

MICRO WATERSHED BASED ACTION PLAN

CHERUVALAM MICRO WATERSHED (4V11a)

Cheruvalam micro watershed is the smallest watershed in the IWMP cluster (IWMP-I) with an area of 175.59 ha (2.19 % of total geographical area). This micro watershed is spread over Kallara, Pangod, and Nandiyod Grama Panchayaths. The major portion of this micro watershed falls in the Cheruvalam ward of Kallara Grama Panchayat. The Vamanapuram River flows through the south eastern boundary of the watershed.

General Description

Table No. 14.1 General Description of Cheruvalam micro watershed

Name of micro watershed	:	Cheruvalam
Micro watershed code	:	4V11a
River basin	:	Vamanapuram
District	:	Thiruvananthapuram
Block Panchayath	:	Vamanapuram
Grama Panchayath	:	Kallara, Pangod, Nandiyod
Villages	:	Kallara, Palode
Latitude	:	8 ^o 43'10" to 8 ^o 44'21" North
Longitude	:	76 ^o 58'28" to 76 ^o 59'21" East
Wards	:	Kallara Panchayath - 8 (part) Pangod Panchayath - 14 (part) Nandiyod Panchayath - 1 (part)
Total Area	:	175.59 ha
% of area in the IWMP cluster	:	2.19 %

Socio economic profile

As per the information provided in the baseline survey conducted, Cheruvalam micro watershed has a total number of 473 households with a total population of 1152. The micro watershed has a total male population of 543 and a total female population of

609. 122 numbers of BPL families reside in the micro watershed area. A total number of 312 persons have registered under MGNREGS. 70 households belong to Schedule Caste and 2 families belong to Schedule Tribe. Majority of the farmers are marginal farmers having only less than 1 ha of own land. Agriculture is the major source of livelihood in the micro watershed area. Apart from agriculture/horticultural practices, animal husbandry is also a source of livelihood some families in the watershed area. The socio economic details of the Cheruvalam micro watershed are given below:

Table No. 14.2 Socio economic details of Cheruvalam micro watershed

1.	Total number of households		473
2.	Population	Male	543
		Female	609
		Total	1152
	Child population	Male	232
		Female	263
		Total	495
3.	No. of BPL families		122
4.	No. of persons enrolled under MGNREGS		312
5.	Households	Scheduled Caste	70
		Scheduled Tribe	2
		General	401
6.	Land holdings	Landless	6
		Very marginal (less than 5 cents)	99
		Marginal (5 to 250 cents)	340
		Small (250 to 500 cents)	7

Biophysical Resources

Physiography

The relief of the watershed ranges from 40 m above MSL to 210 m above MSL. The majority of the area falls in the relief category of 70 to 100 m above MSL which occurs in an area of 85.93 ha (48.94 %). An area of 5.71 ha is located above 150m above MSL.

Slope

The watershed area is divided into five categories of slope classes. The majority of area is under the strongly sloping area having 10 – 15 % slope. The category spreads over an area of 102.03 ha (58.11 %), 40.47 % of the watershed area is having very steeply sloping lands which requires urgent soil and water conservation measures.

Drains

The Vamanapuram River flowing through the south-east boundary of the watershed is the major drain of this watershed. The Parandam thodu is flowing through the eastern boundary of the watershed. Few small drains are originating from different parts of this watershed which drains to the Parandam thodu which join to the Vamanapuram River at the south- east boundary of the watershed. The details of the drains and ponds in the watershed area are given in table No. 14.3

Table No. 14.3. Details of Drains in Cheruvalam micro watershed

Grama Panchayat	Drains	Length (m)	Breadth (m)	Depth (m)
Kallara	Paluvalli Thodu	150	3	2
	Venkattamoodu Ela Thodu	180	2	2
Pangode	Paluvalli Thodu	350	3	2
	Venkattamoodu Ela Thodu	700	2	2
Nanniyode	Parandan Thodu	200	3	2

Land use

Agriculture is the prime activity in the watershed area. The major land use category mapped in the watershed area is rubber plantation. It occurs in an area of 132.49 ha (75.45 %). The second major category is the mixed crops which are the typical homestead cultivation of Kerala wherein the different crop species are grown together that cannot be spatially mapped separately. This is mapped in an area of 26.46 ha. An area of 2.46 ha is under Coconut cultivation which is suitable for multi tire cropping. An area of 0.46 ha (0.26 %) is under the built up land and an area of 0.16 ha is under the rocky area. The details of the land use categories with spatial extent are given in table.

Table. No. 14.5 Table showing land use categories in Cheruvalam micro watershed

Sl. No.	Land use category	Area in ha	Percentage
1	Builtup land	0.46	0.26
2	Paddy converted Mixed Crops	5.34	3.04
3	Paddy converted Rubber	3.23	1.84
4	Coconut	2.46	1.40
5	Mixed Crops	26.46	15.07
6	Plantation Rubber	122.23	69.61
7	Plantation Rubber (Young)	10.26	5.84
8	Rock	0.16	0.09
9	River	1.19	0.68
10	River Bank	3.81	2.17
	Total	175.59	100.00

Geology

The watershed falls the geological unit of Garnetiferous Biotite. The majority of the area has Khondalite group of rocks and in a small patch Charnokite group is also formed. There are four geomorphological units of which more than 90 % (166.27 ha) of the area falls under the category viz. lower plateau (laterite). An area of 2.66 ha is mapped under the category valley fill.

Soils

The major soil series mapped in the watershed area is Palode series which is moderately shallow, moderately deep, moderately well drained, fine textured, brownish and acidic in nature. The soil has a surface texture of gravelly sandy clay to gravelly clay. This is distributed in an area of 117.22 ha (66.75 %). Soils in more than 75 % of the watershed area (115.07 ha) is moderately shallow with a depth of 50- 75 cm 8.61 ha is having moderately deep soils with a depth of 75- 100 cm. The major surface soil textures in the watershed area constitutes that of gravelly loam (92.15 ha) and gravelly clay loam (73.73 ha). Nearly 75 % of the watershed area is prone to severe soil erosion which calls for proper soil and water conservation measures in the area