில் 1166 குள அடுக்குத்தொடர் அமைப்புக்கள் கண்டுபிடிக்கப்பட்டுள்ளன. இக்குள அடுக்குத்தொடர் அமைப்புக்களை மையமாகக் கொண்டு பிடிக்கப்பட்டுள்ளன. நீரியல், துல்லியம் மற்றும் சமூக பொருளாதார மேம்பாடு குறித்து வளப்பயன்பாட்டினை வினைத்திறனாகவும் நிலையானதாகவும் கொண்டு செல்வத்தை இலக்காகக் கொண்டு 1968 இலக்கம் 48 நீர்ப்பாசன (திருத்தங்கள்) கட்டளைச் சட்டத்தின் திருத்தியமைக்கப்பட்ட 1946 இலக்கம் 32 நீர்ப்பாசன கட்டளைச் சட்டத்தின் 1(அ) 1,2,3,4 உறுப்புரைகளின்பிரகாரம் கமநல அபிவிருத்தி ஆணையாளர் நாயகத்திற்கு வழங்கப்பட்டிருக்கும் அதிகாரங்களுக்கமைய மேற்குறிப்பிட்ட சட்டத்திற்கமைய நடாத்தப்படும் மாவட்ட வேளாண்மை குழுவின் போது, நீர்ப்பாசனத்தைத் தொழிலமை மையமாகக் கொண்ட நெல் உற்பத்தி உள்ளிட்ட வேளாண்மையில் தாக்கம் செலுத்தும் அல்லது அனைத்து துணைக்காரணிகள்குறித்து நடவடிக்கைகளை மேற்கொள்ள குறித்த சட்டத்தினால் உங்களுக்கு வழங்கப்பட்டுள்ள அதிகாரங்களின்பிரகாரம் குள அடுக்குத்தொடர் அமைப்பு முகாமைத்துவ குழுக்களை உருவாக்குதல் மற்றும் நடாத்திச் செல்லுதல் ஒழுங்கு முறைகள் தொடர்பாக வேளாண்மைக்குழுவில் கலந்துரையாடுமாறும் அதற்கு கீழ்க்குறிப்பிட்டுள்ள விடயங்களை வழிகாட்டிகளாகப் பயன்படுத்துமாறு கனிவுடன் தெரிவிக்கிறேன்.
- குள அடுக்குத்தொடர் அமைப்பு முகாமைத்துவ குழுக்களை உருவாக்குவதற்கான குறிக்கோள்கள்
 - குள அடுக்குத்தொடரில் அமைந்துள்ள அனைத்து இயற்கை வளங்கள், அதாவது மண், நீர், வனவளம், உயிரியல் அமைப்புக்கள், காணி மற்றும் நீர்ப்பாசன கட்டமைப்புக்களை முகாமைத்துவம் செய்வதற்காக நலன்விடும் பிள்கள் மற்றும் குறித்த அரசு அதிகாரிகள் ஒருமித்த அணுகு முறையுடன் செயல்படுவதற்கான நிறுவன கட்டமைப்பொன்றினை அமைத்தல்.
 - நீர்ப்பாசன வேளாண்மை, கால்நடை தொடர்பான நடவடிக்கைகள் மற்றும் நன்னீர் மீன்பிடிக்கைத் தொழிலிற்கு நீர்வழங்கல், வனவளம் மற்றும் வனவிலங்குகளின் தேவைப்பாடுகளை சமந்தரமாக நடாத்திச் செல்லல், நிலத்தடி நீரினை உகந்தவாறு பேணுதல் வீட்டுத்தோட்ட பராமரிப்பு உள்ளிட்ட வீட்டு நீர் பாவனையினை முறையாக முகாமைத்துவம் செய்தல்.
 - வேளாண்மை நடவடிக்கைகளுக்கு நீர்ப்பாவனையைப் பவர்கள் உள்ளிட்ட படிநிலை அமைப்பினை பராமரிப்பு செய்வதற்காக வேறுபயனாளிகளும் பங்குதாரர்களின் ஒத்துழைப்பினை பெற்றுக் கொள்ளல்.
- குள அடுக்குத்தொடர் அமைப்பு முகாமைத்துவ குழுக்களை உருவாக்குவதற்கான நோக்கங்கள்
 - குள அடுக்குத்தொடர் அமைப்பு முகாமைத்துவம் மற்றும் நிலையான பேணுக்கைக்காக சட்டபூர்வ அங்கீகாரத்துடன் அனைத்து வன கட்டமைப்பொன்றினை உருவாக்குதல்.
 - ஒவ்வொரு குள அடுக்குத்தொடர் அமைப்புக்களுக்கும் ஏற்ப அதன் செயல்பாட்டிற்கும் நிலையான பாவனைக்கும் தொடர்புடைய பிரச்சினைகளும் முன்மொழிந்த தீர்வுகளை ஒரங்கிணைந்த அணுகு முறையுடன் கலந்தாலோசித்து சட்டபூர்வ அங்கீகாரத்துடன் அனைத்து முறைமை ஒன்றினை உருவாக்குதல்.

