

## VAMANAPURAM WATERSHED

The Vamanapuram watershed lies between 8<sup>o</sup>35' to 8<sup>o</sup>50' North latitudes and 76<sup>o</sup>40' to 77<sup>o</sup>15'. East longitudes and is spread over the districts of Thiruvananthapuram and Kollam of Kerala State. It is bounded by Kottarakara taluk of Kollam district in the North, Nedumangad taluk of Thiruvananthapuram district in the south, Tamil Nadu in the East and Arabian sea in the West. The watershed has a total area of 766.89 sq.km (76689 ha) covering 31 villages spread over 33 panchayat, 8 blocks and two districts.

### Physiography

The Vamanapuram River emerges from the Chemmunji Motai at 1717 m above MSL and flows into the Anjengo lake at Chirayankeezhu. The general elevation ranges from 76m to 1717 m in the upper region, 45 m in the middle region to less than 4 m the lower region.

The Vamanapuram River emerges from the South eastern portion of the watershed. After traversing a distance of 7 km, it receives the Kalaiparai Ar. From Kallar, the river takes a slightly meandering course till its confluence with the upper Chit Ar. The river then flows west wards upto Manjappara. It continues the westersward course till Choodal, where the Chit Aar joins the main river. From there it meanders westwards till Vamanapuram where the SH-1 road crosses it. The river again flows westwards and falls into the Anjengo lake at Chirayankeezhu.

The broad landforms at the upper region include low hills with isolated hillocks and lateritic mounds. The land forms of the middle region include midland laterites with valleys and low hills with with isolated hillocks. The landforms at the lower region are coastal laterites.

The shape of the watershed is almost elliptical with a length width ratio of 2:1

### Drainage

The major river draining through the watershed is the Vamanapuram River which has a length of 88 km. It starts from Chemmunji Motai and flows westward to fall into the Anjengo lake. The tributaries of this river are Kalaiparai Ar, Chit Ar, Pannavadai Ar, Manjappara river, Sarkara Ar, Kall Ar, Manjadimoodu Thodu, Tholikuzhi thodu, Mulakkara thodu, Vanjina thodu, Kurinchilakadu thodu, Chittar thodu and Parandam thodu. The drainage pattern appears to be dendritic.

## **Water Resources**

### *Surface Water Resources*

The major river of this watershed is the Vamanapuram River. The combined total yield and the annual utilisable yield of Vamanapuram, Ayirur and Mamom are 1324 Mm<sup>3</sup> and 889 Mm<sup>3</sup> respectively. The river has thirteen tributaries, including major and minor ones. Kozhithottam Kayal and Mungottu Kayal occupy the western part of the watershed.

### *Ground water resources*

The area falls in the category of 'white' which means that only less than 65 percent of the ground water is utilised. There is no restriction for further development. The area under Chirayankeezhu block will be in the category of 'dark' in the near future. The Eastern part of the upper region of the watershed is suitable for domestic wells whereas the Western part is suitable for large diameter dug wells. The middle region is suitable for large diameter dug wells. The lower region is suitable for heavy duty as well as medium capacity tube wells.

## **Watershed Delineation**

The Vamanapuram Watershed is divided into 30 sub-watersheds and 52 micro watersheds.

## **Special Problems**

1. The villages Pangode, Pullampara, Kallara and Peringamala of Vamanapuram block and Vellaloor of Chirayankeezhu block have shown indications of land slips/landslides.
2. The erosion status of the area is moderate to severe.
3. A small portion of the forest land in the middle and upper region is of degradable nature.
4. The area experience stream bank erosion along the river course. The severity of stream bank erosion is observed in the middle and lower regions.
5. The stage of development of groundwater is more than 45% in Chirayankeezhu block.