



Cascade Management Plan Mallikai Aaru



Under
Climate Smart Irrigated Agriculture Project (CSIAP)

In
Mandakallaru Basin
Karachchi & Thunukkai DSDs
Kilinochchi & Mullaitivu Districts

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1. Introduction

Small water storage is recognized as a key invention that facilitated the colonization of the dry zone of Sri Lanka. These small reservoirs are referred to as “*Kulam*” (tanks). In the dry zone of Sri Lanka, natural or man-made tanks have served for the collection, storage and distribution of rainfall and runoff and provided irrigation water for the cultivation of paddy and Other Field Crops (OFC) for more than 2000 years. During the two main rainy seasons in April - May and September - December, surface runoff is collected and stored in these tanks and subsequently distributed during the dry periods to the fields located in the downslope.

The tanks are arranged in a cascade-like fashion along shallow valley courses. They are connected by canals, natural drains and spillways and build a complex system of floodwater harvesting, water storage and water distribution. The tank cascade system (*wewa-ellangava* in Sinhala or *viluneer kulathodar* in Tamil) is an ancient Sri Lankan irrigation infrastructure. The system is a network of small tanks draining to large reservoirs that store rainwater and surface runoff for later use.

Besides irrigation, the stored water is used for domestic purposes, dried out tank beds serve as pasture for the cattle and in general deposited sediments are used as raw material for brick production. Thus, the tanks have characterized the cultural landscape and have become an identity-generating factor for the rural culture.

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 flowing from a reservoir along with the water used in its command area is captured by the next downstream reservoir and, thus, put to use again in the command area of the second reservoir. This water is continuously filtered and recycled in subsequent tanks. Tank Cascade Systems buffer the effects of climatic fluctuations and work as a cornerstone in coping with future climate change in the dry zone of Sri Lanka.

The management of Tank Cascade Systems is intimately associated with their sociological setting and the evolution of rural settlements. Therefore, the overall objective of cascade management is to enhance the living standards of rural communities and the environment through the restoration and improvement of the system on a sustainable basis.

1.1 General Information about the Cascade

The general information of the Mallikai Aru cascade is described in the Table 1.

Table 1: General Information of Mallikai Aru Cascade

Information	Details
Name of the District	Kilinochchi & Mullaitivu
Name of the Divisional Secretariat/s	Karachchi and Thunukkai
Name of the Electorate	Jaffna & Vanni
Name of the River Basin	Mandakallaru
Name of the Cascade:	Mallikai Aru
Name of the Agrarian Development Center/s.	Akkarayan & Thunukkai
Name/s of Grama Niladari Division/s	Vanneri, Aanaivilunthan, Iyankankulam, Koddaikadiyakulam, Palayamurukandi and Ampalaperumalkulam

Extent of the cascade in hectares	1383hc
Command area in the cascade (Ac)	3459
Number of Total tanks & Anicuts in cascade	15
Number tanks & Anicuts used for agriculture	13
Restricted forest areas (ha), if any	-
Number of families living in the command areas of the Cascade	1073
Number of tanks located within the forest	02

1.2 Definition of the Cascade and Cascade Management

A cascade system is described as a connected series of tanks organized within a micro-catchment of the dry zone landscape, storing, conveying and utilizing water. It provides water for irrigation, domestic purposes, animals and ecosystems. In a broader sense, the system can be considered as a sustainable ecosystem.

Strengthening the institutional framework in the cascade is identified as one of the key requirements for managing the cascade system. Therefore, CMCs consisting of farmer Organizations and local-level officials are to be formed for resources (water and land) management at the cascade level.

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 scarcity is a challenge and where there is a need to optimize water usage for agricultural purposes.

1.3 The Need for the Cascade Profile

The need for a well-designed cascade profile arises due to several reasons. Firstly, it enables equitable water distribution, ensuring that all agricultural fields within the system receive their required share. By following the natural contours of the land, the cascade profile helps in minimizing water wastage and reduces the risk of water-logging or erosion.

Secondly, the cascade profile helps manage the gravity-driven flow of water. By constructing the channels and structures at appropriate elevations, the system can take advantage of the natural force of gravity to move water from higher to lower elevations, reducing the need for pumping and energy consumption.

Additionally, the cascade profile allows for the regulation of water flow and storage. By incorporating storage reservoirs at different levels, excess water can be stored during periods of high rainfall or low irrigation demand, ensuring a steady water supply during dry spells.

Overall, the cascade profile plays a vital role in maximizing water conveyance efficiency, minimizing losses, and promoting Climate Smart Agricultural practices in water-scarce areas. It allows for the optimal utilization of available water resources and helps farmers to meet their irrigation needs while minimizing environmental impact.

1.4 Need for Cascade Management Committee

- Ensure the sustainability of Cascade Systems.
- Make all stakeholders in a cascade actively involved in the management of the system ensuring their perspectives.
- To ensure the Environmental and ecosystem stability of the cascade.
- To avoid/minimize high tank water losses, frequent repairs of structures, low system productivity, waterborne diseases *etc.*
- Tanks serve multiple purposes, such as irrigation for agriculture, water for livestock, inland fisheries, groundwater recharge, flood control, *etc.*
- Maintain the regional groundwater table in cascade area.
- Other than agriculture water users, there is hardly any contribution from the other users for the maintenance of the irrigation system.
- The resources are used by other users without any limitation.
- Common resources, such as water and the environment, should be managed as common property.

1.4.1 Role and Responsibilities of the Cascade Management Committee

- The members of the CMC played major role in collecting data to identify the issues of the cascade with the sole intention of addressing the root causes of the issues.
- The committee should make necessary decisions to manage the resources of the cascade with a joint approach of all agencies and beneficiaries of the cascade and follow up the implementation of those decisions.
- The committee should discuss the maintenance work to be carried out in the cascade by respective farmer organizations.
- It should organize participatory activities of the development programs at the cascade level
- The committee should discuss the outcomes of cultivation committee meetings and issues that can be solved at the cascade level.
- They should plan cultivation, water issues, input supply, training programmes, and other production activities and make arrangements for the marketing of products.
- They should bear the overall responsibility of the development and production programs within the cascade and the management of water and associated resources (including ecosystems) in the cascade.
- Through integrated management, ensure drinking, agricultural, livestock, and inland fisheries requirements are equitably met.
- Promote climate-smart agriculture practices and technologies.
- Prepare/ update an agriculture development plan for the entire cascade.
- Facilitate market access to the production from the agriculture plan implementation.
- Facilitate the community to access the weather and agriculture advisories.

1.4. 2 Composition of a Cascade Management Committee

- Representative of the Divisional Secretary (DS) - Chairman
- Divisional Officer of the Department of Agrarian Development (DAD) - Secretary
- Agriculture Instructors (AIs) in the cascade
- Representative of the Department of Irrigation (DoI)
- Representative of the Department of Wildlife Conservation (DoWC)
- Representative of the Provincial Irrigation Department (PID)
- Representative of the Department of Forest Conservation (DOFC)
- Representative of the Geological Survey and Mines Bureau (GS & MB)
- Representative of the Water Resources Board (WRB)
- Representative of the Local Government Authority (Pradheshiya Saba)
- Representatives of the Grama Niladhari level Committee
- Representatives of the Department of Land Use Planning
- Representatives of NACTA
- Department of Police
- Representative of Farmers' Organizations (FOs) - The Co-Chairman of the CMC must be a representative of farmers' organizations.
- Representative of Community Base Organizations (CBOs) in the cascade

1.4.3 Existing Institutional Framework Related to Cascade Management.

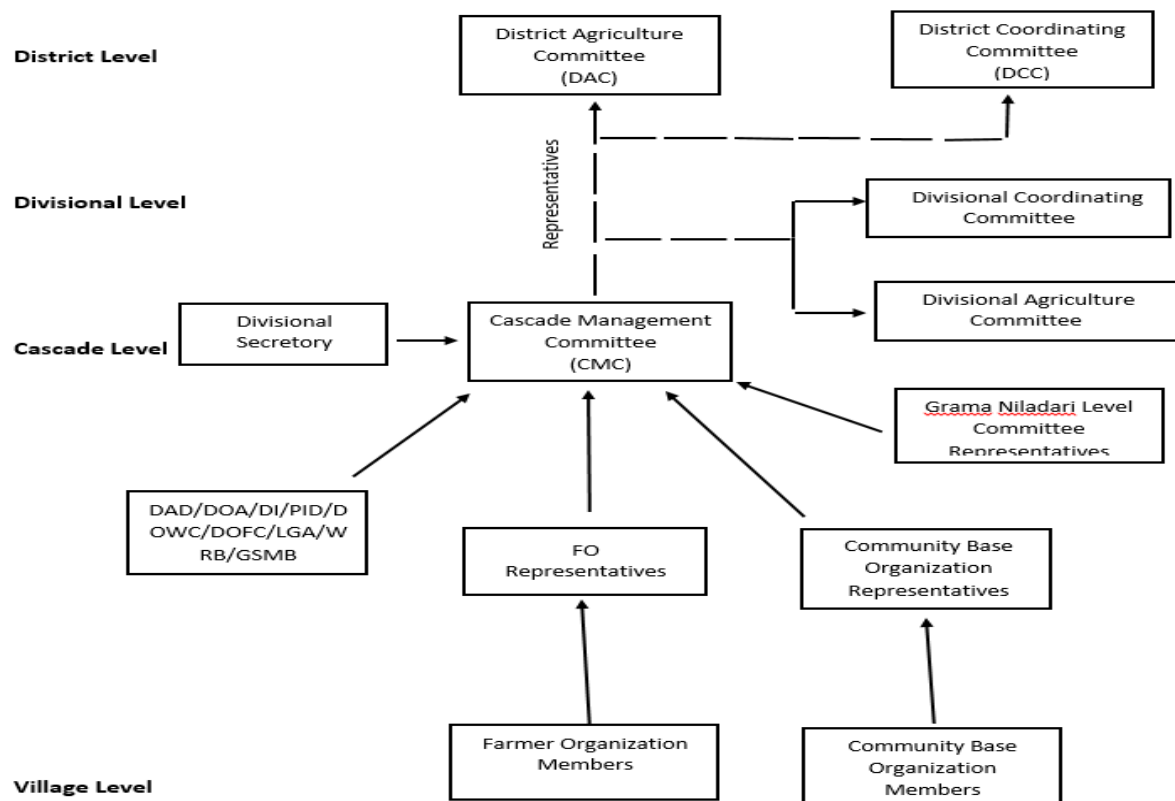


Figure 1: Institutional arrangement for cascade management

1.5 The cascade maps

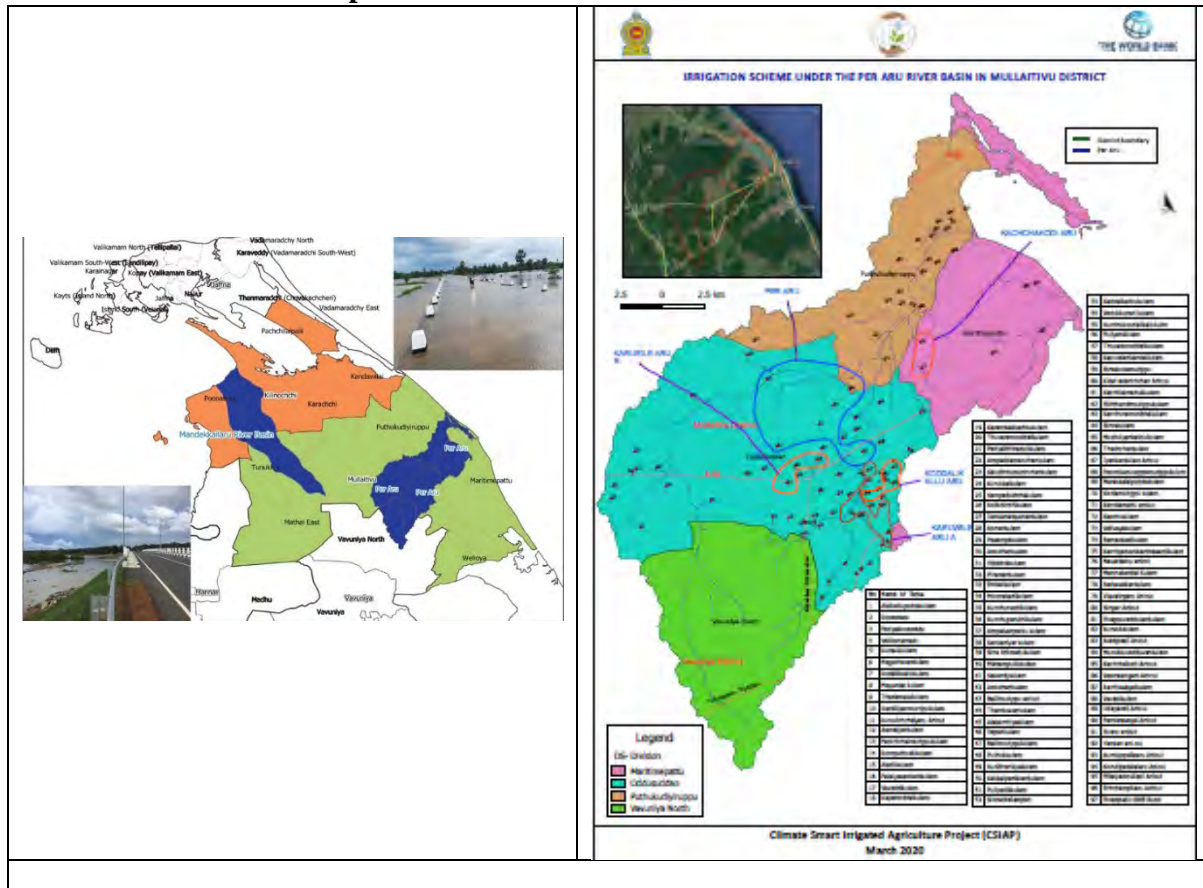


Figure 2: The map of cascade

1.6 Objectives of the Cascade Profile

The main objective of the cascade profile is to learn the cascade status, and issues that affect the cascade negatively. The profile enables developing a pragmatic cascade management plan to ensure the sustainability of the cascade and the water productivity of the tank system in the area. The specific objectives are:

- To reduce vulnerability of climate change
- To enhance the living standards of rural communities on sustainable basis.
- To restore the watershed of the system to enhance biodiversity (Flora & Fauna, Wild animals, etc.) through integrated management
- To address the water scarcity faced by rural communities living in the cascade
- To manage water and associated natural resources in a sustainable manner
- To promote crop zoning programmes and facilitate marketing

1.7 The Methodology

The participatory assessment process is the basic methodology for developing the cascade profile, and appropriate tools were used to identify the bio-physical condition of the cascade area. The primary & secondary data collection techniques were used to develop this CMP. Focused group discussion, key informant interviews, matrix ranking, and transect walk were the main tools. Participants living in the hotspot area and members of Cascade Management Committees (CMCs) have participated in this assessment process.

The objectives of the cascade profile development and how needful data is to be collected and generated during the interactive and iterative process have been conducted in Focus group discussions. The need for tank cascade system was identified through the Participatory Rural Appraisal (PRA), Hydrology studies, Engineering Surveys, and Preliminary Investigation Report (PIR) reports during the project period. The main intervention was identified and ranked during the discussion.

A cascade consisting of 3 tanks was identified and named as “Mallikai Aru ” based on the consultation with all stakeholders, including farmers and officers. Finally, it was declared as a cascade by the Department of Agrarian Development (DAD) & Provincial Department of Irrigation (PID) at the Divisional Agriculture Committee, Thunukkai & Akkarayan .

Participants were grouped into three groups based on their knowledge of the area and subject matter, and Safeguard Officers took the leading role in each group as group coordinators with the support of IDCB and Specialist of CSIAP-NP. Each group conducted the transect walk to cover tanks and the adjoining settlement area.

The gathered data in the transect walk, was validated in the discussion with the members of the cascade. This validated information was compiled as a report and shared among the CSIAP officers who participated in the transect walk of Mallikai Aru cascade. Finally, the report was developed and submitted to PMU for further improvement.

1.8 Particulars of the tanks under the cascade

There are fifteen tanks located beneath the Mallikai Aru upper cascade in the Karachchi and Thunukkai Divisional Secretariats (DSDs) of the Kilinochchi and Mullaithivu districts. These tanks are known as Iyankankulam, Murukandy Kulam, Koddikaddiya Kulam, Ampalaperumal Kulam, Thevankaddu, Vanneri, Manniya Kulam, Kunchuk Kulam, Iththimoddai, Thikkai Kulam, Paravathan Kulam, Parayankulam, Aanaivilunthan Kulam, Puthuk Kulam, and Pidariipallam Kulam. All fifteen tanks are primarily intended for paddy and other field crop cultivation. Additionally, some of them are utilized for recharging groundwater.