- குளஅடுக்குத்தொடரிற்குள் உள்ளவேளாண்மை, நீர்முகாமைத்துவ, தூழலியல், சமூகபொருளாதாரமற்றும்புவியியல்காரணிஅமைப்பின்செயல்திறனுக்காகதொடர்ச்சியாகவும்வினைத்திறனாகவும்நடாத்திச்செல்வதற்கானமுறைமையொன்றைஏற்படுத்தல்.
- குளஅடுக்குத்தொடர்அமைப்பின்அபிவிருத்திநடவடிக்கைகளில்முழுஅமைப்பிற்கும்இடம்பெறும்சேதங்களைத்துடுத்துதேவைகளைஉறுதிப்படுத்தல், நீர்வளத்தினைவினைத்திறனானமுறையில்பாவனைசெய்வதற்காகசாகுபடிஉற்பத்தியினைஅடித்தளமாகக்கொண்டுதிட்டங்களைநிர்மாணித்தல்.
- குளஅடுக்குத்தொடர்அமைப்பிற்குஒருங்கிணைந்தவேளாண்மைஉற்பத்திதிட்டமொன்றினைநிர்மாணித்தல்மற்றும்அத்திட்டத்தின்செயல்திறன்நிலைமையகண்காணித்தல்.
- குளஅடுக்குத்தொடர்அமைப்பொன்றில்காணப்படவேண்டியசூறுகளைமாற்றுவதற்குதேவையானநடவடிக்கைகளைமேற்கொள்ளல்.
- குளஅடுக்குத்தொடர்அமைப்புடன்தொடர்புடையசமூகபொருளாதாரதொடர்புகளைபேணுதல்மற்றும்அதுதொடர்பிலானங்குதாரர்களைவிழிப்புணர்த்துதல்.
- குளஅடுக்குத்தொடர்அமைப்புமுகாமைத்துவகுழுவின்பணிகள்
 - குளஅடுக்குத்தொடர்அமைப்பிற்கானதிட்டங்களைதயாரித்தல், நடைமுறைப்படுத்தல்மற்றும்கண்காணித்தல்.
 - குளஅடுக்குத்தொடர்அமைப்புமுகாமைத்துவகுழுஅங்கத்தவர்களால்முன்வைக்கப்படும்பிரச்சினைகள், முன்மொழிவுகள்மற்றும்திட்டங்களுக்காகதீர்வுகளைமுன்வைத்தாலும்தீர்வுகாணமுடியாதபிரச்சனைகளைபொருத்தமானபிரதேச / மாவட்டவேளாண்மைகுழுவிடம்முன்வைத்துதீர்த்துக்கொள்ளல்.
 - குளஅடுக்குத்தொடர்அமைப்புமுகாமைத்துவத்துடன்தொடர்புடையஅறிக்கையினைசந்தர்ப்பத்திற்கேற்றவாறுபிரதேச / மாவட்டவேளாண்மைகுழுவிடம்முன்வைத்தல்.
 - கிராமியகுளஅடுக்குத்தொடர்களில்அமையப்பெற்றிருக்கும்அனைத்துநீர்மூலங்களமற்றும்நீர்நுகர்வோர்கள்ஒன்றினைத்துகுளஅடுக்குத்தொடர்சேர்ந்தமத்தியநீர்ப்பிடிப்புப்பகுதிக்காகஒருங்கிணைந்தவேளாண்மைதிட்டமொன்றினைஉருவாக்கிநடைமுறைப்படுத்தல்.
 - குளஅடுக்குத்தொடர்அமைப்பொன்றினுள்ளநடவடிக்கைகளில்ஈடுபடும்அனைத்துநீர்நுகர்வோர்களினதும்தேவைப்பாடுகளுக்கேற்பநீர்ப்பிடிப்பிரதேசத்திலுள்ளஇயற்கைவளமுகாமைத்துவம் தொடர்பிலானநீர்மானங்களைமேற்கொள்ளுதல்மற்றும்நடைமுறைப்படுத்துதல்.
