

MICRO WATERSHED BASED ACTION PLAN

KANCHINADA MICRO WATERSHED (4V11b)

Kanchinada micro watershed is a micro watershed in the IWMP cluster (IWMP-I) with an area of 726.02 ha (9.09 % of total geographical area). This micro watershed is spread over Pangod and Kallara Grama Panchayaths. The micro watershed is located in the northern part of the IWMP cluster. A small portion of Vamanapuram reserve forest is also located in the eastern portion of this watershed.

General Description

Table No. 15.1 General Description of Kanchinada micro watershed

Name of micro watershed	:	Kanchinada
Micro watershed code	:	4V11b
River basin	:	Vamanapuram
District	:	Thiruvananthapuram
Block Panchayath	:	Vamanapuram
Grama Panchayaths	:	Pangod, Kallara
Villages	:	Pangod, Kallara
Latitude	:	8 ⁰ 43'54" to 8 ⁰ 45'50" North
Longitude	:	76 ⁰ 57'23" to 76 ⁰ 59'25" East
Wards	:	Pangodu Panchayath - 17, 18 (full), 3, 15 (part) Kallara Panchayath – 7 (full), 6 (part)
Total Area	:	726.02 ha
% of area in the IWMP cluster	:	9.09 %

Socio economic profile

As per the information provided in the baseline survey conducted, Kanchinada micro watershed has a total number of 2026 households with a total population of 4233. The micro watershed has a total male population of 2011 and a total female population of 2222. 621 numbers of BPL families reside in the micro watershed area. A total number of 1070 persons have registered under MGNREGS. 130 households belong to Schedule

Caste and 15 families belong to Schedule Tribe. Majority of the farmers are small 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 Kanchinada micro watershed are given below:

Table No. 15.2 Socio economic details of Kanchinada micro watershed

1.	Total number of households		2026
2.	Population	Male	2011
		Female	2222
		Total	4233
	Child population	Male	917
		Female	917
		Total	1834
3.	No. of BPL families		621
4.	No. of persons enrolled under MGNREGS		1070
5.	Households	Scheduled Caste	130
		Scheduled Tribe	15
		General	1881
6.	Land holdings	Landless	15
		Very Marginal (less than 5 cents)	237
		Marginal (5 to 250 cents)	1720
		Small (250 to 500 cents)	22

Biophysical Resources

Physiography

The relief of the watershed ranges from 60 m above MSL to 220 m above MSL. The majority of the area falls in the relief category of 100 to 130 m above MSL which occurs in an area of 356.12 ha (49.05 %). An area of 54.59 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 537.34 ha (74.01 %), 55.70 ha of the watershed area is having very steeply sloping lands which requires urgent soil and water conservation measures.

Drains

The Vazhathoppupacha Kanchinada drain flowing through the centre of the watershed is the major drain of this watershed. A number of drains are originating from different parts of this watershed which drains to this drain which joins the Parandam thodu at the south eastern portion of the watershed. The water from this area reaches the Vamanapuram River through Parandam thodu. The details of the drains and ponds in the watershed area are given in table No. 15.3 & 15.4

Table No. 15.3 Table showing the details of Drains

Grama Panchayat	Drains	Length (m)	Breadth (m)	Depth (m)
Pangod	Elavoor Karikkakom Thodu	550	2	1
	Elayavankadu Thodu	1100	2	0.5
	Kadamankuzhi Thodu	400	1	0.5
	Kochalummoodu Kanyarukuzhi Thodu	3250	3	1
	Kodungancheri Ela Thodu	250	1	0.5
	Kodungancheri Ela Valiya Thodu	1850	2	0.5
	Mankottukonath Ela Thodu	450	1	0.5
	Moonnattimoola Thodu	575	1	1
	Paluvalli Thodu	2900	3	1
	Thottumpurath Ela Thodu	750	1	1
Kallara	Elavoor Karikkakom Thodu	1400	2	2
	Moonnattimoola Kaithodu	650	1	1
	Thottumpurath Ela Thodu	1100	1	1
	Vattakarikkakom Thodu	350	1	1

Table No. 15.4 Table showing the details of Ponds

Sl. No	Grama Panchayat	Pond	Survey No.	Length (m)	Breadth (m)	Depth (m)
1	Kallara	Vattakarikkakom Cheru Kulam	2898	5	4	3
2	Pangod	Uranankuzhi Kulam	332	6	5	3
3		Varthukonam Kulam	353	5	4	3
4		Kodungan Cheri Kulam	365	6	4	2
5		Pond	301	10	7	4

Land use

Agriculture is major activity in the watershed area. The major land use category mapped in the watershed area is rubber plantation. It occurs in an area of 398.04 ha (54.82 %). 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 201.26 ha. An area of 1.57 ha of paddy lands can be brought to paddy cultivation by providing necessary labour and irrigation facilities. An area of 2.75 ha is mapped as cultivable wastelands which can be brought under horticulture. An area of 72.97 ha (5.91 %) is under the built up land and an area of 3.60 ha is under the rocky area. The details of the land use categories with spatial extent are given in table.

Table No. 15.5 Table showing land use categories in Kanchinada micro watershed

Sl. No.	Land use category	Area in ha	Percentage
1	Builtup land	42.97	5.92
2	Paddy	1.57	0.22
3	Paddy converted Banana	1.14	0.16
4	Paddy converted Coconut	3.60	0.50
5	Paddy converted Tapioca	2.09	0.29
6	Paddy converted Mixed Crops	32.29	4.45
7	Paddy converted Rubber	8.52	1.17
8	Mixed Crops	201.26	27.72
9	Plantation Rubber	363.99	50.13

10	Plantation Rubber (Young)	33.69	4.64
11	Plantation Eucalyptus	28.23	3.89
12	Cultivable Waste Land	2.75	0.38
13	River Bank	0.32	0.04
14	Rock	3.60	0.50
	Total	726.02	100.00

Geology

The major geological units in the watershed is Garnetiferous Biotite occurring in an area of 643.37 ha (88.62 %). The remaining area has a geological formation, viz. Garnet- Biotite gneiss with Migmatite. There are four geomorphological units of which more than 90 % (658.43 ha) of the area falls under the category viz. lower plateau (laterite). An area of 54.99 ha is mapped under the category, valley fill.

Soils

The major soil series mapped in the watershed area is Nedumangad series having a solum thickness of 150 cm with very dark brown to pale brown colour. The soil is very strongly acid and has a surface texture of gravelly sandy clay loam to gravelly sandy clay. This is distributed in an area of 582.30 ha (80.20 %). An area of 92.46 ha is mapped under Palode series which is fine textured and acidic in nature. Soils in more than half of the watershed area (360.15 ha) is moderately shallow with a depth of 50- 75 cm and 43.33 % of the area (314.61 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 clay loam (451.59 ha) and gravelly loam (223.16 ha). Nearly 50 % of the watershed area is prone to severe soil erosion which calls for proper soil and water conservation measures in the area.