Table 2: Particulars of the tanks

No	Tank's name	Tank ID Name	GND	Existing Capacity (Ac. ft)	Comm and Area (ac)	No of farmer families
1	Iyankan kulam	N/A	Iyankan kulam	4613.00	952	180
2	Murukandy kulam	N/A	Palayamurukandy	2006.00	450	52
3	Koddikaddiya kulam	N/A	Koddikaddiya kulam	1457.00	420	210

4	Ampalaperumal kulam	N/A	Ampalaperumal kulam	3782.00	630	109
5	Thevankaddu kulam	25/5/P/A/031	Jeyapuram south	90.258	102	102
6	Vanneri kulam	N/A	Vannerikulam	2073.990	363	121
7	Manniya kulam	25/4/T/W/001	Vannerikulam	98.461	110	21
8	Kunchuk kulam	25/4/T/W/002	Vannerikulam	1368.495	100	74
9	Thikkai kulam	25/4/T/W/005	Vannerikulam	617.543	50	40
10	Iththimoddai kulam	25/4/P/W/029	Vannerikulam	17.249	32	32
11	Paravathan kulam	25/4/P/A/036	Vannerikulam	N/A	0	0
12	Parayan kulam	25/4/T/W/003	Vannerikulam	37.166	60	35
13	Pidarippallam kulam	25/4/P/A/033	Vannerikulam		70	40
14	Aanaivilunthan kulam	25/4/T/W/006	Aanaivilunthan	1635.27	120	60
15	Puthukkulam	25/4/P/A/032	Vannerikulam	N/A	0	0
Total					3459	1073

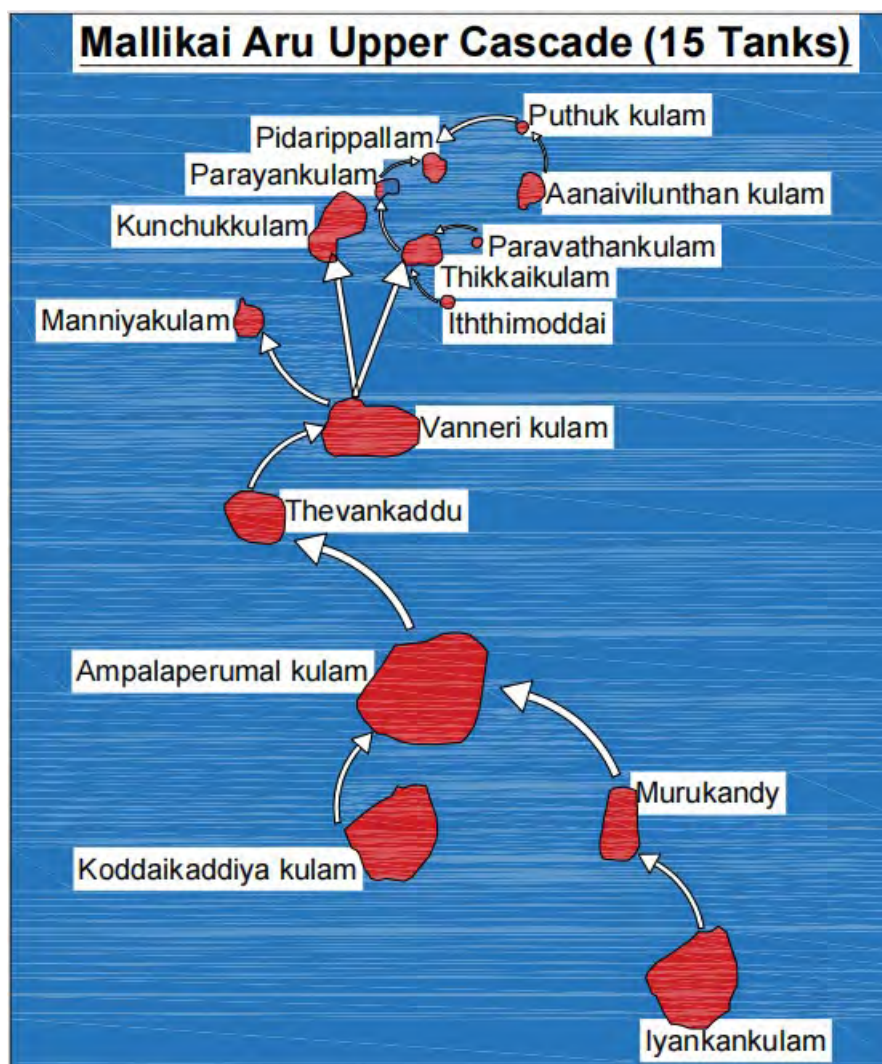


Figure 3 Map of Mallikai Aru Cascade

Table 3: Brief Details of Area Capacity of Tanks in the Cascade**1. Iyankan kulam**

Contour level (m)	Area (Ac)	Mean Area (Ac)	Volume (Ac. ft)	Capacity (Ac. ft)
38.50	2.921	0	0	0
38.80	13.394	8.158	8.029	8.029
39.10	25.273	19.333	19.029	27.058
39.40	33.686	29.48	29.015	56.074
39.70	43.367	38.527	37.92	93.994
40.00	63.72	53.543	52.701	146.694
40.30	86.55	75.135	73.952	220.646
40.60	113.389	99.97	98.396	319.042
40.90	146.569	129.979	127.933	446.975
41.20	182.94	164.755	162.161	609.136
41.50	213.686	198.313	195.191	804.328
41.80	254.506	234.096	230.411	1034.739
42.10	290.314	272.41	268.122	1302.86
42.40	352.509	321.411	316.351	1619.211
42.70	387.38	369.944	364.12	1983.332
43.00	426.103	406.742	400.338	2383.67
43.30	471.457	448.78	441.715	2825.386
43.60	516.323	493.89	486.115	3311.501
43.90	567.365	541.844	533.314	3844.815
44.20	634.974	601.169	591.705	4436.52
44.50	694.486	664.73	654.265	5090.786
44.80	762.757	728.622	717.151	5807.937

2. Murukandy kulam

Contour level (m)	Area (Ac)	Mean Area (Ac)	Volume (Ac.ft)	Capacity (Ac.ft)
30.30	0.06	0.06	0.06	0.00
30.60	0.75	0.40	0.40	0.40
30.90	2.96	1.85	1.85	2.26
31.20	11.89	7.43	7.43	9.68
31.30	16.76	14.33	4.78	14.46
31.50	28.06	22.41	14.94	29.40
31.80	46.42	37.24	37.24	66.64
32.10	79.36	62.89	62.89	129.53

32.40	118.65	99.01	99.01	228.54
32.70	160.43	139.54	139.54	368.08
33.00	206.79	183.61	183.61	551.70
33.30	253.89	230.34	230.34	782.04
33.60	306.80	280.35	280.35	1062.38
33.90	353.23	330.02	330.02	1392.40
34.20	398.17	375.70	375.70	1768.10
34.50	444.99	421.58	421.58	2189.68
34.80	483.88	464.43	464.43	2654.11

3. Koddikaddiya kulam

Contour level (m)	Area (Ac)	Mean Area (Ac)	Volume (Ac.ft)	Capacity (Ac.ft)
22.90	0.05	0.05	0.05	0.00
23.20	0.76	0.40	0.40	0.40
23.50	4.78	2.77	2.77	3.17
23.80	12.97	8.88	8.88	12.05
24.10	24.65	18.81	18.81	30.86
24.20	29.58	27.11	27.11	39.90
24.25	32.45	31.02	31.02	45.06
24.40	43.72	38.09	38.09	64.11
24.70	79.64	61.68	61.68	125.79
25.00	124.92	102.28	102.28	228.07
25.30	177.63	151.28	151.28	379.35
25.60	239.05	208.34	208.34	587.68
25.90	310.05	274.55	274.55	862.23
26.20	388.24	349.14	349.14	1211.38
26.50	476.28	432.26	432.26	1643.63
26.80	562.43	519.35	519.35	2162.98
27.10	665.61	614.02	614.02	2777.00
27.40	768.41	717.01	717.01	3494.02
27.70	862.51	815.46	815.46	4309.48

4. Ampalaperumal kulam

Contour level (m)	Area (Ac)	Mean Area (Ac)	Volume (Ac.ft)	Capacity (Ac.ft)
22.20	1.509	0	0	0
22.50	6.48	3.995	3.932	3.932
22.80	15.254	10.867	10.696	14.627
23.10	24.203	19.728	19.418	34.045
23.40	41.484	32.843	32.326	66.372
23.70	72.742	57.113	56.214	122.586

24.00	107.904	90.323	88.901	211.487
24.30	137.046	122.475	120.547	332.034
24.60	188.726	162.886	160.322	492.356
24.90	243.809	216.268	212.863	705.219
25.20	300.083	271.946	267.665	972.884
25.50	352.44	326.261	321.125	1294.009
25.80	409.122	380.781	374.787	1668.795
26.10	471.035	440.079	433.151	2101.946
26.40	541.604	506.32	498.349	2600.295

5. Thevankaddu kulam

Contour level (m)	Area (Ac)	Mean Area (Ac)	Volume (Ac.ft)	Capacity (Ac.ft)
8.20	0.013	0.007	0.007	0.007
8.80	0.722	0.368	0.362	0.369
9.10	1.129	0.926	0.911	1.280
9.40	1.720	1.424	1.402	2.682
9.70	2.179	1.950	1.919	4.600
10.00	16.237	9.208	9.063	13.663
10.30	36.804	26.520	26.103	39.766
10.60	65.797	51.300	50.493	90.258
10.90	108.147	86.972	85.602	175.861
11.20	150.595	129.371	127.333	303.194
11.50	202.149	176.372	173.594	476.789
11.80	255.102	228.626	225.025	701.814
12.10	258.687	256.895	252.849	954.663
12.40	310.236	284.462	279.982	1234.645

6. Vanneri kulam

Contour level (m)	Area (Ac)	Mean Area (Ac)	Volume (Ac.ft)	Capacity (Ac.ft)
7.30	0.685	0.342	0.337	0.337
7.60	1.944	1.314	1.294	1.630
7.90	25.742	13.843	13.625	15.255
8.20	137.229	81.486	80.202	95.458
8.50	182.941	160.085	157.564	253.022
8.80	257.290	220.115	216.649	469.671
9.10	258.594	257.942	253.880	723.551
9.40	292.348	275.471	271.133	994.684
9.70	323.265	307.806	302.959	1297.643
10.00	355.580	339.422	334.077	1631.720
10.30	385.359	370.469	364.635	1996.356
10.359	391.536	388.448	370.558	2073.990
10.60	416.770	404.153	394.748	2761.661
10.90	467.089	441.929	434.970	3196.631
11.20	522.973	495.031	487.235	3683.867
11.50	590.768	556.870	548.101	4231.968
11.80	643.185	616.976	607.260	4839.227
12.10	701.796	672.490	661.900	5501.127
12.40	746.786	724.291	712.885	6214.012

7. Manniya kulam

Contour level (m)	Area (Ac)	Mean Area (Ac)	Volume (Ac.ft)	Capacity (Ac.ft)
3.90	0.033	0.016	0.016	0.016
4.20	0.366	0.200	0.200	0.216
4.50	2.228	1.297	1.297	1.513
4.80	8.668	5.448	5.448	6.961
5.10	21.005	14.836	14.836	21.797
5.40	38.487	29.746	29.746	51.543
5.70	55.348	46.917	46.917	98.461
6.00	72.300	63.824	63.824	162.285
6.30	92.413	82.356	82.356	244.641
6.60	109.742	101.077	101.077	345.719
6.90	121.329	115.536	115.536	461.254
7.20	129.348	125.339	125.339	586.593
7.50	131.494	130.421	130.421	717.014
7.80	132.394	131.944	131.944	848.958
8.10	132.508	132.451	132.451	981.409

8. Kunchuk kulam

Contour level (m)	Area (Ac)	Mean Area (Ac)	Volume (Ac.ft)	Capacity (Ac.ft)
0.90	0.017	0.008	0.008	0.008
1.20	0.050	0.034	0.034	0.042
1.50	0.101	0.076	0.076	0.118
1.80	0.481	0.291	0.291	0.409
2.10	2.296	1.389	1.389	1.798
2.40	12.334	7.315	7.315	9.113
2.70	34.292	23.313	23.313	32.426
3.00	87.370	60.831	60.831	93.257
3.30	150.123	118.747	118.747	212.004
3.60	202.027	176.075	176.075	388.079
3.90	277.667	239.847	239.847	627.925
4.20	385.918	331.793	331.793	959.718
4.50	431.636	408.777	408.777	1368.495
4.80	537.028	484.332	484.332	1852.827
5.10	573.877	555.452	555.452	2408.280
5.40	595.148	584.513	584.513	2992.792
5.70	597.454	596.301	596.301	3589.094
6.00	597.589	597.521	597.521	4186.615
6.30	597.690	597.639	597.639	4784.254
6.60	597.706	597.698	597.698	5381.952
6.90	597.723	597.715	597.715	5979.667

9. Thikkai kulam

Contour level (m)	Area (Ac)	Mean Area (Ac)	Volume (Ac.ft)	Capacity (Ac.ft)
2.70	0.034	0.017	0.017	0.017
3.00	2.190	1.112	1.112	1.129
3.30	11.966	7.078	7.078	8.206
3.60	22.609	17.287	17.287	25.494
3.90	36.742	29.676	29.676	55.169
4.20	56.482	46.612	46.612	101.781
4.50	87.510	71.996	71.996	173.777
4.80	116.104	101.807	101.807	275.584
5.10	164.519	140.312	140.312	415.896
5.40	238.775	201.647	201.647	617.543
5.70	329.048	283.911	283.911	901.454
6.00	384.896	356.972	356.972	1258.426
6.30	420.730	402.813	402.813	1661.239
6.60	453.016	436.873	436.873	2098.112

6.90	476.327	464.672	464.672	2562.784
7.20	496.507	486.417	486.417	3049.201
7.50	528.612	512.560	512.560	3591.760
7.80	532.675	530.643	530.643	4092.404
8.10	532.694	532.684	532.684	4625.088

10. Iththimoddai kulam

Contour level (m)	Area (Ac)	Mean Area (Ac)	Volume (Ac.ft)	Capacity (Ac.ft)
5.10	0.430	0.215	0.215	0.215
5.40	6.397	3.413	3.413	3.628
5.70	20.843	13.620	13.620	17.249
6.00	41.083	30.963	30.963	48.212
6.30	73.486	57.284	57.284	105.497
6.60	107.295	90.391	90.391	195.887
6.90	126.809	117.052	117.052	312.939
7.20	140.349	133.579	133.579	446.518
7.50	151.429	145.889	145.889	592.407
7.80	162.559	156.994	156.994	749.401
8.10	167.592	165.076	165.076	914.476

11. Paravathan kulam

Contour level (m)	Area (Ac)	Mean Area (Ac)	Volume (Ac.ft)	Capacity (Ac.ft)
3.80	0.066	0.033	0.032	0.032
4.10	0.299	0.182	0.179	0.212
4.40	0.764	0.531	0.523	0.735
4.70	4.402	2.583	2.542	3.277
5.00	15.550	9.976	9.819	13.095
5.30	30.549	23.050	22.687	35.782
5.60	53.919	42.234	41.569	77.351
5.90	55.997	54.958	54.093	131.444
6.20	56.164	56.081	55.197	186.641
6.50	56.231	56.198	55.313	241.954

12. Parayan kulam

Contour level (m)	Area (Ac)	Mean Area (Ac)	Volume (Ac.ft)	Capacity (Ac.ft)
1.80	0.005	0.003	0.003	0.003
2.10	0.314	0.160	0.160	0.162
2.40	2.609	1.462	1.462	1.624

2.70	18.629	10.619	10.619	12.243
3.00	31.216	24.922	24.922	37.166
3.30	45.066	38.141	38.141	75.307
3.60	57.878	51.472	51.472	126.779
3.90	71.872	64.875	64.875	191.654
4.20	85.775	78.824	78.824	270.478
4.50	96.290	91.033	91.033	361.511
4.80	103.211	99.751	99.751	461.261
5.10	110.778	106.994	106.994	568.256
5.40	111.744	111.261	111.261	679.517
5.70	112.069	111.906	111.906	791.423
6.00	112.298	112.184	112.184	903.607
6.30	112.408	112.353	112.353	1015.960

13. Pidaripallam kulam

Contour level (m)	Area (Ac)	Mean Area (Ac)	Volume (Ac.ft)	Capacity (Ac.ft)
2.40	0.028	0.014	0.014	0.014
2.70	0.991	0.510	0.510	0.524
3.00	16.797	8.894	8.894	9.418
3.30	48.139	32.468	32.468	41.886
3.60	63.861	56.000	56.000	97.885
3.90	82.617	73.239	73.239	171.124
4.20	99.173	90.895	90.895	262.020
4.50	106.563	102.868	102.868	364.888
4.80	107.099	106.831	106.831	471.719

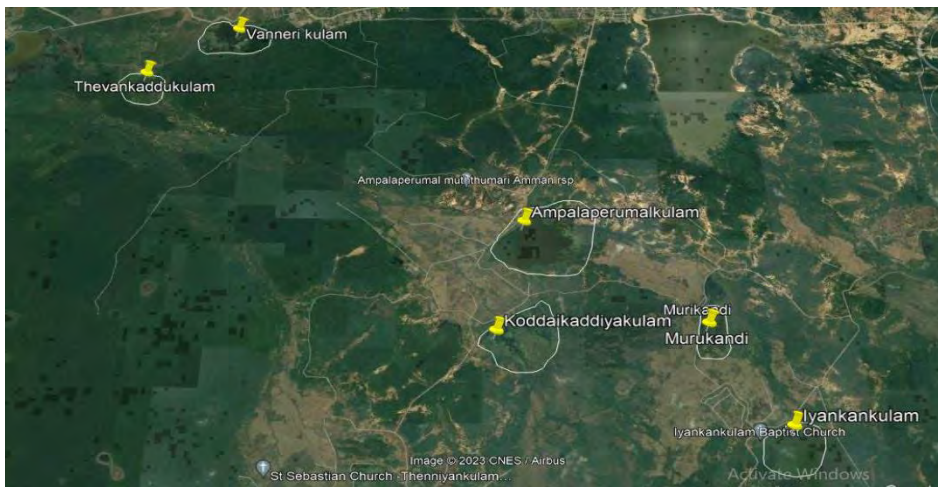
14. Aanaivilunthan kulam

Contour level (m)	Area (Ac)	Mean Area (Ac)	Volume (Ac.ft)	Capacity (Ac.ft)
4.80	0.127	0.064	0.064	0.064
5.10	4.161	2.144	2.144	2.208
5.40	16.364	10.263	10.263	12.470
5.70	29.062	22.713	22.713	35.184
6.00	44.181	36.621	36.621	71.805
6.30	93.312	68.746	68.746	140.552
6.60	147.405	120.358	120.358	260.910
6.90	187.712	167.559	167.559	428.469
7.20	252.544	220.128	220.128	648.597
7.50	356.947	304.746	304.746	953.343