 - இயற்கைஅனர்த்தங்கள், அழிவுகள், தீங்குவிளைவிக்கும்மனிதநடவடிக்கைகளைகுறைக்கக்கூடியவகையில்அனைத்துநீர்மூலங்களையும்முகாமைசெய்தல்.
 - குளஅடுக்குத்தொடரிலுள்ளஅனைத்துநீர்மூலங்களையும்மையமாகக்கொண்டநீர்வாடிக்கையாளர்களுக்கிடையேவினைத்திறனானதகவல்தொடர்பாடல்முறையொன்றினைஉருவாக்குதல்.
 - படிநிலையிலுள்ளசுற்றுச்சூழல்அமைப்புக்களுடன்தொடர்புடையஉள்ளீடுகள்மற்றும்வெளியீடுகள்திறனானமுறையில்முகாமைத்துவம்செய்யமுறையானவழிமுறைஒன்றினைஉருவாக்குதல்.
 - தற்போதையமற்றும்எதிர்காலத்தில்நிகழும்எனகணிக்கப்படும்காலநிலைமாற்றங்களுக்குதகுந்தகாலநிலைநட்புஉபாயமுறைதிட்டங்களைநடைமுறைப்படுத்தலும்தீர்நுகர்வோர்களைஅவ்வாறானகாலநிலைமாற்றங்களுக்குபழக்கப்படுத்துதல்.
 - குளஅடுக்குத்தொடர்அமைப்புமுறைமைக்குள்நீர்வாடிக்கையாளர்களிடையேஅறிவு, திறன், மனப்பாங்குமற்றும்வளங்களைவினைத்திறனானமுறையில்பரிமாற்றம்செய்துகொள்ளல்.
 - நீர்நுகர்வோர்களின்காணி, நீர்மற்றும்சுற்றுச்சூழல்அமைப்புக்களின்வினைத்திறனைமேம்படுத்துவதற்கானநடவடிக்கைகளைமேற்கொள்ளல்.
 - வேளாண்மைக்குமற்றும்நீர்நுகர்விற்கேற்றசுற்றுச்சூழல்அமைப்புக்களுடன்தொடர்புடையபாரம்பரியசட்டங்களமற்றும்இயற்றப்பட்டசட்டங்களைஅமுலுக்குகொண்டுவருவதற்குத்தேவையானஆதரவினைவழங்குதல்.
 - காணிஉரித்துடையவிவசாயிகள்மற்றும்உரிமையாளர்களின்கூட்டத்தினை(சாகுபடிஉற்பத்திக்கூட்டம்) நடாத்ததேவையானஅடிப்படைநீர்மானங்களைமேற்கொள்ளவிவசாயிகளுக்குஉதவிபுரிதல்,அதனோடுதொடர்புடையஒருங்கிணைப்புநடவடிக்கைகளைமேற்கொள்ளுதல்மற்றும்கண்காணித்தல்.
 - குளஅடுக்குத்தொடர்அமைப்புஅதிகாரப்பிரதேசக்குள்ளானஅனைத்துநீர்மூலங்கள்மற்றும்அதனோடுதொடர்புடையஏனையசுற்றுச்சூழல்அமைப்புக்களின்நிலையானதன்மையினைபேணுவதற்காககுறித்தகுறித்தஅரசநிறுவனங்களின்வழிகாட்டல்கள்மற்றும்அறிவுறுத்தல்களைபின்பற்றிபாதுகாப்பதற்குஉரியநடவடிக்கைகளைமேற்கொள்ளல்.
 - குளஅடுக்குத்தொடர்அமைப்பிற்குபாதிப்பினைஉண்டாக்கும்பங்குதாரர்களுக்குஎதிராகசட்டசெயற்பாடுகளைமேற்கொள்வதற்குதேவையானநடவடிக்கைகளைமேற்கொள்ளல்.
 - குளஅடுக்குத்தொடர்அமைப்பின்அனைத்துஅபிவிருத்திநடவடிக்கைகளிலும்செயன்முறைநியாயகபங்களிப்பினைவழங்கலும்முன்னேற்றத்தைகலந்தாலோசித்தலும்

