MICRO WATERSHED BASED ACTION PLAN

AYANIKUZHI MICRO WATERSHED (4V25a)

Ayanikuzhi micro watershed is located along the southern banks of Vamanapuram River with an area of 440.08 (5.51%) This micro watershed is located in northern portion of the Pullampara Grama Panchayath covering parts of three wards. The Vamanapuram River flows through the northern boundary of the watershed.

General Description

Table No. 16.1 General Description of Ayanikuzhi micro watershed

Name of micro watershed	:	Ayanikuzhi
Micro watershed code	:	4V25a
River basin	:	Vamanapuram
District	:	Thiruvananthapuram
Block Panchayath	:	Vamanapuram
GramaPanchayath	:	Pullampara
Villages	:	Pullampara
Latitude	:	$8^0$40’47” to $8^0$42’01” North
Longitude	:	$76^0$56’55” to $76^0$58’46”East
Wards	:	Pullampara Panchayath- 5, 6, 8 (part)
Total Area	:	440.08 ha
% of area in the IWMP cluster	:	5.51 %

Socio economic profile

As per the information provided in the baseline survey conducted, Ayanikuzhi micro watershed has a total number of 4480 households with a total population of 2122. The micro watershed has a total male population of 996 and a total female population of 1126. 1619numbers of BPL families reside in the micro watershed area. A total number of 2816 persons have registered under MGNREGS. 420 households belong to Schedule Caste and 48 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 Ayanikuzhi micro watershed are given below:

Table No. 16.2 Socio economic details of Ayanikuzhi micro watershed

1.	Total number of households		724
2.	Population	Male	996
		Female	1126
		Total	2122
	Child population	Male	390
		Female	384
		Total	774
3.	No. of BPL families		301
4.	No. of persons enrolled under MGNREGS		596
5.	Households	Scheduled Caste	65
		Scheduled Tribe	2
		General	657
6.	Land holdings	Landless	11
		Very Marginal (less than 5 cents)	105
		Marginal (5 to 250 cents)	602
		Small (250 to 500 cents)	10
		Large (more than 500 cents)	0

Biophysical Resources

Physiography

The relief of the watershed ranges from 20 m above MSL to 160 m above MSL. The majority of the area falls in the relief category of 40 to 80 m above MSL which occurs in an area of 244.15 ha (55.47 %). An area of 60.92 ha is located above 100m above MSL.

Slope

The watershed area is divided into six categories of slope classes. The majority of area is under the moderately steep to steep slope class having 15-35 % slope. The category spreads over an area of 226.03 ha (51.36 %), 87.21 ha 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 northern boundary of the watershed is the major drain of this watershed. A number of drains are originating from the different parts of this watershed which drains to the Vamanapuram River near Ayanikuzhi. The details of the drains and ponds in the watershed area is given in table 16.3 & 16.4

Table No. 16.3 - Table showing the details of Drains

Grama Panchayat	Drains	Length (m)	Breadth (m)	Depth (m)
Pullampara	Kaduvankuzhi Thodu	200	2	0.5
	Nedum Kaithodu	1000	5	1.5
	Puttukonam Thodu	950	4	1.5
	Urulu Kidanna Kuzhi	200	2	0.5

Table No. 16.4 - Table showing the details of Ponds

Sl. No	Grama Panchayat	Pond	Survey No.	Length (m)	Breadth (m)	Depth (m)
1	Pullampara	KonathukuzhiKulam	126	2	3	4
2		UranpuramKulam	133	4	5	3
3		VarikkaparaKulam	249	3	4	6
4		Varikkapara Kulam1	146	4	5	3
5		PaladannukuzhiKulam	220	2	3	5
6		KoovanvengaKulam	258	3	2	5
7		PuttukonamKulam	264	8	5	6
8		PaluvalliKulam	285	3	2	2
9		Paluvalli Kulam1	269	5	3	7
10		Aruvippuram Paluvalli Kulam	271	3	2	4

Land use

Agriculture is one of 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 338.71 ha (76.96 %). 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 56.05 ha. An area of 1.19 ha is mapped as cultivable wastelands which can be brought under horticulture. An area of 3.98 ha (0.9 %) is under the built up land and an area of 1.53 ha is under the rocky area. The details of the land use categories with spatial extent are given in table.

Table No. 16.5 - Table showing land use categories

Sl. No.	Land use category	Area in ha	Percentage
1	Builtup land	3.98	0.90
2	Paddy converted Banana + Tapioca	3.45	0.79
3	Paddy converted Mixed Crops	3.29	0.75
4	Paddy converted Rubber	8.55	1.94
5	Coconut	2.61	0.59
6	Mixed Crops	56.05	12.74
7	Cultivable Waste Land	1.19	0.27
8	Plantation Rubber	316.11	71.83
9	Plantation Rubber (Young)	22.60	5.13
10	Rock	1.53	0.35
11	River Bank	10.20	2.32
12	River (Rocky area)	0.46	0.10
13	River	10.06	2.29
	Total	**440.08**	**100.00**

Geology

The major geological units in the watershed is Garnetiferous Biotite occurring in an area of 289.06 ha (65.68 %). The remaining area has a geological formation, viz. Garnet- Biotite gneiss with Migmatite. There are four geomorphological units of which nearly 90 % (394.22 ha) of the area falls under the category viz. lower plateau (laterite). An area of 15.50 ha is mapped under the category viz. valley fill.

Soils

The major soil series mapped in the watershed area is Nedumangad series having a solumn 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 286.25 ha (66.04 %). The river bank area is mapped under Mudakkal series which is alluvial in origin. An area of 24.33 ha mapped under this category. Soils in more than half of the watershed area (68%) are deep soils with a depth of 100- 150 cm and 16 % of the area (70.5 ha) is having moderately shallow with a depth of 50-75 cm. The major surface soil textures in the watershed area constitutes that of gravelly clay loam (176.84 ha) and gravelly loam (151.29 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.