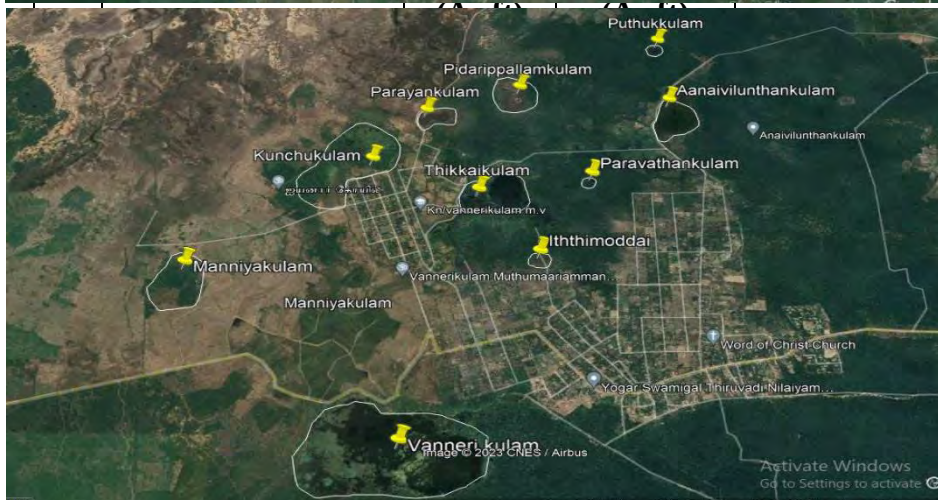
7.80	413.715	385.331	385.331	1338.674
8.10	476.064	444.890	444.890	1783.563
8.40	646.771	561.418	561.418	2344.981
8.70	735.042	690.907	690.907	3035.888
9.00	781.023	758.033	758.033	3793.920
9.30	908.025	844.524	844.524	4638.445
9.60	1083.647	995.836	995.836	5634.281
9.90	1166.688	1125.167	1125.167	6759.448
10.20	1225.912	1196.300	1196.300	7955.748
10.50	1226.236	1226.074	1226.074	9181.821

15. Puthukkulam

Contour level (m)	Area (Ac)	Mean Area (Ac)	Volume (Ac.ft)	Capacity (Ac.ft)
5.00	0.394	0.197	0.194	0.194
5.30	1.886	1.140	1.122	1.316
5.60	5.712	3.799	3.739	5.055
5.90	9.022	7.367	7.251	12.306
6.20	14.727	11.874	11.687	23.993



the surface water



ordinate

10	Iththimoddai kulam	17.249	48.212	756372.646	441599.992
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11	Paravathan kulam	N/A	N/A	9.39946	80.22079
12	Parayan kulam	37.166	126.779	758635.629	440675.538
13	Pidaripallam kulam	9.418	97.88	759181.654	441229.026
14	Aanaivilunthan kulam	1635.27	1635.27	9°20'11.17"N	80°15'47.43"E
15	Puthukkulam	N/A	N/A	9.39946	80.22079

After conducting hydrological, PIR, and engineering surveys, it has been determined that the FSL (Full Supply Level) has been raised for some tanks during the ongoing development works initiated by CSIAP. You can find all the details in Table 5

No	Name of Tank	Existing FSL (m MSL)	Designed FSL (m MSL)	Spill raised by (m)
1	Iyankan kulam	44.50	44.50	0
2	Murukandy kulam	34.20	34.20	0
3	Koddikaddiya kulam	27.10	27.10	0
4	Ampalaperumal kulam	26.10	26.10	0
5	Thevankaddu kulam	9.40	11.20	0
6	Vanneri kulam	10.40	11.20	0
7	Manniya kulam	5.70	5.70	0
8	Kunchuk kulam	4.50	4.50	0
9	Thikkai kulam	5.40	5.40	0
10	Iththimoddai kulam	5.70	6.00	0.30
11	Paravathan kulam	N/A	N/A	-
12	Parayan kulam	3.00	3.60	0.60
13	Pidaripallam kulam	3.00	3.30	0.30
14	Aanaivilunthan kulam	8.00	8.00	0
15	Puthukkulam	N/A	N/A	-

Table 5: Details of Existing and Designed Full Supply Level.

No	Name of Tank	Existing FSL (m MSL)	Designed FSL (m MSL)	Spill raised by (m)
1	Iyankan kulam	44.50	44.50	0
2	Murukandy kulam	34.20	34.20	0
3	Koddikaddiya kulam	27.10	27.10	0
4	Ampalaperumal kulam	26.10	26.10	0
5	Thevankaddu kulam	9.40	11.20	0
6	Vanneri kulam	10.40	11.20	0
7	Manniya kulam	5.70	5.70	0
8	Kunchuk kulam	4.50	4.50	0
9	Thikkai kulam	5.40	5.40	0
10	Iththimoddai kulam	5.70	6.00	0.30
11	Paravathan kulam	N/A	N/A	-
12	Parayan kulam	3.00	3.60	0.60
13	Pidaripallam kulam	3.00	3.30	0.30
14	Aanaivilunthan kulam	8.00	8.00	0
15	Puthukkulam	N/A	N/A	-

Some tanks in this cascade lacked adequate spill pathways, which led to breaches. However, as part of the CSIAP Project, spill and irrigation structures were constructed to align with the topography as closely as possible, as detailed in Table 6

Table 6: Existing and Designed spill Length (based on Design Afflux)

No	Name of tank	Design Peak flow (m ³ /s)	Existing Spill Length (m)	Designed Afflux (m)	Design Spill length (m)
1	Iyankan kulam	125	106.84	2.7	106.84
2	Murukandy kulam	127	74.80	2.2	74.80
3	Koddikaddiya kulam	150	123.60	1.9	123.60
4	Ampalaperumal kulam	120	205.00	1.9	205.00
5	Thevankaddu kulam	N/A	N/A	N/A	100.00
6	Vanneri kulam	N/A	277.00	N/A	380.00
7	Manniya kulam	18.63	47.00	0.45	47.00
8	Kunchuk kulam	69.75	100.00	0.60	100.00
9	Thikkai kulam	132.60	85.00	0.90	100
10	Iththimoddai kulam	19.35	N/A	0.30	80.00
11	Paravathan kulam	N/A	N/A	N/A	N/A
12	Parayan kulam	382.93	20.00	0.90	20.00
13	Pidaripallam kulam	382.93	N/A	0.90	300.00 (Causeway)
14	Aanaivilunthan kulam	156.70	112.00	0.85	112.00
15	Puthukkulam	N/A	N/A	N/A	N/A

Table 7: Bund Top Level

No.	Name of Tank	Existing BTL (MSL)	Designed BTL (MSL)	Bund Length
1	Iyankan kulam	46.40	46.95	1820.00
2	Murukandy kulam	35.10	35.85	2467.00
3	Koddikaddiya kulam	28.00	28.60	1872.10
4	Ampalaperumal kulam	28.30	29.30	3348.00
5	Thevankaddu kulam	11.00	12.8	1415.00
6	Vanneri kulam	11.50	12.8	4460.00
7	Manniya kulam	6.60	6.60	1411.00
8	Kunchuk kulam	5.40	5.40	2325.00
9	Thikkai kulam	6.40	7.00	2300.00
10	Iththimoddai kulam	6.00	7.10	750.00
11	Paravathan kulam	N/A	N/A	N/A
12	Parayan kulam	3.90	5.10	563.00
13	Pidaripallam kulam	N/A	4.50	1150.00
14	Aanaivilunthan kulam	9.30	9.75	3375.00
15	Puthukkulam	N/A	N/A	N/A

2 The Context Analysis

2.1 Geological Aspect

2.1.1 Topography

The Topography of Mullaitivu & Kilinochchi district is flat land, gently sloping to the East and North and in the western part directed towards west and South. This district has 70 km of coastal belt and four lagoons namely Kokkulai, Nayaru, Nanthikadal and Mahalan with high potentials for prawn culture. The elevation varies from sea level to 36.5 meters.

Soil

Raddish brown earth and Red yellow latosols which are suitable for cultivation. Raddish brown earths cover 44% of the land area in the district other soil types namely Grumusols, Alluvial soil, Regosols and Solo dized solonetz and solonchaks are scattered in the district. Some of the surfaces are corded and it accounts about 12% of the total land area of the district.

Agro-Ecology

Agro ecologically Mullaitivu district is located in low country dry zone. There are two agro ecological zones, namely DL 1 and DL 3. The DL 1 region sub divided into 4 sub regions i.e., DL 1b, DL 1d, DL 1e and DL 1f.

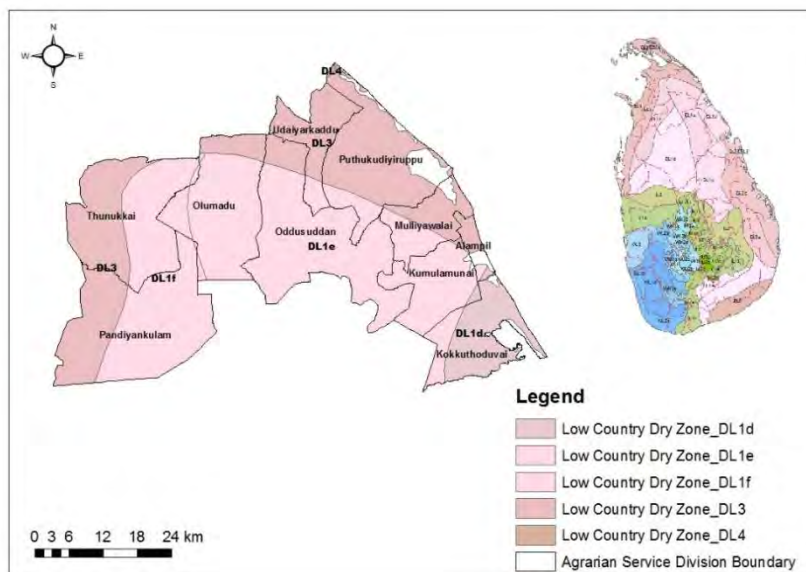


Figure 5: Agro Ecological Region Map

2.2 Geographical Features

There is some information about the geological elements, including flora, fauna, and natural aspects, associated with the Mallikai Aru cascade system in Mullaitivu & Kilinochchi. This cascade exhibits remarkable biodiversity. There were several species of flora & fauna observed in and around the cascade during the transect walk. The forest area is the habitat of a wide range of animals and birds.

2.2.1 Flora

The forest cover in Mullaitivu district is 23202 ha (12% of total area), and the type of forest cover found in this area is tropical thorn forest, which is primarily influenced by monsoon rains. Forest area of this cascade is enriched with different herbal plants which are being used in traditional medicine. The vegetation around the Mallikai Aru cascade system in Mullaitivu & Kilincohchi is diverse and includes both terrestrial and aquatic plant species. Common plant species found in the area include mangroves, grasses, reeds, water lilies, and various types of aquatic vegetation. These plants provide habitats for a wide range of wildlife. A plant called “Avarasu” is found among the woods and it is used for various medical purposes. *Paalai* or *Pallu*, a high timber value tree is common in the cascade. It bears edible, sweet fruit during May - August. Area residents pluck this fruit, sell it for passing by passengers and earn a substantial amount.

2.2.2 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 elephants, monkey, deer, sambur, rabbits, and wild boar, as well as birds, such as herons, egrets, woodpecker, jungle fowl, peacock, myna, and waterfowl making it an excellent spot for bird watching. Other common fauna in the region includes reptiles like crocodiles, snakes, and lizards, as well as fish, amphibians, and small mammals.

2.2.3 Aquatic Life

The tanks within the cascade system are home to various fish species; Tilapia, Catfish, and Gourami. These fish serve as a food source for local communities and contribute to the overall ecological balance of the tanks. Before rehabilitation, 3 years before, 100,000 Tilapia fish fingerlings were introduced by NAQDA in the Ampalaperumalkulam and farmer reported that they earned 2 Lakhs per month. This initiative is expected to improve food security and livelihoods for local fishing communities.

2.2.4 Natural Features

Mallikai Aru cascade system is characterized by its unique hydrological features. The interconnected tanks create a natural water flow system, where water from one tank flows into the next, allowing for effective water management and irrigation. This system is designed to capture and store rainfall during the wet season and release water gradually during the dry season, ensuring a steady water supply for agriculture. Additionally, the tanks and their surrounding areas often attract migratory birds, especially during the winter months when bird populations from colder regions seek warmer climates. This seasonal influx of birds adds to the biodiversity of the area.

2.3 Environmental Aspect

2.3.1 Climate (Rainfall & Temperature)

The district is in the dry zone of Sri Lanka. Average annual rainfall of the Mullaitivu district is 1275 mm and the monthly average temperature ranges from 23 – 39°C. Low rainfall is recorded during the month of June to September, while during Northeast Monsoon from early October to January get high rainfall and annual temperature is low during this period. Figure 6 illustrate

the monthly pattern of rainfall for the Mullaitivu district. No rainfall in June may lead to a water shortage because July is the hottest month in this area. The extreme/severe drought condition was recorded in 2007 and 2011, and 2017 during the last 20 years.

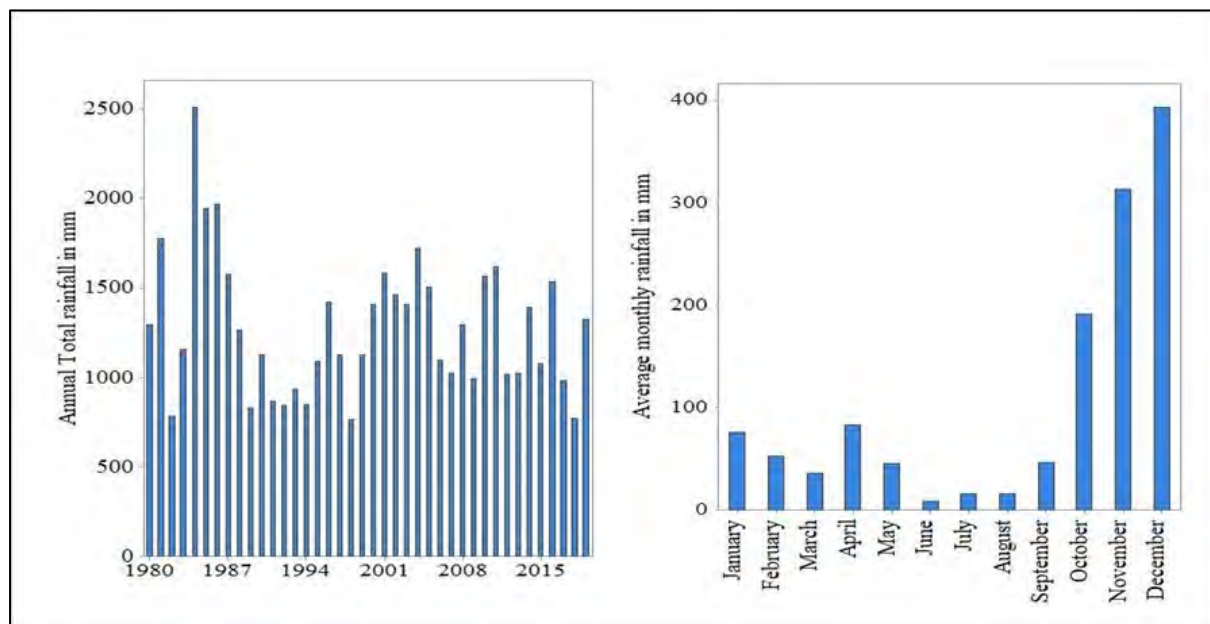


Figure 6: Annual total rainfall and average monthly rainfall pattern of the Mullaitivu District from 1980 to 2020.

Source: The data were gathered from the Spatio-temporal variability of drought over the Mullaitivu District in Sri Lanka from 1980 to 2020 (Nagamuthu et al., 2022).

The Mallikai Aru cascade has three (03) primary minor tanks providing water for domestic and irrigation purposes. These tanks & anicut function as the drought mitigation sources for the area during the first inter and southwest monsoon. Increasing water holding capacity of these reservoirs can prevent the impact of drought during the high temperature and no/less rainfall period in the districts.

Water Availability & Usage

Water availability is directly dependent on these three tanks, which also play a critical role in the irrigation of paddy fields and other crops. These tanks are filled during the rainy season. However, irregular rainfall patterns and occasional droughts leading to water shortages and disrupt farming activities. Farmers often rely on traditional water management techniques, such as pumping water and lift irrigation method

No	Tank Name	Usage of Tank water
1	Kunchu kulam	The tank water is used for cultivation (Maha, Yala, OFC), Bathing, Inland fishing, drinking water for livestock.
2	Manniyakulam	The tank water is used for cultivation (Maha, Yala, OFC), Bathing, Inland fishing, drinking water for livestock.

3	Thikkaikulam	The tank water is used for cultivation (Maha, Yala, OFC), Bathing, Inland fishing, drinking water for livestock.
4	Iththimoddai tank	The tank water is used for cultivation (Maha, Yala, OFC), Bathing, Inland fishing, drinking water for livestock.
5	Parayan kulam	The tank water is used for cultivation (Maha, Yala, OFC), Bathing, Inland fishing, drinking water for livestock.
6	Pidaripalla kulam	The tank water is used for cultivation (Maha, Yala, OFC), Bathing, Inland fishing, drinking water for livestock.
7	Thevankaddu kulam	The tank water is used for cultivation (Maha, Yala, OFC), Bathing, Inland fishing, drinking water for livestock.
8	Vanneri kulam	The tank water is used for cultivation (Maha, Yala, OFC), Bathing, Inland fishing, drinking water for livestock.
9	Paravathan kulam	The tank water is used for cultivation (Maha, Yala, OFC), Bathing, Inland fishing, drinking water for livestock.
10	Puthu kulam	The tank water is used for cultivation (Maha, Yala, OFC), Bathing, Inland fishing, drinking water for livestock.
11	Anaivilunthan kulam	The tank water is used for cultivation (Maha, Yala, OFC), Bathing, Inland fishing, drinking water for livestock.
12	Ampalpermalkulam	The tank water is used for cultivation (Maha, Yala, OFC), Bathing, Inland fishing, drinking water for livestock.
13	Murukandikulam	The tank water is used for cultivation (Maha, Yala, OFC), Bathing, Inland fishing, drinking water for livestock.
14	Iyankankulam	The tank water is used for cultivation (Maha, Yala, OFC), Bathing, Inland fishing, drinking water for livestock.
15	Koddaikaddiyakulam	The tank water is used for cultivation (Maha, Yala, OFC), Bathing, Inland fishing, drinking water for livestock.