- குளஅடுக்குத்தொடர் அமைப்பில் நீர்ப்பாசனகைத்தொழிலில் கூட்ட தீர்மானங்களை நடைமுறைப்படுத்தும் நிலைமையினை கண்காணித்தல்.
- குளஅடுக்குத்தொடர் அமைப்பின் நீர்ப்பாசனகைத்தொழில்களின் செயல்பாடுகள் மற்றும் பராமரிப்பு நிகழ்வுகளை கண்காணித்தல்.

• குளஅடுக்குத்தொடர் அமைப்பு முகாமைத்துவ குழுவின் கலவை

• பிரதேச மட்டம்

இக்குழுகுறித்த பிரதேச செயலக அதிகாரப் பிரதேசத்தின் கீழுள்ள அதிகாரிகளினால் உள்ளடக்கியதாகும்.

- பிரதேச செயலாளர்
- கமநல அபிவிருத்தி பிரதேச அதிகாரி
- வேளாண்மை ஆலோசகர்
- மாகாண நீர்ப்பாசன நினைக்களத்தினை பிரதிநிதித்துவப்படுத்துமாறு பொறியியலாளர் / தொழிநுட்ப அதிகாரி
- கமநல அபிவிருத்தி நினைக்களத்தினை பிரதிநிதித்துவப்படுத்தும் பிரதேச பொருளியலாளர் / தொழிநுட்ப அதிகாரி
- வேளாண்மை ஆராய்ச்சி மற்றும் உற்பத்தி உதவியாளர்
- கிராம அலுவலர்
- சமுத்திர அபிவிருத்தி உத்தியோகத்தர்
- பொருளாதார அபிவிருத்தி உத்தியோகத்தர்
- காணிப்பயன்பாடு மற்றும் கொள்கை உருவாக்க நினைக்களத்தினை பிரதிநிதி ஒருவர்
- மாகாண மீன்பிடித்தினைக்களத்தினை பிரதிநிதி ஒருவர்
- நீர் உயிரின வளர்ப்பு அபிவிருத்தி அதிகாரசபையினை பிரதிநிதி ஒருவர்
- சுற்றாடல் அதிகாரசபையினை பிரதிநிதி ஒருவர்
- பொலிஸ் சுற்றாடல் பிரிவினை பிரதிநிதி ஒருவர்
- விலங்குற்பத்தி மற்றும் சுகாதார நினைக்களத்தினை பிரதிநிதி ஒருவர்
- வேளாண்மை மற்றும் கமநல காப்புறுதி சபையினை பிரதிநிதி ஒருவர்
- நீர்ப்பாசன பொறியியலாளர் / தொழிநுட்ப அதிகாரி
- வனசீவராசிகள்பாதுகாப்புத்தினைக்களத்தினை பிரதிநிதி ஒருவர்
- வனப்பாதுகாப்புத்தினைக்களத்தினை பிரதிநிதி ஒருவர்
- புவிச்சரித வியல் மற்றும் சுரங்கப்பணியகத்தினை பிரதிநிதி ஒருவர்
- தேசிய நீர்வழங்கல் மற்றும் வடிகாலமைப்பு சபையினை பிரதிநிதி ஒருவர்
- தொல்பொருளியல் நினைக்களத்தினை பிரதிநிதி ஒருவர்
- சிவில் பாதுகாப்புத்தினைக்களத்தினை பிரதிநிதி ஒருவர்
- உள்ளூராட்சி நிறுவனங்களை பிரதிநிதித்துவப்படுத்தும் அதிகார முடைய அலுவலர் ஒருவர்
- விவசாய அமைப்புக்கள், மாதர் விவசாய அமைப்புக்கள், உற்பத்தி விவசாய குழுக்களை பிரதிநிதித்துவப்படுத்தி ஒவ்வொரு அமைப்புக்களினதும் தலைவர் அல்லது செயலாளர்
- சமுதாய நீர்வழங்கல் அமைப்பொன்றினை பிரதிநிதி ஒருவர்
- வேறு சமூக அமைப்புக்கள் மற்றும் சுற்றாடல் அமைப்புக்களை பிரதிநிதித்துவப்படுத்தி அமைப்பொன்றினை பிரதிநிதி ஒருவர்

• மாவட்ட மட்டம்

இக்குழுகுறித்த மாவட்டத்தின் கீழுள்ள அதிகாரிகளை உள்ளடக்கியது.

- மாவட்ட தலைவர் அல்லது மாவட்ட செயலாளர்
- பிரதேச செயலாளர்
- கமநல அபிவிருத்தி பிரதி / உதவி ஆணையாளர்
- உள்ளூராட்சி நிறுவனங்களை பிரதிநிதித்துவப்படுத்தி உள்ளூராட்சி உதவி ஆணையாளர் அல்லது பிரதிநிதி ஒருவர்
- மாவட்ட வேளாண்மை பணிப்பாளர்
- மாகாண மற்றும் மாகாணங்களுக்கிடையேயான பிரதிவேளாண்மை பணிப்பாளர்கள்
- நீர்ப்பாசனத் துறைபணிப்பாளர் அல்லது பிரதான பொறியியலாளர்
- மாகாண நீர்ப்பாசன நினைக்களத்தினை பிரதிநிதித்துவப்படுத்தி பிரதிபணிப்பாளர் அல்லது பிரதிநிதி ஒருவர்
- காணி உபயோகம் மற்றும் கொள்கை உருவாக்க நினைக்களத்தின் உதவிப்பணிப்பாளர் அல்லது மாவட்ட அதிகாரி
- மாகாண மீன்பிடித்தினைக்களத்தினை பணிப்பாளர் அல்லது பிரதிநிதி ஒருவர்