Table 8: Usage of tanks

2.3.2 Extent of environmental issues

No water supply: Water is not distributed from this cascade system for domestic and drinking purposes, and there is no domestic water supply identified within the 300 m radius of the cascade.

Soil erosion: There is a high chance of inducing soil erosion due to the rehabilitation of this cascade system by clearing vegetation, excavation activities, and developing bunds, borrow pits, and soil piles. However, rehabilitation works are proposed to be carried out in the dry season with the aim of controlling soil erosion.

Being a flat terrain, there are less chances of soil erosion due to cultural 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 soils get impacted due to absence of organic matter and tend to generate more runoff leaving soils with low water holding capacity. As a result, the soil soon becomes dry and crops are affected with soil moisture deficit even during a short dry spell. 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 siltation observed in this cascade area. This would have been due to mass scale land clearing for cultivation soon after the war and resettlement of a large number of families. The rehabilitation of the cascade system will mitigate these impacts. Anyway, farmers have an opinion that all the tanks in a cascade should be renovated to reap the full benefit of the rehabilitation. As per their opinion, all three tanks are renovated.

2.4 Details of the Socio-Economic Aspect

2.4.1 Demographic Details

The proposed cascade profile demographic details are given below. Due to the prevailed war a significant increase in disabled and women-headed families was observed.

Table 09: Demographic Detail of Mallikai Aru cascade

Tank Name	Families in GND	Tank based Families	Vulnerable Family			
			Women Headed	Disable	Elders	Samurdhi
Anaivilunthankulam	420	60	85	30	50	220
Ampalaperumalkulam	210	109	12	07	86	58
Koddaikaddiyakulam	118	210	17	03	65	48
Iyankankulam	225	180	42	38	81	09
Iththimoddai Tank	464	149	52	16	69	132
Palayamurukandi Kulam	51	40	12	14	19	03
Parayan & Pidaripallam Tanks	464	85	16	03	30	52
Manniyakulam Kulam	464	16	02	-	06	16
Vannerikulam	464	125	12	04	56	70
Thikkai	464	40	14	06	19	36
Paravathan kulam	464	12	-	-	04	08
Puthukkulam	464	18	01	02	07	04
Thevankattu Tank	255	47	04	17	34	-
KunchukulamTank	240	40	28	00	13	33

The Mallikai Aru Upper Cascade comprises 15 tanks. In Phase 01, CSIAP rehabilitated Kunchukulam, Manniyakulam, Thikkaikulam, Iththimoddai Tank, Parayan Kulam, Pidaripalla Kulam, Thevankaddu Kulam, and Vanneri Kulam. Phase 02 of CSIAP will address the rehabilitation of Anaivilunthan Kulam, Ampalaperumal kulam, Murukandikulam, Iyankankulam, and Koddaikaddiyakulam. Notably, the identified Paravathan and Puthukkulam are not included in CSIAP's phase 2 rehabilitation work list.

2.4.2 Economic Pattern

Agriculture is the mainstay of the economy, with paddy cultivation being the predominant activity. About 70% of the cultivated area is dedicated to paddy, while the rest supports field crops such as chilies, onions, and legumes. Employment in government and private sectors accounts for around 15% of the household income, while 10% comes from small shops and businesses, and the remaining 5% from daily wage labor, often connected to seasonal agricultural activities.

2.4.3 Infrastructure Development

The cascade has seen some infrastructural improvements in the form of roads, electricity, and basic services. However, significant gaps remain, especially in transportation and market connectivity. Poor road conditions during the rainy season hamper access to larger markets, affecting the timely sale of agricultural produce. Additionally, the absence of advanced irrigation infrastructure limits farmers' ability to cultivate during off-seasons.

2.4.4 Income Generation Techniques

Families employ a variety of income generation techniques, primarily centred around agriculture. In addition to paddy farming, the cultivation of OFC and animal husbandry provide supplementary income. Non-agricultural activities, such as small-scale retail and employment in government and private sectors, also contribute to household income. However, market volatility and limited access to broader markets make income generation precarious.

2.5 Land Use and Crop Pattern within the Cascade System

The primary land use in the Mallikai Aru cascade is agricultural, with roughly 85% of the total land dedicated to farming, primarily for paddy and field crops. The remaining 15% is used for residential purposes, small commercial activities, and public infrastructure. Land fragmentation is a major issue due to inheritance practices, making efficient land use difficult.

Agro-ecological zones and sub zones are explained under Geological aspect. DL 1d, DL 1e, & DL 1f zones are suitable for paddy and rain-fed highland crops and DL3 zone is most suitable for cashew, spice crops and coconut cultivation. Particularly, DL Id and e zones are also suitable for big onion, red onion, chilli, groundnut and gingelly cultivation.

Paddy, legume crops, especially groundnut, green gram, black gram, cowpea and other vegetable crops like brinjal, chilli, capsicum & bitter gourds cultivation are the sole agricultural activity in the Mallikai Aru cascade system. Compared with other crops groundnut is a prominent crop in this cascade, and it can be cultivated throughout the year.

Based on the water availability in each tank which is located under the cascade, the extent of cultivation is decided and water levels in the tanks are carefully managed.

Farmers often practice crop rotation and crop diversification in order to maintain the soil fertility and minimize pest and disease incidences. After the groundnut harvest, crops like vegetables (brinjal or pumpkin), legumes, or fruits may be grown as crop rotation. This practice helps to maximize land cropping intensity, crop productivity and provides farmers with a diverse range of produce for consumption, sale, seed production, and other income sources.

The proposed sub-project areas fall under tank based cultivation, primarily focused on paddy in both the Maha and Yala seasons. The farmers in this village have requested to engage in crop diversification (OFC) during the off-season and on abandoned lands. Currently, the farmers are effectively engaging in crop diversification (grains, vegetables) in their paddy fields, including crops such as black gram, green gram, watermelon, pumpkin, chili, groundnut, and red onion. Additionally, the tank water is currently used for drinking by cattle herders and wildlife.

There are four inland fishing societies effectively engaged in inland fishing on a part-time basis during the wet season, from December to April, using the mentioned tanks in Jeyapuram North

village. These societies include Ampalaperumal (25 families), Anaivilunthankulam (12 families), Koddaiattiya Kulam (24 families), and Palayamurukandi (55 families).

The current land use practices of the Mallikai Aru Upper Cascade involve the development and rehabilitation of five tanks distributed across different Grama Niladhari Divisions (GNDs). Each tank under the proposed Mallikai Aru Upper Cascade is situated in specific areas. As follows, the Anaivilunthan Kulam tank is located in the KN/02 Anaivilunthankulam GND of the Akkarayan ASC, within the Karachchi Divisional Secretariat (DS) division of Kilinochchi District. Similarly, the Ampalaperumalkulam tank is in the MU/25 Ampalaperumalkulam GND, the Iyankankulam tank in the MU/34 Iyankankulam GND, the Koddaiaddiyakulam tank in the MU/35 Koddaiaddiyakulam GND, and the Palayamurukandi Tank in the MU/33 Palayamurukandi GND—all within the Thunukkai ASC of the Thunukkai DS division in Mullaitivu District, Northern Province.

The current land use practices associated with these tanks are as follows:

Anaivilunthankulam Tank: With a total land area of 120 acres, this tank supports paddy cultivation over 50 acres during the Yala season and 120 acres during the Maha season. Additionally, farmers engage in crop diversification during the off-season, cultivating 20 acres of other field crops (OFC), such as cowpea and groundnut, using tank water.

Ampalaperumalkulam Tank: This tank irrigates a total cultivation area of 630 acres during the Maha season and 350 acres during the Yala season. In the off-season, 75 acres are dedicated to OFC cultivation (black gram, green gram, watermelon,) utilizing the tank's water supply.

Koddaiaddiyakulam Tank: The water from this tank is used to irrigate 420 acres of paddy during the Maha season and 370 acres during the Yala season. During the off-season, 50 acres are devoted to OFC (Ground nut and Grains) cultivation.

Palayamurukandi Tank: Covering a total of 450 acres, this tank supports paddy cultivation on 450 acres during the Maha season and 275 acres during the Yala season. Farmers in this area also practice crop diversification, cultivating 100 acres of OFC during the off-season. Additionally, they have requested support to cultivate approximately 50 acres of abandoned land.

Iyankankulam Tank: This tank is primarily used for sub-food production and paddy cultivation, covering 952 acres during the Maha season and 412 acres during the Yala season. The farmers are actively engaged in crop diversification, utilizing 160 acres for grains and vegetables, such as black gram, green gram, watermelon, pumpkin, chili, groundnut, and red onion.

The proposed rehabilitation work aims to expand the irrigated land area. For instance, the Anaivilunthan Kulam tank's irrigated area is expected to increase from 120 acres to 140 acres, while the Palayamurukandi tank's area will expand from 450 acres to 525 acres. The rehabilitation will ensure sufficient water availability, allowing farmers to cultivate their rightful land area during the Yala season and, in some cases, during the Maha season as well.

2.6 Government's Developments Project

The Government of Sri Lanka has implemented a range of development projects under the Mallikai Aru cascade system, particularly focusing on areas under the jurisdiction of the Thunukkai ASC in Mullaitivu District and the Akkarayan ASC Division in Kilinochchi District. These initiatives aim to rebuild and enhance the post-conflict regions through multi-sectoral development programs.

Infrastructure Development: Over 56 km of rural roads have been rehabilitated, improving connectivity between remote villages and major service centers.

Irrigation and Water Management: Rehabilitation of 3 major tanks (including Akkarayankulam and medium tanks) and 12 minor tanks under the Mallikai Aru system to support paddy cultivation for over 1,500 farming households.

Housing Projects: Under the National Housing Development Program, over 1,200 permanent houses have been constructed for war-affected families in Thunukkai and Akkarayan areas. Grants of LKR 550,000 per household were provided for new constructions and LKR 250,000 for repairs of damaged houses.

Agricultural Development: Agricultural Mechanization Program: Distribution of tractors, water pumps, and harvesters to farmer societies (benefiting approx. 700 farmers). Seed and Fertilizer Subsidies: Nearly 2,000 acres of paddy land supported with subsidized inputs during the Yala and Maha seasons. Establishment of two model farms for introducing modern techniques in organic farming and agro-technology.

Education and Skill Development: Renovation of 15 rural schools, benefiting over 3,000 students, including construction of science labs, libraries, and sanitation facilities. Vocational Training Centers (2 established—one each in Thunukkai and Akkarayan) offering courses in IT, carpentry, tailoring, and mechanical repair to over 400 youths annually.

Health Facilities: Construction of two new Divisional Hospitals and upgrading of six rural health clinics, improving access to healthcare for approximately 30,000 residents. Deployment of mobile medical units providing maternal and childcare services in remote GN divisions.

2.7 Details of Irrigation Management within the Cascade System

The Mallikai Aru Cascade System, located in the dry zone of northern Sri Lanka, spans across the Thunukkai and Akkarayan Agrarian Service Center (ASC) divisions in Mullaitivu & Kilinochchi Districts. This system comprises a series of ancient, interlinked village tanks designed to harvest and distribute seasonal rainfall for agricultural use, particularly paddy cultivation. Traditionally, irrigation in the area was managed through community-based practices, led by a FOs who oversaw water distribution, maintenance, and fair access among farmers. Today, irrigation management is coordinated by the Department of Agrarian Development through local ASCs, with support from Farmer Organizations (FOs). These bodies are responsible for planning seasonal water releases, managing tank rehabilitation, and facilitating participatory water governance. Despite their importance, many tanks in Thunukkai and Akkarayan face challenges such as siltation, encroachment, and climate-induced water shortages. However, recent interventions including tank rehabilitation projects, farmer training programs, and GIS-based planning are helping to restore the functionality of the cascade system. Community involvement remains vital, and efforts to blend traditional knowledge with modern practices are key to ensuring the long-term sustainability of irrigation management in the Mallikai Aru region.

3 Planned Construction activities

Table 10: Construction activities are planned to be implemented under CSIAP

No.	Iyankan kulam – Head work	Iyankan kulam – Down stream work	Murukandy kulam– Head work	Murukandy kulam– Down stream work	Koddikaddi ya kulam– Head work
1	Rehabilitation of tank bund (0+000 – 1+840) – 1840 m	Construction of (1500mm x 900mm) Canal lining of LB Main Canal at (0+250m to 0+575.60m)	Rehabilitation of Tank Bund at (0+000 - 2+490)	Improvements of Gravel Road to LB Main Canal Field Road (0+000 - 1+700)	Rehabilitation of Tank Bund at 0+000 - 1+710
2	Repair to Sluices – LB & RB	Construction of 300mm dia. hump pipe Turnout (7.32m Long) at LB Main Canal (15.00 Nos)	Extending of Abutment	Improvements of Gravel Road to LB off FC-11 Canal Field Road (0+000 - 0+850)	Spill Repairing
3		Construction of 150mm dia. hump pipe Farm Turnout (5.49m Long) at LB Off FC Canal (200.00 Nos)	Repair to Sluices – LB & RB	Construction of (750mm x 600mm) Canal lining at at LB/FC9-(0+175 - 0+850)	Repair to Sluices – LB & RB
4		Construction of 150mm dia. hump pipe Farm Turnout (1.89m Long) at LB Off FC Canal Main Canal (100.00 Nos)		Construction of (300mm x 450mm) Canal lining at at LB/FC9/FC10 (0+000 - 0+200)	
5		Improvements to LB Gravel Road		Construction of (450mm x 600mm) Canal lining at at LB/FC9/FC11(0+000 - 0+865)	

6				Construction of 300mm dia. hump pipe Turnout (7.32m Long) at LB Main Canal (5.00 Nos)	
7				Construction of 150mm dia. hump pipe Farm Turnout (5.49m Long) at FC-09,10&11 Off LB Main Canal (30.00 Nos)	
8				Construction of 150mm dia. hump pipe Farm Turnout (1.89m Long) at FC-09,10&11 Off LB Main Canal (29.00 Nos)	

No.	Koddikaddiya kulam -Down stream work	Ampalaperumal– Head work	Ampalaperum al kulam– Down stream work	Thevankaddu kulam	Vanneri kulam - Head work
01	Construction of (1200mm x 900mm) Canal lining at at LB-(0+000 -0+225)	Rehabilitation of Tank Bund at 1+075 - 2+000	Construction of (600mm x 600mm) Canal lining of RB Main Off FC10 Canal at (0+014m to 0+452.2,0+478.2m to 0+567.5,0+601.5m to 0+750)	Improvements of Tank Bund -1450m	Improvement of vanneri tank bund forming (0.0 - 4+460)
02	Construction of (600mm x 600mm) Canal lining at at LB/DC (0+000 -0+497)	Repair to Sluices – LB & RB	Construction of (450mm x 600mm) Canal lining of RB Main Off FC10 Canal at (0+773.5m to 1+717m)	Construction of 100m CO Spil -01	Improvement of CO Spiil - 01
03	Construction of 150mm dia. hump pipe Farm Turnout (5.49m Long) at LB & RB Canal (101.00 Nos)		Construction of (450mm x 600mm) Canal lining of RB Main Off FC11	Construction of 250m CO Spill -02	Improvement of CO Spiil - 02
04	Construction of 150mm dia. hump pipe Farm Turnout (1.89m Long) at LB & RB Canal (10.00 Nos)		Improvements of RB Main Channel at (0+000m to 0+280m)	Thevankaddu Road and Channel Work	

05	Improvements of Gravel Road to RB Off FC-10 Canal Field Road (0+000 - 1+150)		Construction of 300mm dia. hump pipe Turnout (7.32m Long) at RB Main Canal (6.00 Nos)	Thevankaddu Sluice 1Nos 600 dia Hume pipe concrete tower	
06	Improvements of Gravel Road to RB Off FC-11 Canal Field Road (0+000 - 1+220)		Construction of 150mm dia. hump pipe Farm Turnout (5.49m Long) at RB Off FC Canal (51.00 Nos)	Pandivetti Sluice 2Nos 600 dia Hume pipe concrete tower	
07	Improvements of Gravel Road to RB Off FC-12 Canal Field Road (0+000 - 0+425)		Construction of 150mm dia. hump pipe Farm Turnout (1.89m Long) at LB Off FC Canal Main Canal (38.00 Nos)	Pandivetti Channel & Bund forming Work	
08	Improvements of Gravel Road to FC4 OFF LB Main Canal Field Road (0+200 - 0+615)		Improvements of Gravel Road to RB off FC 05 Canal Field Road at (0+000 - 2+000)	Improvement of breaching section	
No.	Vanneri kulam – Down Stream work			Kunchu kulam	Manniya kulam
01	Connection Vanneri Tank D1channel (735m)	CONSTRUCTION OF F.C 6 CHANNEL ROAD (1460m)	Rehabilitation of Farm out let (150mm Dia, L-2.44 m, 7Nrs) construction of 4.88m Long 600mm dia Hump pipe culvert in f.c 8 channel (2Nrs) Reconstruction of Drop Structure (1Nrs) Location: FC-10	Improvements of Tank Bed & Bund	Improvements of Tank Bed & Bund
02	construction of 4.88m Long 600mm dia Hump pipe culvert in f.c 2 channel (5 Nrs)	Rehabilitation of Farm out let (150mm Dia, L-2.44 m, 17Nrs)	Rehabilitation of Turn out FC-2 at (0+510) & FC-10 at (3+058) (Hume Pipe-300 mm Dia, L-7.20m) (2nos)	Construction of 1.2m X 0.75m Main channel	Improvements of Sluice
03	Reconstruction of 5.0m Long 0.9m X 0.75m Box Type Culvert at (1 Nrs)	construction of 4.88m Long 600mm dia Hump pipe culvert in f.c 6channel (7Nrs)	Rehabilitation of Turn out FC-3 (0+850) (Hume Pipe-225mm Dia, L-7.20m)	Construction of 0.6m X 0.65m Field channel FC1	Improvements of Spill – 1 & 2

04	Connection Vanneri Tank D2channel (1+660m)	Reconstruction of Drop Structure (1Nrs) Location: FC-6	Rehabilitation of Turn out FC-4 at (1+563) (Hume Pipe-300 mm Dia, L-7.20m)	Construction of 0.6m X 0.65m Field channel FC2	Improvement of 375m x 15m Spill Tail Channel
05	Connection Vanneri Tank F.C -2-Channel (1280m)	CONSTRUCTION OF F.C 7 CHANNEL (1125m)	Repair of FC 6 Farm turnout	Construction of 0.6m X 0.65m Field channel FC3	construction of Chanal Lining (600mm x750mm) Location:0+00 0 to 0+ 110m in Main Canal
06	Rehabilitation of Farm out let (150mm Dia, L- 2.44 m, 16Nrs)	Rehabilitation of Farm out let (150mm Dia, L-2.44 m, 7Nrs)	Rehabilitation of Turn out FC-9 at (2+640) (2row Hume Pipe- 225 mm Dia, L- 7.20m)	Construction of 0.6m X 0.65m Field channel FC4	Improvement of earth canal In main canal (Length=375m) Location:0+12 5m to 0+ 500m in Main Canal
07	construction of 4.88m Long 600mm dia Hump pipe culvert in f.c 2 channel (5 Nrs)	construction of 4.88m Long 600mm dia Hump pipe culvert in f.c 8 channel (2Nrs)		Construction of 2.0m X 0.75m Drainage canal	Improvement of earth channel for FC 1 -(0 m to 350m)
08	Reconstruction of Drop Structure (2Nrs) Location: FC-2	Rehabilitation of Farm out let (150mm Dia, L-7.32 m, 7Nrs)		Reconstruction of regulator dia. 300 mm size opening (1 Nr) in Main Channel (0+022 km)	Construction of Regulator (600mm x 600mm) Structure with 5m length Lining
09	CONSTRUCTION OF F.C 3 CHANNEL ROAD (566m)	CONSTRUCTION OF F.C 8 CHANNEL (491m)		Reconstruction of Single bay regulator 1.2m X 0.75m size opening (2 Nrs) in Main Channel (Chainage 0+023 , 0+060 km)	Construction 5m length of 150mm dia, 2.44m Long hume pipe Turnout Structure with Lining .
10	Rehabilitation of Farm out let (150mm Dia, L- 2.44 m, 3Nrs)	Rehabilitation of Farm out let (150mm Dia, L-2.44 m, 7Nrs)		Construction of 6" diameter Farm Turn Out for FC1 (12 Nos.), FC2 (18 Nos.), FC4 (20 Nos.)	Construction of End regulator gates Structure Location: 0+ 500m in Main Canal, 0+350m in FC 1
11	construction of 4.88m Long 600mm dia Hump pipe culvert in f.c	construction of 4.88m Long 600mm dia Hump pipe culvert in f.c 8 channel (2Nrs)		Reconstruction of 1200mm x 750mm Opening 3.5m Long Tractor crossing	Construction of 100mm dia,2.44m Long Hume pipe Farm turnout

	3 channel (2 Nrs)			Chainage 0+249Km in Main canal,	Structure (10Nrs.)
12	Reconstruction of Drop Structure (2Nrs) Location: FC-3	CONSTRUCTION OF F.C 9 CHANNEL (760m)		Construction of Tactor crossing for FC4 (2 Nos.) FC1 (1 Nr) (600mm x 650mm)	Construction of 100mm dia, 7.32m Long Hume pipe Farm turnout Structure (6Nrs.)
13	CONSTRUCTION OF F.C 4 CHANNEL ROAD (1070m)	Rehabilitation of Farm out let (150mm Dia, L-2.44 m, 7Nrs)		Construction of model section for Main canal (5Nos.)	Construction of 500mm Drop Structure (1Nrs) Location: 0+325m in main channel
14	Rehabilitation of Farm out let (150mm Dia, L-2.44 m, 13Nrs)	construction of 4.88m Long 600mm dia Hump pipe culvert in f.c 8 channel (2Nrs)		Construction of model section for FC1 (10 Nos.) , FC2 (10Nos.), FC3 (5 Nos.) & FC4 (15 Nos)	Construction of Main Canal road (length 600m) Location: 0+000m to 0+600m in Main Canal
15	construction of 4.88m Long 600mm dia Hump pipe culvert in f.c 4 channel (5Nrs)	Reconstruction of Drop Structure (1Nrs) Location: FC-9		Construction of Cut throat flume	Construction of Main canal 339m to Ayyanar temple road (Length =1030m)
16	Reconstruction of Drop Structure (1Nrs) Location: FC-4	CONSTRUCTION OF F.C 10 CHANNEL (528m)		Reconstruction of regulator 0.6m X 0.65m size opening (10 Nrs) in Field Channel	Construction of FC1 Road length (350+563=913m) Location: 0+000m to 0+600m in Main Canal
No.	Thikkai kulam	Iththimoddai kulam	Parayankulam	Pidaripallam kulam	Aanaivilunthan kulam
01	Improvement of Tank bund (0+0 to 2+300)	Improvement of Tank bund -750m	Improvement of Tank bund -1005m	Improvement of Tank bund - 1985m	Improvement of Tank bund - 3250m
02	Construction of 300 mm Head wall sluice at (0+710)	Construction of Spill -80m	Construction of Spill -20m	Construction of Co.Spill and Natural Spill	Construction of Co.Spill Repair -112m
03	Construction of Channel line (0+50)	Construction of Outlet	Construction of Sluice	Construction of Sulice - 02 Nos (LB & RB)	Construction of Sluice

04	Construction of 600 mm Dia Single row H/P inlet 4.80 m Long at (Ch 0+50 mid channel)	Construction of Access Road -850m	Construction of Retaining wall	Construction of Canal (100m) - 02 Nos (LB & RB)	Construction of Lining 5m - 01Nos
05	Extention of existing spill structure	Construction of Name board	Construction of Main Canal	Construction of Lining 5m - 02Nos	Construction of Canal 300m
06	Construction of Depth gauge (3 nos.)		Construction of Lining 5m	Construction of Tank Inlet Canal	Construction of Rip Rap – 420m
07			Construction of Access Road – 625m	Construction of Name board	Construction of Name board
08			Construction of 4.8m long 600mm Dia. double raw Hume Pipe culvert structure (2 No.)		
09			Construction of Name board		

4 Critical issues identified and key interventions

The critical issues were identified and ranked during the workshop. Outcome and Key Performance Indicators (KPI) and interventions were proposed.

4.1 Identified key issues

The Mallikai Aru cascade system, which includes 15 interlinked tanks in the Thunukkai and Akkarayan ASCs, faces a range of environmental, hydrological, and socio-economic challenges. These tanks are essential for irrigation, drinking water, livestock, and ecological balance in the region.

1. Land Fragmentation

Subdivision of agricultural land due to inheritance and resettlement patterns has reduced farm sizes, affecting mechanization and productivity.

2. Soil Erosion

Deforestation and unsustainable farming practices in the catchment areas of the tanks, especially around Vannerikulam and Iyankankulam, have accelerated soil erosion.

3. Sedimentation

Heavy sediment loads reduce the tanks' storage capacity. Koddikaddiyakulum and Paravathankulam have lost more than 25% of their original capacity.

4. Land Subsidence

Poor groundwater management in areas like Aanaivilunthankulam has led to minor subsidence, affecting infrastructure and field irrigation.

5. Encroachment

Unauthorized cultivation and settlements in tank bed areas and canal reservations, notably near Parayankulam and Pidaripallamkulam, disrupt hydrology.

6. Land Ownership and Tenure Issues

Dispute on land titles delay development activities and discourage long-term investment by farmers.

7. Forest Department Interventions

Because of the war, displacement and non-returning caused some plots of lands seems like jungle. The people are migrated to the nearby cities for the children's education and facilities. Shrubs grow in the abandoned of the land plots. Demarcation of forest via areal view captured such land also as forest. Reforestation and buffer zone restrictions sometimes limit access to traditional water sources or land used by communities, leading to conflicts.

8. Wild Animal Havoc

Wild elephants, monkeys and boars frequently damage crops and water infrastructure, along the proximity to the forest reserves particularly around Thevankaddukulum and Kunchukkulam.

4.2. Irrigation related Issues

- **Lack of Awareness & Training to Farmers:** Most of the farmers in the cascade area may lack knowledge on innovative irrigation technology to improve water-use efficiency. At present, the CSIAP is conducting training programs on CSA, Operational & Management (O&M) and water management trainings to educate farmers about sustainable irrigation practices, including water-saving methods, which can enhance water use efficiency and resilience for climate change.
- **Improper Feeder & Drainage Network:** The crucial issues in the irrigation management are improper feeder, farm turnout & drainage network. Due to outdated or poorly maintained infrastructure in most of the tanks in the cascade, water may reach all areas unevenly, leading to water scarcity for some farmers in down-stream, while others face waterlogging issues. To address this issue, modernizing and upgrading the irrigation infrastructure with proper water sharing plans.
- **Lack of Water Storage Facilities:** During the monsoon season, a significant amount of water is lost due to inadequate storage capacity. Due to the encroachment at the tank bed, height of spill/ bund structures cannot be increased to increase the tank capacity. Desilting can help to capture and store water for dry periods, ensuring a more consistent water supply throughout the year.
- **Improper Irrigation Schedule:** Improper irrigation scheduling can lead to over- or under-irrigation, negatively impacting crop productivity and water conservation efforts. Implementing modern irrigation management techniques like precision agriculture, which utilizes sensors and data analytics, can provide real-time information on soil moisture levels, weather patterns, and crop water requirements. This data-driven approach enables farmers to optimize irrigation schedules and apply water precisely when and where it is needed, minimizing water wastage.
- **Less Irrigation Efficiency:** Most of the farmers adopt surface irrigation methods during their cultivation of OFC, fruit crops and perennial crops. Considering the soil and weather conditions of the cascade, the introduction of water serving techniques like alternative wet and dry method and micro irrigation can help to optimize water usage and reduce wastage of water by 25 to 35 %.
- **Uneven Water Distribution:** Due to sedimentation and degraded sluices/spillways, water from tanks is not distributed equitably across the command area. Tail-end farmers face acute shortages during dry spells.
- **Drainage Issues:** Inadequate or clogged drainage canals lead to waterlogging in paddy fields, particularly downstream of Ampalaperumalkulam and Thikkaikulam. And many feeder channels and branch channels are silted.
- **Spillway Water Loss During Rainy Season:** Many tanks, like Iththimoddai kulam and Manniyakulam, have lack of properly designed structures, causing water overflow and wastage during peak monsoon periods.

4.3 Common Issues

- **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 crop water requirements. Developing climate-resilient irrigation strategies, such as implementing micro-irrigation systems, using drought-tolerant crop varieties, and practising conservation agriculture, can help mitigate the adverse impacts of climate change and ensure the sustainability of agriculture in the area. By addressing these key issues and implementing sustainable irrigation management practices, the Mallikai Aru cascade area, can enhance water efficiency, increase agricultural productivity and ensure the long-term sustainability of water resources.
- **Limited Access to Safe Drinking Water:** Although tanks are a major water source, most of them especially Murukandykulam and Puthukkulam are not suitable for direct consumption due to contamination,
- **No transport facilities:** Many of the villagers face difficulties the access to the public transport. Many villages are located far from the main roads (The roads Jaffna Vavuniya, to Kilinochchi to Akkarayan, Poonaharyn to Mannar and Mankulam to Vellankulam). The people compelled to find their own transportation to access the public service from above any routes. This situation fairly affects the marketing of the products out of this cascade.
- **Market Linkage and Facility Deficiencies:** Farmers have lack of storage, transport, and market access, limiting their ability to profit from agriculture. Perishable produce often spoils before sale.
- **Health Hazards:** Stagnant tank water is a breeding ground for mosquitoes. Villages Ampalaperumalkulam and Thikkaikulam report seasonal health issues like dengue and diarrhea.

4.4 Major Elements of Cascade Management Plan (CMP)

4.4.1. Goal

The goal of the CMP of Mallikai Aru is to improve access to the water and to ensure the efficiency in water management (Water Conveyance Efficiency and Water Use Efficiency)

4.4.2 Objectives

The specific objectives are:

- To reduce vulnerability of climate change
- To enhance the living standards of rural communities on sustainable basis.
- To restore the watershed of the system to enhance biodiversity (Flora & Fauna, Wild animals, etc.) through integrated management
- To address the water scarcity faced by rural communities living in the cascade (addressing the farming, drinking and environmental water requirements of the area)

- To manage water and associated natural resources in a sustainable manner
- To promote crop zoning programmes and facilitate marketing
- To reduce wastage of water by 25 to 35 % through creating awareness and knowledge sharing in water management techniques, irrigation scheduling and operation and maintenance of tank cascade area, tank bed, feeder canals, and drainage networks.

4.4.3 Targets/ Specific Objectives

- To ensure availability of water throughout the year
- To enhance the biodiversity
- To facilitate transportation and marketing.
- To promote irrigation practices
- To solve land ownership.
- To prevent the illegal activities
- To establish a legally empowered entity to safeguard the cascade

4.4.4 Community's Responsibilities in the Cascade

Community responsibilities in a proposed cascade area encompass a wide range of essential actions that individuals undertake to contribute to the well-being and progress of their local community.

Recognizing the ecological importance of the cascade area, community members actively engage in practices that promote environmental conservation and sustainability. This can involve initiatives such as organizing local clean-up events, promoting recycling and waste reduction, and supporting the preservation of natural habitats.

Being an active participant in community affairs is crucial for the development and growth of the Mallikai Aru cascade area. The responsibilities entail attending meetings, Sramadana activities & voicing opinions on important issues, and actively participating in farmers' organizations and initiatives. By engaging in civic affairs, individuals can help shape local policies and promote positive change.

Embracing the spirit of giving back, community members actively seek opportunities to volunteer their time, skills, and resources. This could involve mentoring local youth, assisting with community events, providing support to vulnerable populations, or participating in local service organizations. Volunteering fosters social cohesion and empowers individuals to make a tangible difference in the lives of others.

Recognizing the value of education as a catalyst for progress, community members prioritize supporting educational initiatives within the cascade area. This can involve advocating for quality schools, promoting adult education programs, or participating in mentoring programs. By investing in education, individuals help equip community members with the knowledge and skills needed to thrive in rapidly changing farming practices and community as well.

Fostering economic growth and stability is a critical responsibility within a cascade area. Community members contribute by supporting local businesses, encouraging entrepreneurship, and attracting investments that align with sustainable development

goals. This responsibility also includes advocating for job creation, providing training opportunities, and supporting initiatives that enhance the economic viability of the community.

Celebrating and preserving the unique cultural heritage of the cascade area is an important responsibility. Community members engage in activities that promote local art, music, traditions, and historical preservation. By valuing and promoting cultural diversity, individuals contribute to a vibrant and inclusive community that fosters pride and unity among its members.

4.5 Proposed Strategic Interventions for Critical Issues

Table 11: Mallikai Aru : Proposed Strategic Interventions and Activities to Overcome the Identified Issues

S/No.	Identified critical Issues	Rank	Proposed strategic interventions	Proposed Activities	
1	Sea water intrusion towards the village via the ground water table	1	Construction of the Mandakallaru Barrage	Awareness on “effective groundwater management and land-use planning.”	
2	Capacity of water bodies is reduced	2	Increase the spill level by 1 feet at Thikkai tank	Renovation of head work of Thikkai tank including Spill & Bund length (800m)	
3	Water is overflowed		Increase bund by 1 feet - Thikkai tank		
4	The ruined channel from Vanneri to Thikkai	3	Renovation of channel from Vanneri tank to Thikkai	Renovation of Downstream (Channel) work of Thikkai tank	
5	Lack of maintenance of waste water channel		Renovation of waste water channel - Thikkai tank		
6	Silted material & other sediments in the canals		Desilting activity for 2nd channel - Thikkai tank		
7	Issues regarding maintain the water control		Construction of regulator at the end of the river (Thikkai tank)		
8	Issues identified regarding control of water	4	Additional Sluice & channel needed for OFC cultivation at Vanneri	Renovation of head work of Vanneri Tank including Sluice & Bund	
			Spill Training bund		
		5	Construction of agro channel	Renovation of Downstream (Channel) work of Vanneri Tank	
			Farm Turnout		

9	Reduced water capacity in the Anaivilunthan tank	6	Increase the spill level by 3 feet by increasing the tank bund.	Renovation of the head work of the Anaivilunthan Tank includes sluices and bounds.	
			Construction of two sluices		
		7	Construction of an agro channel (12 km)	Renovation of Downstream (Channel) work of Anaivilunthan Tank	
			Construction of branch channel (1.5 *7)		
			Construction of end regulator for waste water channel		
10	Capacity of water bodies is reduced	8	Increase the spill level at Iththimoddai Tank	Renovation of head work of Iththimoddai Tank (Spill & Culvert) at Iththimoddai Tank	
11	Issues identified regarding control of water at Iththimoddai Tank		Attach the gate for culvert which is located at the bund of Iththimoddai Tank		
12	No proper channel to discard the waste water	9	Rehabilitation of channel for discarding waste water - Iththimoddai tank	Renovation of waste water channel at Iththimoddai Tank	
13	No grazing land.	10	Establish the pasture land for free grazing	Establish the pastureland for free grazing	
14	Paravathan tank is abandoned	11	Renovation is needed for Paravathan tank	Renovation of head work of Paravathan tank	
15	Abandoned channel	12	Renovation of channel at Paravathan tank	Renovation of Downstream (Channel) work of Paravathan tank	