- நீர்உயிரினவளர்ப்புஅபிவிருத்திஅதிகாரசபையின்உதவிப்பணிப்பாளர்அல்லதுமாவட்டஅதிகாரி
- சுற்றாடல்அதிகாரசபையின்மாவட்டஉதவிப்பணிப்பாளர்அல்லதுமாவட்டஅதிகாரி
- விலங்குற்பத்திமற்றும்சுகாதாரதிணைக்களத்தின்பிரதிப்பணிப்பாளர்அல்லதுபிரதிநிதிஒருவர்
- வேளாண்மைமற்றும்கமநலகாப்புறுதிசபையின்உதவிப்பணிப்பாளர்அல்லதுபிரதிநிதிஒருவர்
- வனசீவராசிகள்பாதுகாப்புத்திணைக்களத்தின்உதவிப்பணிப்பாளர்அல்லதுமாவட்டஅதிகாரி
- வனப்பாதுகாப்புத்திணைக்களத்தின்மாவட்டவனப்பாதுகாப்புஅதிகாரிஅல்லதுபிரதிநிதிஒருவர்
- தேசியநீர்வழங்கல்மற்றும்வடிகாலமைப்புசபையின்மாவட்டஅதிகாரிஅல்லதுபொறியியலாளர்
- தொல்பொருளியல்திணைக்களத்தின்உதவிப்பணிப்பாளர்அல்லதுமாவட்டஅதிகாரி
- புவிச்சரிதவியல்மற்றும்சுரங்கப்பணியகத்தின்பிரதிநிதிஒருவர்
- கமநலஅபிவிருத்திபிரதேசஅதிகாரி
- பொலிஸ்சுற்றாடல்பிரிவின்றிலையஅதிகாரி
- சிவில்பாதுகாப்புத்திணைக்களத்தின்பிரதிநிதிஒருவர்
- மாவட்டவிவசாயஅமைப்புக்களின்சுட்டமைப்பினைபிரதிநிதித்துவப்படுத்திதலைவர் / செயலாளர்அல்லதுபிரதிநிதிஒருவர்
- சமூகநீர்வழங்கல்அமைப்பின்பொறுப்பதிகாரிஅல்லதுமாவட்டபிரதிநிதிஒருவர்
- வேறுசமூகஅமைப்புக்கள்மற்றும்சுற்றாடல்அமைப்புக்களின்மாவட்டமட்டத்தினைபிரதிநிதித்துவப்படுத்திஒருஅமைப்பிலிருந்துஒருபிரதிநிதி

க:வே

குளஅடுக்குத்தொடர்அமைப்புக் கட்டுப்பாட்டுபிரதேசஎல்லைக்குள்குறித்தறிவனத்தில் கட்டுப்பாட்டுபிரதேசங்கள்ஒன்றைவிடக்கூடுதலாகக்காணப்படும்சந்தர்ப்பத்தில்அவ்வகட்டுப்பாட்டுபிரதேசங்களைபிரதிநிதித்துவப்படுத்திமேலுள்ளவாறுபொறுப்பதிகாரிகள்கலந்துகொள்ளவேண்டும்.

- குளஅடுக்குத்தொடர்அமைப்புமுகாமைத்துவகுழுவொன்றின்அதிகாரிகளுமாம் - பிரதேசமட்டம்
 - படிநிலைஅமைப்பிற்குபிரதேசசெயலாளர்பிரிவுகள்ஒன்றைவிடக்கூடுதல்காணப்படும்சந்தர்ப்பத்தில்கலந்துகொள்ளும்அனைத்துபிரதேசசெயலாளர்களும்குழுவின்இணைத்தலைவராகஉத்தியோகபூர்வமாகசெயல்படவேண்டும்.
 - படிநிலைஅமைப்பிற்கானகமநலசேவைகட்டுப்பாட்டுபிரதேசத்தில்கமநலஅபிவிருத்திபிரதேசஅதிகாரிகுழுவின்செயலாளராகஉத்தியோகபூர்வமாகசெயல்படவேண்டும். படிநிலைஅமைப்பிற்குகமநலசேவைகட்டுப்பாட்டுபிரதேசங்கள்ஒன்றைவிடக்கூடுதல்காணப்படும்சந்தர்ப்பங்களில்சூடியநீரேந்துஏக்கர்எண்ணிக்கையினைகொண்டகட்டுப்பாட்டுபிரதேசத்தின்கமநலஅபிவிருத்திபிரதேசஅதிகாரிசெயலாளராகசெயல்படவேண்டும்.
 - குழுதலைவரின்அறிவுரைகளுக்கேற்பசெயலாளரால்சுட்டம்ஏற்பாடுசெய்யப்படவேண்டும்.
- குளஅடுக்குத்தொடர்அமைப்புமுகாமைத்துவகுழுவொன்றின்அதிகாரிகளுமாம் - மாவட்டமட்டம்
 - குளஅடுக்குத்தொடர்அமைப்பிற்குமாவட்டங்கள்ஒன்றைவிடக்கூடுதல்காணப்படும்சந்தர்ப்பத்தில்கலந்துகொள்ளும்அனைத்துமாவட்டசெயலாளர்களும்குழுவின்இணைத்தலைவராகஉத்தியோகபூர்வமாகசெயல்படவேண்டும்.
 - குளஅடுக்குத்தொடர்அமைப்பின்மாவட்டபிரதி உதவிஆணையாளர்களுக்குழுவின்செயலாளராகஉத்தியோகபூர்வமாகசெயல்படவேண்டும். குளஅடுக்குத்தொடர்அமைப்பிற்குகமநலசேவைகட்டுப்பாட்டுபிரதேசங்கள்ஒன்றைவிடக்கூடுதல்காணப்படும்சந்தர்ப்பங்களில்சூடியநீரேந்துஏக்கர்எண்ணிக்கையினைகொண்டமாவட்டபிரதி / உதவிஆணையாளர்கள்செயலாளராகசெயல்படவேண்டும்.
 - குழுதலைவரின்அறிவுரைகளுக்கேற்பசெயலாளரால்சுட்டம்ஏற்பாடுசெய்யப்படவேண்டும்.
- இலங்கையின்வேளாண்மைத்துறையின்நிலையானதன்மைதங்கிநிற்கும்பிரதானகாரணியானஉயிரியல்அமைப்புக்களின்முகாமைத்துவத்திற்காககுளஅடுக்குத்தொடர்நீர்ப்பாசனமுகாமைத்துவத்தினைமுறைமையாக்குமுகமாகஉருவாக்கப்படும்குளஅடுக்குத்தொடர்அமைப்புமுகாமைத்துவகுழுக்கள்மூலம் எதிர்பார்க்கப்படும்பணிகளைநிறைவேற்றஒருங்கிணைந்துசெயற்படுவீர்கள்எனஎதிர்பார்க்கின்றேன்.