16	Issues identified regarding control of water at Manniya tank	13	Construction of Tractor Crossing	Renovation of head work of Manniya Tank	
			Spill Cannel to join to Amarasingam Aru		
			Construction of Culvert		
			Construction of Regulator		
17	Issues identified regarding control of water at Thevankattu Tank	14	Construction of Branch Cannel	Renovation of Downstream work of Thevankattu Tank	
			Construction of Farm turnout		
			Construction of Culvert		
			Access road		
18	Issues identified regarding control of water at Kunchchukulam	15	Construction of Feeder Channels	Renovation of head work of Kunchchukulam	
			Desilting of tank		
			Removal of water weeds		
			Renovation of Spill (Sluice & Channel)		
			Salt water intrusion bund - 3Km		
		16	Restoration of main channel	Renovation of Downstream work of Kunchchukulam	
			Construction of Farm turnout		
			Construction of Culvert		
			Renovation of Drainage Channel		

19	Issues identified regarding control of water at Ampalaperumal Kulam	17	Renovation of tank bund	Renovation of head work of Ampalaperumal Kulam	
			Rip rap structure		
			Bathing steps		
			Sluice repair		
			Raising of spill (206m*1 ft.)		
20	Reduced water capacity in the Ampalaperumal Kulam	18	Construction of concrete canals (17) with access road	Renovation of Downstream work of Ampalaperumal Kulam	
			Renovation of agro road /field road		
			Desilting of canals		
			Cleaning of spillway (5 km)		
21	Identified needed undeveloped activities	19	Construction of 212M under crossing (12th to 17th canal)	Construction of 212 M under crossing (12th to 17th canal)	
22	Identified needed undeveloped activities	20	Construction of vented causeway (500 m spill way)/alternative road	Construction of vented causeway (500 m spill way)/alternative road	
23	Abandoned tanks	21	Renovation of Anaithalaimoddai & Ambalavan Sinna kulam	Renovation of Anaithalaimoddai & Ambalavan Sinna kulam	
24	Issues identified regarding control of water at Koddai kaddi Kulam	22	Renovation of LB Channel	Renovation of head work of Koddai kaddi Kulam	
			Renovation of RB Channel		
			Renovation of Lining Bund		
25		23	Construction of bathing steps		

	Issues identified regarding control of water at Koddakaddy Kulam		Desilting of Channels - 10Km	Renovation of Downstream work of Koddakaddy Kulam	
			Construction of Drainage Channel		
			Installation of Hump Pipe		
			Agro Road - 8Km		
26	Identified needed undeveloped activities	24	Complete renovation of Vilaththimoddai tank	Complete renovation of Vilaththimoddai tank	
27	Shortage of agriculture machineries	25	Establish the village level machinery hubs and equip them	Establish the village level machinery hubs with required agriculture machineries	
28	Lack of Marketing facilities	26	Promote marketing linkage activities		
				Value addition for agriculture product	
				Promote marketing linkages	
29	Issues identified regarding control of water at Palayamurukandi Kulam	27	Renovation of Bund	Renovation of head work of Palayamurukandi Kulam	
			Renovation of FC, LB & RB Channels		
			Renovation of Spill		
			Repair of Sluice		
30	Development activities were identified under downstream	28	Renovation of Spill Training Bund	Renovation of Downstream work of Palayamurukandi Kulam	
			Clearing of Spill Tail canal		
			Repair of Main canal		

			Bridge to transport along the Spill path		
			Agro Road - 5Km		
31	Issues identified regarding control of water at Iyankan Kulam	29	Renovation of Bund	Renovation of head work of Iyankan Kulam	
			Repair of Sluice		
32	Development activities were identified under downstream	30	O&M of Road & Rehabilitation of FC	Renovation of Downstream work of Iyankan Kulam	
			Agro Road - 1.5Km		
33	Identified Abandoned tanks	31	Renovation of Thavasimoddai tank	Renovation of Thavasimoddai tank	
34	Identified transport defects due to bad condition of agro road - Thikkai tank	32	Renovation of agro road (700m +1000m) - Thikkai tank	Renovation of agro road (700m +1000m) - Thikkai tank	
35	Identified 640 ac of encroached agricultural lands by the Forest department	33	Facilitate the farmers through FOs to submit issue papers to get legal clearance for their lands.	Facilitate the farmers to get the land from the Department of Forest	
36	Damaged agricultural fields by elephants	34	Protect field from elephants through installing the hanging fence the model that is introduced by University of Vavuniya.	Installation of hanging fence - 20km at Anaivilunthan, 50Km Thikkai, Iththimoddai - 8Km, Kunchchukulam - 6km, Koddakaddi - 3km, Ampalaperumal Kulam - 6km & Palayamurukandi	
				Exposure visit to University of Vavuniya.	

37	Lack of facilities (Inputs & equipment) for promoting the aqua culture	35	Promoting the Aqua culture	Promoting the Aqua culture in Anaivilunthan, Thikkai, Kunchchukulam & Ampalaperumal Kulam	
38	Bad condition of Agro road (Anaivilunthan to Thikkai & Anaivilunthan to Uppuvil)	36	Adjoining the agro road (Anaivilunthan to Thikkai & Anaivilunthan to Uppuvil)	Renovation of Agro road (Anaivilunthan to Thikkai & Anaivilunthan to Uppuvil) - 15 Km	
39	Water scarcity	37	Providing lift irrigation facilities	Providing lift irrigation facilities for Anaivilunthan, Thikkai & Ampalaperumal Kulam	
40	Bathing steps are without any safety precaution	38	Establishment of safety fences for bathing steps	Construction of bathing steps at Anaivilunthan	
41	Lack of maintenace to the agro wells	39	Renovation of agro wells	Reconstruction of agro well - 40 Nos.	
42	No facilities for drying paddy	40	Provision of Tarpaulin for farmer organization	Purchase of 10 Nos. of Tarpaulin for FOs	
43	Damaged agricultural fields by monkeys were identified	41	Destroyed or relocated the wild life from agro field	Support to get the Air gun to FOs	
44	Abandoned tanks is identified in Navalmoddai,Vannar adampan,Puli thukki,Kunsanai vilunthan	42	Renovation needed in Navalmoddai,Vannar adampan, Puli thukki & Kunsanai vilunthan	Reconstruction of Navalmoddai,Vannar adampan, Puli thukki, Kunsanai Vilunthan Tanks	
45	The potentiality is not used to promote the tourism	43	Promote the tourism activity in Vannar adampan area	Promote the tourism activity in Vannar adampan tank	

46	Lack of own lands for farmers	44	Provide the government lands for farmers who have not own land - Iththimoddai tank	Facilitate the farmers through FOs for submit issue pare for doing OFC in ideal Land	
47	Illegal activities were identified	45	Enforce the existing legislation and Conduct awareness programme for forest conservation	Conduct awareness programme to sensitize the importance of forest	
48	Crocodile in bathing area	46	Construction of bathing steps/ Fence for the bathing area	Advocate the Department of Forest & Department of Wildlife to shift the Crocodiles.	
49	No proper location for local & Migrant birds in this area	47	Maintain the equilibrium of the nature	Facilitate to demark area for sanctuary	
50	Scarcity of drinking water	48	Installation of RO Plant (water from tank)	Provision of RO Plant to Kunchchukulam area	
51	WHF are suffering due to poverty	49	Promote the livelihood for women headed family	Promote the livelihood for women headed family	
52	Abandoned playground	50	Development of playground	Renovation of Play ground	
53	Lack of health service	51	Construction of health center	Construction of Primary Health Care Unit	
54	There is no any children park for entertaining the children	52	Construction of Children park	Construction of Children park	
55	Lack of latrine facilities	53	Provision of latrines	Provision of latrines	

56	Lack of transport facilities	56	Advocate SLTB and Private Bus Owners Association to extend the service	Advocate SLTB and Private Bus Owners Association to extend the service through Iyankan kulam	1.00
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4.6 Total Estimated Cost for Implementing Interventions and Responsibilities.

Table 12: Gantt Chart for Proposed Activities and Responsible Entities for Implementing

No.	Proposed Activities	Tentative Budget (Rs. Mn.)	Time Frame														Responsibility of Implementation	
			Short Term (Jul - Dec 2024)						Mid Term (Jan - Dec 2025)				Long Term (Jan -Jun 2026)					
			Jul	Aug	Sep	Oct	Nov	Dec	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Major	Others
1	Awareness on “effective groundwater management and land-use planning.”																DAD /CSIAP	FO
2	Renovation of head work of Thikkai tank including Spill & Bund length (800m)	30.00															DAD / CSIAP	FO
3	Renovation of Downstream (Channel) work of Thikkai tank	10.00															DAD / CSIAP	FO
4	Renovation of head work of Vanneri Tank including Sluice & Bund	100.00															DAD / CSIAP	FO
5	Renovation of Downstream (Channel) work of VanneriTank	88.00															DAD / CSIAP	FO
6	Renovation of the head work of the Anaivilunthan Tank includes 2 sluices and bunds.	75.00															DAD /DWL	FO

7	Renovation of Downstream (Channel) work of Anaivilunthan Tank	20.00															DS	FO
8	Renovation of head work of Iththomoddai Tank (Spill & Culvert) at Iththimoddai Tank	18.00															DAD /DS	FO
9	Renovation of wastewater channel at Iththomoddai Tank	10.00															DAD /CSIAP	FO
	Establish the pastureland for free grazing																DAD /CSIAP	FO
10	Renovation of head work of Paravathan tank	20.00															DAD /CSIAP	FO
11	Renovation of Downstream (Channel) work of Paravathan tank	10.00															DAD /CSIAP	FO
12	Renovation of head work of Manniya Tank	38.00															DAD /CSIAP	FO
13	Renovation of Downstream work of Thevankattu Tank	10.00															DAD /CSIAP	FO
14	Renovation of head work of Kunchchukulam	40.00															DAD /CSIAP	FO

	Renovation of Downstream work of Kunchchukulam																DAD /CSIAP	FO
	Renovation of head work of Ampalaperumal Kulam																PS/DS	FO
	Renovation of Downstream work of Ampalaperumal Kulam																DAD /DS	FO
	Construction of 212 M under crossing (12th to 17th canal)																DAD /DS	FO
	Construction of vented causeway (500 m spill way)/alternative road																DS	FO
	Renovation of Anaithalaimoddai & Ambalavan Sinna kulam																DE/DS	FO
	Renovation of head work of Koddakaddi Kulam																DAD /DS	FO
	Renovation of Downstream work of Koddakaddy Kulam																PS/DS	FO
	Complete renovation of Vilaththimoddai tank																PS/DS	FO
15	Establish the village level machinery hubs with	10.00																

	required agriculture machineries																	

	Value addition for agriculture product																
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	Promote marketing linkages																
	Renovation of head work of Palayamurukandi Kulam																
	Renovation of Downstream work of Palayamurukandi Kulam																
	Renovation of head work of Iyankan Kulam																
	Renovation of Downstream work of Iyankan Kulam																
16	Renovation of Thavasimoddai tank	20.00															
17	Renovation of agro road (700m +1000m) - Thikkai tank	5.00															
18	Facilitate the farmers to get the land from the Department of Forest	0.50															
19	Installation of hanging fence - 20km at Anaivilunthan, 50Km Thikkai, Iththimoddai - 8Km, Kunchchukulam - 6km, Koddaikaddi - 3km,	89.00															

	Ampalaperumal Kulam - 6km & Palayamurukandi																	
20	Exposure visit to University of Vavuniya.	1.00																
21	Promoting the Aqua culture in Anaivilunthan, Thikkai, Kunchchukulam & Ampalaperumal Kulam	5.00																
22	Renovation of Agro roads (Anaivilunthan to Thikkai & Anaivilunthan to Uppuvil) - 15 Km	25.00																
	Providing lift irrigation facilities for Anaivilunthan, Thikkai & Ampalaperumal Kulam																	
	Construction of bathing steps at Anaivilunthan	2.00																
23	Renovation of agro well - 40 Nos.	25.00																
24	Purchase of 10 Nos. of Tarpaulin for FOs	1.00																
	Support to get the Air gun to FOs	1.00																

25	Renovation of Navalmoddai, Vannar adampan, Puli thukki, Kunsanai Vilunthan Tanks	20.00																
26	Promote the tourism in Vannar adampan tank	5.00																
	Facilitate the farmers through FOs for submit issue pare for doing OFC in ideal Land																	
28	Conduct awareness programme to sensitize the importance of forest	1.00																
	Advocate the Department of Forest & Department of Wildlife to shift the Crocodiles.																	
	Develop place for bird sanctuary	10.00																
	Provision of RO Plant to Kunchchukulam area																	
29	Promote the livelihood for women headed family	10.00																
30	Renovation of Playground	10.00																

	Construction of Primary Health Care Unit																
31	Construction of Children park	30.00															
	Provision of latrines																
32	Advocate SLTB and Private Bus Owners Association to extend the service through Iyankan kulam	0.50															

Table 13: Expected Contribution from Stakeholder Agencies

N0	Description				Cost (Rs Mn)		Procurement Category		Procurement Method		
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
	N0	Description			Cost	Procurement Category	Procurement Method	Implementing Agency	Consultant Agency		

		(Rs Mn)							
1	Establish the pastureland for free grazing					PID			
2	Facilitate the farmers to get the land from the Department of Forest	0.50							
3	Support to get the Air gun to FOs	1.00							
4	Facilitate the farmers through FOs for submit issue pare for doing OFC in ideal Land								
5	Provision of latrines					DAD			
6	Construction of Primary Health Care Unit					DAD			
7						DAD			
8						DAD			
9						DAD			
10						DAD			

4.7 Interventions and Major Activities Expected to be Implemented by the CSIAP

Table 14: Gantt Chart for Proposed Activities to be Implemented by CSIAP

No.	Proposed Activities	Total Budget (Rs. Mn.)	Time Frame							
			2024/2025				2025/2026			
			3 rd	4 th	1 st	2 nd	3 rd	4 th	1 st	2 nd
1	Awareness on “effective groundwater management and land-use planning.”									
2	Renovation of head work of Thikkai tank including Spill & Bund length (800m)	30.00								
3	Renovation of Downstream (Channel) work of Thikkai tank	10.00								
4	Renovation of head work of Vanneri Tank including Sluice & Bund	100.00								
5	Renovation of Downstream (Channel) work of Vanneri Tank	88.00								
6	Renovation of the head work of the Anaivilunthan Tank includes 2 sluices and bunds.	75.00								
7	Renovation of Downstream (Channel) work of Anaivilunthan Tank	20.00								
8	Renovation of head work of Iththomoddai Tank (Spill & Culvert) at Iththimoddai Tank	18.00								
9	Renovation of wastewater channel at Iththomoddai Tank	10.00								
10	Renovation of head work of Paravathan tank	20.00								
11	Renovation of Downstream (Channel) work of Paravathan tank	10.00								
12	Renovation of head work of Manniya Tank	38.00								

13	Renovation of Downstream work of Thevankattu Tank	10.00								
14	Renovation of head work of Kunchchukulam	40.00								
15	Establish the village level machinery hubs with required agriculture machineries	10.00								
16	Renovation of Thavasimoddai tank	20.00								
17	Renovation of agro road (700m +1000m) - Thikkai tank	5.00								
19	Installation of hanging fence - 20km at Anaivilunthan, 50Km Thikkai, Iththimoddai - 8Km, Kunchchukulam - 6km, Koddakaddi - 3km, Ampalaperumal Kulam - 6km & Palayamurukandi	89.00								
20	Exposure visit to University of Vavuniya.	1.00								
21	Promoting the Aqua culture in Anaivilunthan, Thikkai, Kunchchukulam & Ampalaperumal Kulam	5.00								
22	Renovation of Agro roads (Anaivilunthan to Thikkai & Anaivilunthan to Uppuvil) - 15 Km	25.00								
23	Renovation of agro well - 40 Nos.	25.00								
24	Purchase of 10 Nos. of Tarpaulin for FOs	1.00								
25	Renovation of Navalmoddai, Vannar adampan, Puli thukki, Kunsanai Vilunthan Tanks	20.00								
26	Promote the tourism in Vannar adampan tank	5.00								
27	Conduct awareness programme to sensitize the importance of forest	1.00								

28	Advocate the Department of Forest & Department of Wildlife to shift the Crocodiles.									
29	Develop place for bird sanctuary	10.00								
30	Promote the livelihood for women headed family	10.00								
31	Renovation of Playground	10.00								
32	Construction of Children park	30.00								
33	Advocate SLTB and Private Bus Owners Association to extend the service through Iyankan kulam	0.50								

4.8 Implementation Methodology of the Cascade Management Plan

CMBDP should be submitted to the Divisional Agriculture Committee and the District Agriculture Committee for approval. After getting the approval, it will be implemented. The sub-project proposal (Attachment No. 04) will be prepared by CMC with the support of the relevant implementing agencies for obtaining capital assistance. Major partner institutions are committed to implementing the proposed activities, preparing and supporting existing investment plans, budget reports and implementation plans, and assisting CMC in submitting grant funding proposals to be provided. Social Audit Committees of sub-project implementation effectiveness. CMC appoints Social Audit Committees and gives active contributions to the beneficiaries to enhance the quality of work performed by the CMC.

5 Annexures

5.1 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

அனைத்து மாவட்ட செயலாளர்களுக்கும் பிரதேச செயலாளர்களுக்கும்,

குளஅடுக்குத் தொடர் அமைப்பு முகாமைத்துவ குழு உருவாக்கம் மற்றும் நடாத்திச்செல்லல் ஒழுங்கு முறைகள்

நாட்டின் உள்ளகத்திலிருந்து கடலுக்கு வழிந்தோடும் பிரதான ஆறுகள் மூன்றாம் நிலை நீர்வழிகள் எனவும், அப்பிரதான ஆறுகளை சேரும் கிளை ஆறுகள் இரண்டாம் நிலை நீர்வழிகள் எனவும் அக்கிளை ஆறுகளுக்கு நீர் வழங்கும் சிறிய நீர்வழிகள் ஆரம்ப நிலை நீர்வழிகள் எனவும் அழைக்கப்படும். கிராமிய மட்டத்திலான குளங்களும் நீர்த்தேக்கங்களும் பெரும்பாலும் ஆரம்ப நிலை நீர்வழிகளினூடு அமைக்கப்பட்டுள்ளதோடு பூமியின் மேற்பரப்பில் நீரைத்தேக்கி கீழே வழிந்தோடச் செய்ய அமைக்கப்பட்டிருக்கும் வாவிக்களும் இதனுள் அடங்கும்.