ஏ.எச்.எம்.எல்.அபேரத்ன
கமநலஅபிவிருத்திஆணையாளர்நாயகம்

பிரதி :-

- செயலாளர், பொதுநிர்வாக, உள்நாட்டலுவல்கள்,
மாகாணசபைகள்மற்றும்உள்ளூராட்சிஅமைச்சு
- செயலாளர், விவசாயத்திணைக்களம்
- அனைத்துமாகாணபிரதானசெயலாளர்கள்
- கணக்காய்வாளர், தேசியகணக்காய்வுஅலுவலகம்
- பொலிஸ்மா அதிபர், இலங்கைபொலிஸ்திணைக்களம்
- பணிப்பாளர்நாயகம், விவசாயத்திணைக்களம்
- பணிப்பாளர்நாயகம், நீர்ப்பாசனத்திணைக்களம்
- பணிப்பாளர்நாயகம், சமுத்திரஅபிவிருத்தித்திணைக்களம்
- பணிப்பாளர்நாயகம், வனசீவராசிகள்பாதுகாப்புத்திணைக்களம்
- வனப்பாதுகாப்புநாயகம், வனப்பாதுகாப்புத்திணைக்களம்
- பணிப்பாளர்நாயகம், விலங்குற்பத்திமற்றும்சுகாதாரத்திணைக்களம்
- பணிப்பாளர்நாயகம், காணிஉபயோககொள்கைதிட்டமிடல்திணைக்களம்
- பணிப்பாளர்நாயகம், தொல்பொருளியல்திணைக்களம்
- பணிப்பாளர்நாயகம், இலங்கைசிவில்பாதுகாப்புத்திணைக்களம்
- பணிப்பாளர்நாயகம், நீர்உயிரினவளர்ப்புஅபிவிருத்திஅதிகாரசபை
- பணிப்பாளர்நாயகம், மத்தியசுற்றாடல்அதிகாரசபை
- பணிப்பாளர்நாயகம், புவிச்சரிதவியல்மற்றும்சுரங்கப்பணியகம்
- தலைவர், வேளாண்மைமற்றும்கமநலகாப்புறுதிசபை
- தலைவர், தேசியநீர்வழங்கல்மற்றும்வடிகாலமைப்புசபை
- அனைத்துமாகாணசெயலாளர்கள், மாகாணவேளாண்மைத்திணைக்களம்
- செயலாளர், மாகாணநீர்ப்பாசனஅமைச்சு
- அனைத்துமாகாணவேளாண்மைபணிப்பாளர்கள், மாகாணவேளாண்மைத்திணைக்களம்
- அனைத்துமாகாணவிலங்குற்பத்திமற்றும்சுகாதாரப்பணிப்பாளர்கள்,
மாகாணவிலங்குற்பத்திமற்றும்சுகாதாரத்திணைக்களம்
- கருத்திட்டபிரதானிகள் - CSIAP / CRIWMP / SARP
- அனைத்துகமநலஅபிவிருத்திபிரதி / உதவிஆணையாளர்கள்

(தகவலறிவதற்காகவும்தேவையானவிவகாரங்களுக்காக)

Annexures 2: List of stakeholder agencies participated in transact walk to learn the participated in transact walk to learn the Paththinipai cascade system.



Climate Smart Irrigated Agriculture Project (CSIAP), Northern Province.