02. நாட்டின் உள்ளகத்தில் காணப்படும் ஆரம்ப நிலை நீர்வழியொன்று அல்லது நீர்வழி வலையமைப்பிலுள்ள நீரியல் ரீதியாக ஒன்றிணைந்த சிறு மற்றும் நடுத்தர அளவிலான வாவி அமைப்புக்கள் அல்லது குளங்கள் மற்றும் நீர்த்தேக்க அமைப்புக்கள் அல்லது நீர்த்தேக்க அமைப்புக்களினாலான நடுத்தர அளவிலான நீரேந்து பகுதி குளஅடுக்குத் தொடர் அமைப்பு என கூறப்படும்.

03. இலங்கையில் 1166 குளஅடுக்குத் தொடர் அமைப்புக்கள் கண்டுபிடிக்கப்பட்டுள்ளன. இக் குளஅடுக்குத் தொடர் அமைப்புக்களை மையமாகக்கொண்டு புவியியல், நீரியல், சூழலியல் மற்றும் சமூக பொருளாதார மேம்பாடு குறித்து வளப்பயன்பாட்டினை வினைத்திறனாகவும் நிலையானதாகவும் கொண்டு செல்வதனை இலக்காகக் கொண்டு 1968 இலக்கம் 48 நீர்ப்பாசன (திருத்தங்கள்) கட்டளைச் சட்டத்தின் திருத்தியமைக்கப்பட்ட 1946 இலக்கம் 32 நீர்ப்பாசன கட்டளைச்சட்டத்தின் 1(அ) 1,2,3,4 உறுப்புரைகளின் பிரகாரம் கமநல அபிவிருத்தி ஆணையாளர் நாயகத்திற்கு வழங்கப்பட்டிருக்கும் அதிகாரங்களுக்கமைய மேற்குறிப்பிட்ட சட்டத்திற்கமைய நடாத்தப்படும் மாவட்ட வேளாண்மை குழுவின் போது, நீர்ப்பாசனக் கைத்தொழிலை மையமாகக் கொண்ட நெல் உற்பத்தி உள்ளிட்ட வேளாண்மையில் தாக்கம் செலுத்தும் அல்லது அனைத்து துணைக்காரணிகள் குறித்து நடவடிக்கைகளை மேற்கொள்ள குறித்த சட்டத்தினால் உங்களுக்கு வழங்கப்பட்டுள்ள அதிகாரங்களின் பிரகாரம் குளஅடுக்குத் தொடர் அமைப்பு முகாமைத்துவ குழுக்களை உருவாக்குதல் மற்றும் நடாத்திச்செல்லுதல் ஒழுங்கு முறைகள் தொடர்பாக வேளாண்மைக் குழுவில் கலந்துரையாடுமாறும் அதற்கு கீழ் குறிப்பிட்டுள்ள விடயங்களை வழிகாட்டிகளாக பயன்படுத்துமாறு கனிவுடன் தெரிவிக்கிறேன்.

3.1 குளஅடுக்குத் தொடர் அமைப்பு முகாமைத்துவ குழுக்களை உருவாக்குவதற்கான குறிக்கோள்கள்

- குளஅடுக்குத் தொடரில் அமைந்துள்ள அனைத்து இயற்கை வளங்கள், அதாவது மண், நீர், வன வளம், உயிரியல் அமைப்புக்கள், காணி மற்றும் நீர்ப்பாசன கட்டமைப்புக்களை முகாமைத்துவம் செய்வதற்காக நலன்விரும்பிகள் மற்றும் குறித்த அரச அதிகாரிகள் ஒருமித்த அணுகுமுறையுடன் செயல்படுவதற்கான நிறுவன கட்டமைப்பொன்றினை அமைத்தல்.
- நீர்ப்பாசன வேளாண்மை, கால்நடை தொடர்பான நடவடிக்கைகள் மற்றும் நன்னீர் மீன்பிடிக்கைத் தொழிலிற்கு நீர் வழங்கல், வன வளம் மற்றும் வன விலங்குகளின் தேவைப்பாடுகளை சமாந்தரமாக நடாத்திச் செல்லல், நிலத்தடி நீரினை உகந்தவாறு பேணுதல் வீட்டுத்தோட்ட பராமரிப்பு உள்ளிட்ட வீட்டு நீர் பாவனையினை முறையாக முகாமைத்துவம் செய்தல்.

- iii) வேளாண்மை நடவடிக்கைகளுக்கு நீர்ப்பாவனை செய்பவர்கள் உள்ளிட்ட படிநிலை அமைப்பினை பராமரிப்பு செய்வதற்காக வேறு பயனாளிகள் மற்றும் பங்குதாரர்களின் ஒத்துழைப்பினை பெற்றுக் கொள்ளல்.

3.2 குளஅடுக்குத் தொடர் அமைப்பு முகாமைத்துவ குழுக்களை உருவாக்குவதற்கான நோக்கங்கள்

- குளஅடுக்குத் தொடர் அமைப்பு முகாமைத்துவம் மற்றும் நிலையான பேணுகைக்காக சட்டபூர்வ அங்கீகாரத்துடனான நிறுவன கட்டமைப்பொன்றினை உருவாக்குதல்.
- ஒவ்வொரு குளஅடுக்குத் தொடர் அமைப்புக்களுக்கும் ஏற்ப அதன் செயல்பாட்டிற்கும் நிலையான பாவனைக்கும் தொடர்புடைய பிரச்சினைகள் மற்றும் முன்மொழிந்த தீர்வுகளை ஒருங்கிணைந்த அணுகுமுறையுடன் கலந்தாலோசித்து சட்டபூர்வ அங்கீகாரத்துடனான முறைமை ஒன்றினை உருவாக்குதல்.
- குளஅடுக்குத் தொடரிற்குள் உள்ள வேளாண்மை, நீர் முகாமைத்துவ, சூழலியல், சமூக பொருளாதார மற்றும் புவியியல் காரணி அமைப்பின் செயல்திறனுக்காக தொடர்ச்சியாகவும் வினைத்திறனாகவும் நடாத்திச் செல்வதற்கான முறைமையொன்றை ஏற்படுத்தல்.
- குளஅடுக்குத் தொடர் அமைப்பின் அபிவிருத்தி நடவடிக்கைகளில் முழு அமைப்பிற்கும் இடம்பெறும் சேதங்களைத் தடுத்து தேவைகளை உறுதிப்படுத்தல், நீர்வளத்தினை வினைத்திறனான முறையில் பாவனை செய்வதற்காக சாகுபடி உற்பத்தியினை அடித்தளமாகக் கொண்டு திட்டங்களை நிர்மாணித்தல்.
- குளஅடுக்குத் தொடர் அமைப்பிற்கு ஒருங்கிணைந்த வேளாண்மை உற்பத்தி திட்டமொன்றினை நிர்மாணித்தல் மற்றும் அத்திட்டத்தின் செயல்திறன் நிலைமையை கண்காணித்தல்.
- குளஅடுக்குத் தொடர் அமைப்பொன்றில் காணப்பட வேண்டிய கூறுகளை மாற்றுவதற்கு தேவையான நடவடிக்கைகளை மேற்கொள்ளல்.
- குளஅடுக்குத் தொடர் அமைப்புடன் தொடர்புடைய சமூக பொருளாதார தொடர்புகளை பேணுதல் மற்றும் அது தொடர்பிலான பங்குதாரர்களை விழிப்புணர்த்துதல்.

3.3 குளஅடுக்குத் தொடர் அமைப்பு முகாமைத்துவ குழுவின் பணிகள்

- குளஅடுக்குத் தொடர் அமைப்பிற்கான திட்டங்களை தயாரித்தல், நடைமுறைப்படுத்தல் மற்றும் கண்காணித்தல்.
- குளஅடுக்குத் தொடர் அமைப்பு முகாமைத்துவ குழு அங்கத்தவர்களால் முன்வைக்கப்படும் பிரச்சினைகள், முன்மொழிவுகள் மற்றும் திட்டங்களுக்காக தீர்வுகளை முன்வைத்தாலும் தீர்வு காண முடியாத பிரச்சனைகளை பொருத்தமான பிரதேச/ மாவட்ட வேளாண்மை குழுவிடம் முன்வைத்து தீர்த்துக் கொள்ளல்.
- குளஅடுக்குத் தொடர் அமைப்பு முகாமைத்துவத்துடன் தொடர்புடைய அறிக்கையினை சந்தர்ப்பத்திற்கேற்றவாறு பிரதேச/மாவட்ட வேளாண்மை குழுவிடம் முன்வைத்தல்.
- கிராமிய குளஅடுக்குத் தொடர் களில் அமையப்பெற்றிருக்கும் அனைத்து நீர் மூலங்கள் மற்றும் நீர் நுகர்வோர்கள் ஒன்றிணைத்து குளஅடுக்குத் தொடர் சேர்ந்த மத்திய நீர்ப்பிடிப்புப் பகுதிக்காக ஒருங்கிணைந்த வேளாண்மை திட்டமொன்றினை உருவாக்கி நடைமுறைப்படுத்தல்.
- குளஅடுக்குத் தொடர் அமைப்பொன்றினுள் நடவடிக்கைகளில் ஈடுபடும் அனைத்து நீர் நுகர்வோர்களினதும் தேவைப்பாடுகளுக்கேற்ப நீர்ப்பிடிப்பு பிரதேசத்திலுள்ள இயற்கை வள முகாமைத்துவம் தொடர்பிலான தீர்மானங்களை மேற்கொள்ளுதல் மற்றும் நடைமுறைப்படுத்துதல்.

- vi) இயற்கை அனர்த்தங்கள், அழிவுகள், தீங்கு விளைவிக்கும் மனித நடவடிக்கைகளை குறைக்கக்கூடிய வகையில் அனைத்து நீர்மூலங்களையும் முகாமை செய்தல்.
- vii) குளஅடுக்குத் தொடரிலுள்ள அனைத்து நீர் மூலங்களையும் மையமாகக் கொண்ட நீர் வாடிக்கையாளர்களுக்கிடையே வினைத்திறனான தகவல் தொடர்பாடல் முறையொன்றினை உருவாக்குதல்.
- viii) படிநிலையிலுள்ள சுற்றுச்சூழல் அமைப்புக்களுடன் தொடர்புடைய உள்ளீடுகள் மற்றும் வெளியீடுகள் திறனான முறையில் முகாமைத்துவம் செய்ய முறையான வழிமுறை ஒன்றினை உருவாக்குதல்.
- ix) தற்போதைய மற்றும் எதிர்காலத்தில் நிகழும் என கணிக்கப்படும் காலநிலை மாற்றங்களுக்கு தகுந்த காலநிலை நட்பு உபாயமுறை திட்டங்களை நடைமுறைப்படுத்துதலும் நீர் நுகர்வோர்களை அவ்வாறான காலநிலை மாற்றங்களுக்கு பழக்கப்படுத்துதல்.
- x) குளஅடுக்குத் தொடர் அமைப்பு முறைமைக்குள் நீர் வாடிக்கையாளர்களிடையே அறிவு, திறன், மனப்பாங்கு மற்றும் வளங்களை வினைத்திறனான முறையில் பரிமாற்றம் செய்து கொள்ளல்.
- xi) நீர் நுகர்வோர்களின் காணி, நீர் மற்றும் சுற்றுச்சூழல் அமைப்புக்களின் வினைத்திறனை மேம்படுத்துவதற்கான நடவடிக்கைகளை மேற்கொள்ளல்.
- xii) வேளாண்மைக்கு மற்றும் நீர் நுகர்விற்கேற்ற சுற்றுச்சூழல் அமைப்புக்களுடன் தொடர்புடைய பாரம்பரிய சட்டங்கள் மற்றும் இயற்றப்பட்ட சட்டங்களை அமுலுக்கு கொண்டு வருவதற்குத் தேவையான ஆதரவினை வழங்குதல்.
- xiii) காணி உரித்துடைய விவசாயிகள் மற்றும் உரிமையாளர்களின் கூட்டத்தினை(சாகுபடி உற்பத்திக் கூட்டம்) நடாத்த தேவையான அடிப்படை தீர்மானங்களை மேற்கொள்ள விவசாயிகளுக்கு உதவி புரிதல்,அதனோடு தொடர்புடைய ஒருங்கிணைப்பு நடவடிக்கைகளை மேற்கொள்ளுதல் மற்றும் கண்காணித்தல்.
- xiv) குளஅடுக்குத் தொடர் அமைப்பு அதிகாரப்பிரதேசக்குள்ளான அனைத்து நீர் மூலங்கள் மற்றும் அதனோடு தொடர்புடைய ஏனைய சுற்றுச்சூழல் அமைப்புக்களின் நிலையான தன்மையினை பேணுவதற்காக குறித்த குறித்த அரச நிறுவனங்களின் வழிகாட்டல்கள் மற்றும் அறிவுறுத்தல்களை பின்பற்றி பாதுகாப்பதற்கு உரிய நடவடிக்கைகளை மேற்கொள்ளல்.
- xv) குளஅடுக்குத் தொடர் அமைப்பிற்கு பாதிப்பினை உண்டுபண்ணும் பங்குதாரர்களுக்கு எதிராக சட்ட செயற்பாடுகளை மேற்கொள்வதற்கு தேவையான நடவடிக்கைகளை மேற்கொள்ளல்.
- xvi) குளஅடுக்குத் தொடர் அமைப்பின் அனைத்து அபிவிருத்தி நடவடிக்கைகளிலும் செயன்முறை ரீதியாக பங்களிப்பினை வழங்கலும் முன்னேற்றத்தை கலந்தாலோசித்தலும்
- xvii) குளஅடுக்குத் தொடர் அமைப்பில் நீர்ப்பாசன கைத்தொழிலில் கூட்ட தீர்மானங்களை நடைமுறைபடுத்தும் நிலைமையினை கண்காணித்தல்.
- xviii) குளஅடுக்குத் தொடர் அமைப்பின் நீர்ப்பாசன கைத்தொழில்களின் செயல்பாடுகள் மற்றும் பராமரிப்பு நிகழ்வுகளை கண்காணித்தல்.

3.4 குளஅடுக்குத் தொடர் அமைப்பு முகாமைத்துவ குழுவின் கலவை

3.4.1 பிரதேச மட்டம்

இக்குழு குறித்த பிரதேச செயலக அதிகாரப் பிரதேசத்தின் கீழுள்ள அதிகாரிகளினால் உள்ளடக்கியதாகும்.

- i. பிரதேச செயலாளர்
- ii. கமநல அபிவிருத்தி பிரதேச அதிகாரி
- iii. வேளாண்மை ஆலோசகர்

- iv. மாகாண நீர்ப்பாசன திணைக்களத்தினை பிரதிநிதித்துவப்படுத்துமாறு பொறியியலாளர் / தொழிநுட்ப அதிகாரி
- v. கமநல அபிவிருத்தி திணைக்களத்தினை பிரதிநிதித்துவப்படுத்தும் பிரதேச பொருளியலாளர் / தொழிநுட்ப அதிகாரி
- vi. வேளாண்மை ஆராய்ச்சி மற்றும் உற்பத்தி உதவியாளர்
- vii. கிராம அலுவலர்
- viii. சமுர்தி அபிவிருத்தி உத்தியோகத்தர்
- ix. பொருளாதார அபிவிருத்தி உத்தியோகத்தர்
- x. காணி பயன்பாடு மற்றும் கொள்கை உருவாக்க திணைக்களத்தின் பிரதிநிதி ஒருவர்
- xi. மாகாண மீன்பிடித் திணைக்களத்தின் பிரதிநிதி ஒருவர்
- xii. நீர் உயிரினவளர்ப்பு அபிவிருத்தி அதிகார சபையின் பிரதிநிதி ஒருவர்
- xiii. சுற்றாடல் அதிகாரசபையின் பிரதிநிதி ஒருவர்
- xiv. பொலிஸ் சுற்றாடல் பிரிவின் பிரதிநிதி ஒருவர்
- xv. விலங்குற்பத்தி மற்றும் சுகாதார திணைக்களத்தின் பிரதிநிதி ஒருவர்
- xvi. வேளாண்மை மற்றும் கமநல காப்புறுதி சபையின் பிரதிநிதி ஒருவர்
- xvii. நீர்ப்பாசன பொறியியலாளர் / தொழிநுட்ப அதிகாரி
- xviii. வனசீவராசிகள் பாதுகாப்புத் திணைக்களத்தின் பிரதிநிதி ஒருவர்
- xix. வனப் பாதுகாப்புத் திணைக்களத்தின் பிரதிநிதி ஒருவர்
- xx. புவிச்சரிதவியல் மற்றும் சுரங்கப் பணியகத்தின் பிரதிநிதி ஒருவர்
- xxi. தேசிய நீர்வழங்கல் மற்றும் வடிகாலமைப்பு சபையின் பிரதிநிதி ஒருவர்
- xxii. தொல்பொருளியல் திணைக்களத்தின் பிரதிநிதி ஒருவர்
- xxiii. சிவில் பாதுகாப்புத் திணைக்களத்தின் பிரதிநிதி ஒருவர்
- xxiv. உள்நூராட்சி நிறுவனங்களை பிரதிநிதித்துவப்படுத்தும் அதிகாரமுடைய அலுவலர் ஒருவர்
- xxv. விவசாய அமைப்புக்கள், மாதர் விவசாய அமைப்புக்கள், உற்பத்தி விவசாய குழுக்களை பிரதிநிதித்துவப்படுத்தி ஒவ்வோர் அமைப்புக்களினதும் தலைவர் அல்லது செயலாளர்
- xxvi. சமுதாய நீர் வழங்கல் அமைப்பொன்றின் பிரதிநிதி ஒருவர்
- xxvii. வேறு சமூக அமைப்புக்கள் மற்றும் சுற்றாடல் அமைப்புக்களை பிரதிநிதித்துவப்படுத்தி அமைப்பொன்றின் பிரதிநிதி ஒருவர்

3.4.2 மாவட்ட மட்டம்

இக்குழு குறித்த மாவட்டத்தின் கீழுள்ள அதிகாரிகளை உள்ளடக்கியது.