Attendance of Participations

Province : Northern DS Division : Poonery Venue : Paththinipai Cascade
 District : Kilinochchi ASC Division : Poonery Date : 22/02/2024
 Objectives of the Programme / Awareness : Transact walk

No	Name of the Participant (අමුත්)	Name of the Organization (அமைப்பு)	ID NO (உதவி. இல)	Contact no (உதவி. இல)	M (ஆண்) / F (பெண்)	Signature
1	P. Kujilini	ASC Poonery	9752800984	0774160936	F	P. Kujilini
2	S. Nithusha	"	986472460V	"	F	S. Nithusha
3	A. Piruntha	ASC Poonery	898000753V	0777258315	F	A. Piruntha
4	S. Sasuthaman	ASC Poonery	19841653367	0770393040	M	S. Sasuthaman
5	B. Banathan	DNA - NP	951001650V	077043743	M	B. Banathan
6	P. Tharajanjan	DWC	199434603000	0767856494	M	P. Tharajanjan
7	S. Kopisanan		199908600521	0766105039	M	S. Kopisanan
8	A. Yogeshwaran	CSIAP			M	A. Yogeshwaran
9	B. Prathap	CSIAP			M	B. Prathap
10	K. Dinushan	DND	872650820V	0770890397	M	K. Dinushan
11	H. Hargisai	CSIAP			M	H. Hargisai
12	S. Jifriy Alex Vase	CSIAP			M	S. Jifriy Alex Vase
13	V. Vasanthakumar				M	V. Vasanthakumar
14	Dr. S. S. S. S. S.		0766981714		M	Dr. S. S. S. S. S.
15	Dr. S. S. S. S. S.		0776513512		M	Dr. S. S. S. S. S.

72070/2

M - 36
F - 9
45



Climate Smart Irrigated Agriculture Project (CSIAP), Northern Province.

Attendance of Participations

Province : Northern

DS Division : Poonakari

Venue : Paththinipai Cascade

District : Kilinochchi

ASC Division : Poonakari

Date : 22/02/2024

Objectives of the Programme / Awareness :

No	Name of the Participant (අමුත්තා)	Name of the Organization (පාලකයා)	ID NO (ප්‍ර.ව.ව. අංකය)	Contact no (දුරකථන අංකය)	M (මුත්තා) / F (අමුත්තා)	Signature
1	B. ඩයියානා				M	B. ඩයියානා
2	B. ඩයියානා				M	B. ඩයියානා
3	B. ඩයියානා	පුද්ගලික	800774424	0771746617	M	B. ඩයියානා
4	N. Nanthakapana				M	Nanthakapana
5	B. ඩයියානා	පුද්ගලික			F	B. ඩයියානා
6	B. ඩයියානා	පුද්ගලික	92232486TV	0778671815	M	B. ඩයියානා
7	L. ඩයියානා	පුද්ගලික	762250683V	0773326825	M	L. ඩයියානා
8	B. ඩයියානා	පුද්ගලික	021773803V	0763322396	M	B. ඩයියානා
9	B. ඩයියානා	පුද්ගලික		0774324888	M	B. ඩයියානා
10	S. Piratharajan	CSIAP	1995 30301396	0774159650	M	S. Piratharajan
11	S. Sharanga	CSIAP			F	S. Sharanga
12	P. Thiviya	CSIAP	-	0771166798	F	P. Thiviya
13	K. Kuna Seelan	Agrarian		0774811972	M	K. Kuna Seelan
14	S. Thusiyanathan	DLR		0775283865	M	S. Thusiyanathan
15	Eng. Tisyanathan	DLR		0774292827	M	Eng. Tisyanathan



Climate Smart Irrigated Agriculture Project (CSIAP), Northern Province.

Attendance of Participations

Province : Northern

DS Division : Poonakerni

Venue : Paththinippai Cascade

District : Kilinochchi

ASC Division : Poonakerni

Date : 22/02/2024

Objectives of the Programme / Awareness :

No	Name of the Participant (பேர்)	Name of the Organization (அமைப்பு)	ID NO (தே.அ.அ. இல)	Contact no (தே.பே.இல)	M (ஆண்) / F (பெண்)	Signature
1	K. Dhanasekaran	Arasapuram			M	
2	M. Dilaganr				M	
3	K. Vasanthan	CSIAP			M	
4	R. Suresan	Arasapuram			M	
5	S. Arudchelum	DS DISTRICT			M	
6	P. Mahipura				M	
7	S. Manikandan	Arasapuram			M	
8	P. Pirasath.	12			M	
9	M. Chandrasekhar	23			F	
10	M. Arasapuram	23			F	
11	S. Srinivasan	23			M	
12	T. Dileepan	23			F	
13	A. Suresan	1			M	
14	D. Suresan	2			M	
15	S. Nilajan	CSIAP			M	

Annexure 3: List of Stakeholders to prepare and validate the Cascade Management Plan

No.	Position	Name	Contact No.	Address
1	Chairman	S. Arudchelvam	077-6478729	ADP, DS Office, Poonakary
2	Co-Chairman	M.Delucshan	077-8948818	Farmer, Oyamarikulam
3	Secretary	K. Kunaseelan	077-4811472	ADO, Poonakary
4	Members	B. Banushan	077-0439434	AI, Pallikuda
5	Members	T. Tisiyanthan	074-2928217	IE, DOI, Kilinochchi
6	Members	Y. Srirangan	077-3692649	TO, DAD, Kilinochchi
7	Members	P. Thevasajeevan	076-9856494	RO, DWL, Kilinochchi
8	Members	I. G. C. Anura Kumara	077-4199983	Range Forest Office, Poonakary
9	Members	T. Kirusnasamy	077-1010626	Farmer, Semmankunru
10	Members	I. Koneshwaran	077-1267265	Farmer, Sinnakulam
11	Members	K. Rajeswaran	077-0382969	Farmer, Thikkirikulam
12	Members	S. vinayakamoorthy	077-5297113	Farmer, Thelikaraikulam
13	Members	S. Yasotharan	077-1020436	Farmer, Enochchikulam
14	Members	S. Ragulan	077-5277841	Farmer, Vannantherikulam
15	Members	V. Vijayakamalan	076-5693784	Farmer, Periyakulam
16	Members	C. Shanthakumary	077-0670469	Farmer, Ulavukoduththaankulam
17	Members	N. Sakthvel	077-1978788	President, RDS, Pallikuda

18	Members	A. Jeyanthi	077-8365586	President, WFO, Pallikuda
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Annexure 4: Guidance format for preparation of subproject proposals to raise funds to implement interventions and major activities

1. Administrative Details:

No	Matters	Details
1	Contact details of proposal submitting agency: (postal, e-mail, telephone etc	
2	Contact Details of the implementing agency: (postal, e-mail, telephone etc.)	
3	Contact details with the position of the person responsible for providing information of the proposal (e-mail, telephone – land/mobile:	
4	Sector of the proposal (rehabilitation of tanks/catchment treatment/agriculture practices/ marketing/ institutional development/technology transferring/training/other (specify etc.).	
5	Ref. no of the concurrence of the Divisional Agriculture Committee (DAC).	

2. Sub-Project Details:

2.1. Title of the Sub-Project (Please note that the name may be very similar to that of the project development objective, but not in all time):

.....

2.2. Summary of the sub-project (please give a very brief paragraph answering the questions of what it is, why it is, who it is, where it is and when it is implemented? The estimated total cost is also needed).

.....

2.3. Project Location (details such as cascade, Agrarian Service Centre, Local Government Ward, GN Division etc. If the project location is considered as a highly vulnerable area to flood or drought, please indicate that too).

.....

2.4. Project issue/rational/justification (This is very important and is considered as the main part of the proposal. Therefore, please highlight what the issue, how it is impacted on the farmers, how it was identified and what bad effects would happen, if it is not resolved).

.....

2.5. How the critical issue was identified? (through community consultations, requests from farmer organisations, cascade management plan etc.).

.....

2.6. Objective of the sub-project (please formulate this in very rational manner since it is important for the monitoring purpose).

.....

2.7. Specific Objectives (Specific objectives need to be developed according to SMART form and this is also very important for the monitoring purpose.

1.

2.

2.8. Proposed sub- project activities (This part needs to be described very rationally and what actions the implementing agency proposed to address the critical issue and how it contributes to achieve the project objective?

.....

2.9. Expected results (these may be economic, political, social, environment, cultural, nutritional etc.).

1.

2.

2.10. Beneficiaries (The nature of the beneficiaries – In addition to number of male and female, please indicate other characteristics also such as belonging to low-income or indigenous groups, affected by war etc.).

.....

2.11. Who of the beneficiaries will participate in implementation?

2.12. How do women get benefited?

.....

2.13. Who will be responsible for operation and maintenance (O&M) including estimated cost for O&M?

.....

2.14. Potential Risks and strategies propose to minimize the risks

2.15. Does the project fall either under the negative list or prescribed list?

(a) If, Yes, please explain whether IEE or EIA is required.

.....

(b) If No, IEER/EIS format will be required.

2.16. Name/names of the proposed farmer organizations or producer organizations that could be got involved in implementing the sub-project (if applicable, details need to be annexed).

.....

3. Implementation methodology

3.1. How the project is planned to be implemented and with what stakeholders etc? (describe with adequate details).

.....

3.1. Tendering process (explain how it is planned to procure required materials).

3.2. Activity plan (describe the activity plan with the time frame and the responsible agencies/persons in implementation. This need to be describe using a Gantt chart).

4. Subproject Monitoring Mechanism: (This is very important. Therefore, please describe how the monitoring activities are taken place providing adequate details).

.....

5. Subproject Evaluation Mechanism: (please indicate how the implementing agency plans to evaluate the project and at what intervals).

.....

6. Reporting arrangement (please describe who will take the responsibility of making both financial and progress reporting and also the expected time period).

7. Estimated Cost:

No	Major Activity	Total estimated cost in LKR	Community Contribution (LKR)	Other sources(specify) (LKR)	Amount expected from donor agency (LKR)
1					
2					

8. Submission

8.1. Authorized person to submit the sub-project proposal on behalf of the Cascade Management Committee (CMC).

8.2. Position, contact details, frank, date of submission

09. Annexes:

Annexure 5: Plates



Focus Group Discussion at Pathinipai



Group Formation to conduct Transect Walk



Site Visits



Improper Wast Disposal



Illegal Tree Removal



Elephant Movement