- i. மாவட்ட தலைவர் அல்லது மாவட்ட செயலாளர்
- ii. பிரதேச செயலாளர்
- iii. கமநல அபிவிருத்தி பிரதி / உதவி ஆணையாளர்
- iv. உள்நூராட்சி நிறுவனங்களை பிரதிநிதித்துவப்படுத்தி உள்நூராட்சி உதவி ஆணையாளர் அல்லது பிரதிநிதி ஒருவர்
- v. மாவட்ட வேளாண்மை பணிப்பாளர்
- vi. மாகாண மற்றும் மாகாணங்களுக்கிடையேயான பிரதி வேளாண்மை பணிப்பாளர்கள்
- vii. நீர்ப்பாசனத்துறை பணிப்பாளர் அல்லது பிரதான பொறியியலாளர்
- viii. மாகாண நீர்ப்பாசனத் திணைக்களத்தினை பிரதிநிதித்துவப்படுத்தி பிரதி பணிப்பாளர் அல்லது பிரதிநிதி ஒருவர்
- ix. காணி உபயோகம் மற்றும் கொள்கை உருவாக்க திணைக்களத்தின் உதவிப் பணிப்பாளர் அல்லது மாவட்ட அதிகாரி

- x. மாகாண மீன்பிடி திணைக்களத்தின் பணிப்பாளர் அல்லது பிரதிநிதி ஒருவர்
- xi. நீர் உயிரினவளர்ப்பு அபிவிருத்தி அதிகார சபையின் உதவிப் பணிப்பாளர் அல்லது மாவட்ட அதிகாரி
- xii. சுற்றாடல் அதிகார சபையின் மாவட்ட உதவிப்பணிப்பாளர் அல்லது மாவட்ட அதிகாரி
- xiii. விலங்குற்பத்தி மற்றும் சுகாதார திணைக்களத்தின் பிரதிப்பணிப்பாளர் அல்லது பிரதிநிதி ஒருவர்
- xiv. வேளாண்மை மற்றும் கமநல காப்புறுதி சபையின் உதவிப்பணிப்பாளர் அல்லது பிரதிநிதி ஒருவர்
- xv. வனசீவராசிகள் பாதுகாப்புத் திணைக்களத்தின் உதவிப்பணிப்பாளர் அல்லது மாவட்ட அதிகாரி
- xvi. வனப் பாதுகாப்புத் திணைக்களத்தின் மாவட்ட வனபாதுகாப்பு அதிகாரி அல்லது பிரதிநிதி ஒருவர்
- xvii. தேசிய நீர்வழங்கல் மற்றும் வடிகாலமைப்பு சபையின் மாவட்ட அதிகாரி அல்லது பொறியியலாளர்
- xviii. தொல்பொருளியல் திணைக்களத்தின் உதவிப்பணிப்பாளர் அல்லது மாவட்ட அதிகாரி
- xix. புவிச்சரிதவியல் மற்றும் சுரங்கப் பணியகத்தின் பிரதிநிதி ஒருவர்
- xx. கமநல அபிவிருத்தி பிரதேச அதிகாரி
- xxi. பொலிஸ் சுற்றாடல் பிரிவின் நிலைய அதிகாரி
- xxii. சிவில் பாதுகாப்பு திணைக்களத்தின் பிரதிநிதி ஒருவர்
- xxiii. மாவட்ட விவசாய அமைப்புக்களின் கூட்டமைப்பினை பிரதிநிதித்துவப்படுத்தி தலைவர் / செயலாளர் அல்லது பிரதிநிதி ஒருவர்
- xxiv. சமூக நீர் வழங்கல் அமைப்பின் பொறுப்பதிகாரி அல்லது மாவட்ட பிரதிநிதி ஒருவர்
- xxv. வேறு சமூக அமைப்புக்கள் மற்றும் சுற்றாடல் அமைப்புக்களின் மாவட்ட மட்டத்தினை பிரதிநிதித்துவப்படுத்தி ஒரு அமைப்பிலிருந்து ஒரு பிரதிநிதி

க:வே :- குளஅடுக்குத் தொடர் அமைப்பு கட்டுப்பாட்டு பிரதேச எல்லைக்குள் குறித்த நிறுவனத்தில் கட்டுப்பாட்டு பிரதேசங்கள் ஒன்றை விடக் கூடுதலாகக் காணப்படும் சந்தர்ப்பத்தில் அவ்வவ் கட்டுப்பாட்டு பிரதேசங்களை பிரதிநிதித்துவப்படுத்தி மேலுள்ளவாறு பொறுப்பதிகாரிகள் கலந்து கொள்ள வேண்டும்.

3.5 குளஅடுக்குத் தொடர் அமைப்பு முகாமைத்துவ குழுவொன்றின் அதிகாரிகள் குழாம் – பிரதேச மட்டம்

- i. படிநிலை அமைப்பிற்கு பிரதேச செயலாளர் பிரிவுகள் ஒன்றை விடக்கூடுதல் காணப்படும் சந்தர்ப்பத்தில் கலந்து கொள்ளும் அனைத்து பிரதேச செயலாளர்களும் குழுவின் இணைத்தலைவராக உத்தியோகபூர்வமாக செயல்பட வேண்டும்.
- ii. படிநிலை அமைப்பிற்கான கமநல சேவை கட்டுப்பாட்டு பிரதேசத்தில் கமநல அபிவிருத்தி பிரதேச அதிகாரி குழுவின் செயலாளராக உத்தியோகபூர்வமாக செயல்பட வேண்டும். படிநிலை அமைப்பிற்கு கமநல சேவை கட்டுப்பாட்டு பிரதேசங்கள் ஒன்றை விடக்கூடுதல் காணப்படும் சந்தர்ப்பங்களில் கூடிய நீரேந்து ஏக்கர் எண்ணிக்கையினை கொண்ட கட்டுப்பாட்டு பிரதேசத்தின் கமநல அபிவிருத்தி பிரதேச அதிகாரி செயலாளராக செயல்பட வேண்டும்.
- iii. குழு தலைவரின் அறிவுரைகளுக்கேற்ப செயலாளரால் கூட்டம் ஏற்பாடு செய்யப்பட வேண்டும்.

3.6 குளஅடுக்குத் தொடர் அமைப்பு முகாமைத்துவ குழுவொன்றின் அதிகாரிகள் குழாம் – மாவட்ட மட்டம்

- i. குளஅடுக்குத் தொடர் அமைப்பிற்கு மாவட்டங்கள் ஒன்றை விடக்கூடுதல் காணப்படும் சந்தர்ப்பத்தில் கலந்து கொள்ளும் அனைத்து மாவட்ட செயலாளர்களும் குழுவின் இணைத்தலைவராக உத்தியோகபூர்வமாக செயல்பட வேண்டும்.
- ii. குளஅடுக்குத் தொடர் அமைப்பின் மாவட்ட பிரதி / உதவி ஆணையாளர்கள் குழுவின் செயலாளராக உத்தியோகபூர்வமாக செயல்பட வேண்டும். குளஅடுக்குத் தொடர் அமைப்பிற்கு கமநல சேவை கட்டுப்பாட்டு பிரதேசங்கள் ஒன்றை விடக்கூடுதல் காணப்படும் சந்தர்ப்பங்களில் கூடிய நீரேந்து ஏக்கர் எண்ணிக்கையினை கொண்ட மாவட்ட பிரதி / உதவி ஆணையாளர்கள் செயலாளராக செயல்பட வேண்டும்.
- iii. குழு தலைவரின் அறிவுரைகளுக்கேற்ப செயலாளரால் கூட்டம் ஏற்பாடு செய்யப்பட வேண்டும்.

04. இலங்கையின் வேளாண்மைத்துறையின் நிலையான தன்மை தங்கி நிற்கும் பிரதான காரணியான உயிரியல் அமைப்புக்களின் முகாமைத்துவத்திற்காக குளஅடுக்குத் தொடர் நீர்ப்பாசன முகாமைத்துவத்தினை முறைமையாக்குமுகமாக உருவாக்கப்படும் குளஅடுக்குத் தொடர் அமைப்பு முகாமைத்துவ குழுக்கள் மூலம் எதிர்பார்க்கப்படும் பணிகளை நிறைவேற்ற ஒருங்கிணைந்து செயற்படுவீர்கள் என எதிர்பார்க்கின்றேன்.

ஏ.எச்.எம்.எல்.அபேரத்ன
கமநல அபிவிருத்தி ஆணையாளர் நாயகம்

பிரதி :-

- i. செயலாளர், பொது நிர்வாக, உள்நாட்டலுவல்கள், மாகாண சபைகள் மற்றும் உள்ளூராட்சி அமைச்சு
- ii. செயலாளர், விவசாயத் திணைக்களம்
- iii. அனைத்து மாகாண பிரதான செயலாளர்கள்
- iv. கணக்காய்வாளர், தேசிய கணக்காய்வு அலுவலகம்
- v. பொலிஸ் மா அதிபர், இலங்கை பொலிஸ் திணைக்களம்
- vi. பணிப்பாளர் நாயகம், விவசாய திணைக்களம்
- vii. பணிப்பாளர் நாயகம், நீர்ப்பாசன திணைக்களம்
- viii. பணிப்பாளர் நாயகம், சமுர்தி அபிவிருத்தித் திணைக்களம்
- ix. பணிப்பாளர் நாயகம், வனசீவராசிகள் பாதுகாப்புத் திணைக்களம்
- x. வனப்பாதுகாப்பு நாயகம், வனப்பதுகாப்புத் திணைக்களம்
- xi. பணிப்பாளர் நாயகம், விலங்குநபத்தி மற்றும் சுகாதார திணைக்களம்
- xii. பணிப்பாளர் நாயகம், காணி உபயோக கொள்கை திட்டமிடல் திணைக்களம்
- xiii. பணிப்பாளர் நாயகம், தொல்பொருளியல் திணைக்களம்
- xiv. பணிப்பாளர் நாயகம், இலங்கை சிவில் பாதுகாப்பு திணைக்களம்
- xv. பணிப்பாளர் நாயகம், நீர் உயிரினவளர்ப்பு அபிவிருத்தி அதிகார சபை
- xvi. பணிப்பாளர் நாயகம், மத்திய சுற்றாடல் அதிகார சபை
- xvii. பணிப்பாளர் நாயகம், புவிச்சரிதவியல் மற்றும் சுரங்கப் பணியகம்
- xviii. தலைவர், வேளாண்மை மற்றும் கமநல காப்புறுதி சபை
- xix. தலைவர், தேசிய நீர்வழங்கல் மற்றும் வடிகாலமைப்பு சபை
- xx. அனைத்து மாகாண செயலாளர்கள், மாகாண வேளாண்மை திணைக்களம்
- xxi. செயலாளர், மாகாண நீர்ப்பாசன அமைச்சு
- xxii. அனைத்து மாகாண வேளாண்மை பணிப்பாளர்கள், மாகாண வேளாண்மை திணைக்களம்

- xxiii. அனைத்து மாகாண விலங்குற்பத்தி மற்றும் சுகாதார பணிப்பாளர்கள், மாகாண விலங்குற்பத்தி மற்றும் சுகாதார திணைக்களம்
- xxiv. கருத்திட்ட பிரதானிகள் – CSIAP / CRIWMP / SARP
- xxv. அனைத்து கமநல அபிவிருத்தி பிரதி / உதவி ஆணையாளர்கள்

(தகவலறிவதற்காகவும் தேவையான விவகாரங்களுக்காக)

5.2 Annexure 2: List of stakeholder agencies participated in transact walk to learn



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

Province : Northern DS Division : Korachchi Venue : Veruwi, Akkarayan
District : Kilinochchi ASC Division : Akkurayan Date : 09.04.2024
Objectives of the Programme / Awareness : Transact walk for emp malikai Aru Lower (Akkurayan)

No	Name of the Participant (Name)	Name of the Organization (Organization)	ID NO (CS-51-51-51)	Contact no (09-51-51-51)	M (Gender) / F (Gender)	Signature
1	S. Kesiga	CSIAP-FO	-	-	F	S. Kesiga
2	G. S. S. S. S.	Reason	93272704V	077615409	M	G. S. S. S.
3	K. S. S. S.	Reason	723244080V	0770409933	M	K. S. S. S.
4	G. S. S. S.	Reason		0774156489	M	G. S. S. S.
5	G. S. S. S.		670025411V	0773076548	M	G. S. S. S.
6	H. S. S. S.	G. S. S.	613340823V	077619652	M	H. S. S. S.
7	M. K. S. S.	Reason	463512588V	077305888	M	M. K. S. S.
8	K. N. S. S.	Reason	200066303157	0761807598	M	K. N. S. S.
9	G. S. S. S.	Reason	-	-	M	G. S. S. S.
10	Y. K. S. S.	Reason	200114803190	076902072	V	Y. K. S. S.
11	K. S. S. S.	Reason	200104803048	0773081789	M	K. S. S. S.
12	M. S. S. S.	Reason	200071103197	0769559157	M	M. S. S. S.
13	Y. K. S. S.	Reason	20009404165	0774223200	M	Y. K. S. S.
14	G. S. S. S.	Reason		0777340387	M	G. S. S. S.
15	G. S. S. S.	Reason	200114803190	077996655	F	G. S. S. S.

M - 50
F - 24
74



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

Attendance of Participations

Province : Northern

DS Division : Thunukai

Venue : Common Hall, Kotabaddy

District : Mullai Huy

ASC Division : Thunukai

Date : 17/04/2024

Objectives of the Programme / Awareness : Transit walk for CMP Mullikai Bru upper (Thunukai)

No	Name of the Participant (අමත)	Name of the Organization (කොමිටි)	ID NO (පි.එ.අ. අංකය)	Contact no (දුරකථන අංකය)	M (දුරකථන) / F (දුරකථන)	Signature
1	ශ්‍රී. හේමතිසරත්	R.D.S අංකය	511443120	0778638212	දුරකථන	ශ්‍රී. හේමතිසරත්
2	ඊ. ඩබ්ලිව්. සරත්	R.D.S. අංකය	691384195V	0772585978	දුරකථන	ඊ. ඩබ්ලිව්. සරත්
3	ශ්‍රී. ඩබ්ලිව්. සරත්	කොමිටි අංකය	747673942V	0772585978	දුරකථන	ශ්‍රී. ඩබ්ලිව්. සරත්
4	ඊ. ඩබ්ලිව්. සරත්	කොමිටි අංකය	760574180V	0775133706	දුරකථන	ඊ. ඩබ්ලිව්. සරත්
5	ඊ. ඩබ්ලිව්. සරත්	කොමිටි අංකය	792404359V	0772569997	දුරකථන	ඊ. ඩබ්ලිව්. සරත්
6	ශ්‍රී. ඩබ්ලිව්. සරත්	F.O. අංකය	750854745	0770895204	දුරකථන	ශ්‍රී. ඩබ්ලිව්. සරත්
7	ඊ. ඩබ්ලිව්. සරත්	කොමිටි අංකය	793185391V	0770492671	දුරකථන	ඊ. ඩබ්ලිව්. සරත්
8	ඊ. ඩබ්ලිව්. සරත්	R. D. S අංකය	893231390V	0766441900	දුරකථන	ඊ. ඩබ්ලිව්. සරත්
9	ඊ. ඩබ්ලිව්. සරත්	කොමිටි අංකය	823135157V	0770209444	දුරකථන	ඊ. ඩබ්ලිව්. සරත්
10	ඊ. ඩබ්ලිව්. සරත්	R. D. S අංකය	-	0772357866	දුරකථන	ඊ. ඩබ්ලිව්. සරත්
11	ඊ. ඩබ්ලිව්. සරත්	කොමිටි අංකය	840152600V	0765484752	දුරකථන	ඊ. ඩබ්ලිව්. සරත්
12	ඊ. ඩබ්ලිව්. සරත්	- - -	840014310V	0773119398	දුරකථන	ඊ. ඩබ්ලිව්. සරත්
13	ඊ. ඩබ්ලිව්. සරත්	- - -	-	0770370146	දුරකථන	ඊ. ඩබ්ලිව්. සරත්
14	ඊ. ඩබ්ලිව්. සරත්	කොමිටි අංකය	897966604746	0764135690	දුරකථන	ඊ. ඩබ්ලිව්. සරත්
15	ඊ. ඩබ්ලිව්. සරත්	කොමිටි අංකය	1874854800	0761640000	දුරකථන	ඊ. ඩබ්ලිව්. සරත්

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

No	Position	Name of the Officer	Telephone Number	Email Address
1	Divisional Secretary -			
2	Divisional Officer of DAD	M.Vijitharan	773929133	
3	Agriculture Instructor	S.Dirijan	773128018	
4	Grama Niladhari			
5	Samurdhi Development Officer			
6	Economic Development Officer			
7	Department of Irrigation (DOI)			
8	Provincial Irrigation Department (PID)			
9	Land Use Policy Planning Department			
10	Provincial Fisheries Department			
11	National Aquaculture Development Authority (NAQDA)			
12	Central Environment Authority			

13	Police Environment Unit			
14	Department of Animal Production and Health			
15	Agricultural and Agrarian Insurance Board			
16	Department of Wildlife Conservation			
17	Department of Forest Conservation			
18	Geological Survey and Mines Bureau			
19	National Water Supply and Drainage Board			
20	Water Resources Board (WRB)			
21	Archeological Department			
22	Civil Security Department			
23	Local Government Authority			
24	Farmer Organizations			
25	Women Farmer Organizations			
26	Production Farmer Organizations			
27	Community Water Organizations			

28	Community Based Organizations			
29	Other			

5.4 Annexure 4: Guidance format for preparation of subproject proposals (SPP) to obtain funds for implementation of 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 estimate d cost in LKR	Community Contribution (LKR)	Other sources(sp ecify) (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:

(please annex all relevant additional details to provide adequate information to justify the subproject proposal and thereby to expedite the approval process.

5.5 Annexure 05: Glimpses of Transect walk at Malliki Aru Cascade

