3.0 STUDY AREA DESCRIPTION

Much has been written about the Nilgiri region; Hockings has commented that it is perhaps the most intensively studied part of rural Asia (1978:2). The Kallar sub-watershed of the Kotagiri Taluk, forms a part of this often studied Nilgiri region.

3.1 Location and Topography

The Kallar sub-watershed, which is a part of the Kotagiri Taluk extends to about 173.3 sq kms. The watershed is located between 11°35' and 11°46' N latitude and between 76°86' and 77°06' E longitude, at the junction of the Eastern and Western Ghats, the two mountain ranges that run almost parallel to the coastlines of Peninsular India. The elevation of the area ranges from 300 mts to 2118 mts above mean sea level. The slopes are in great demand for tea plantations.

The plateau is a net work of countless streams, converging ultimately to become falls of great beauty. The numerous streams running in all directions drain into the Bhavani Sagar reservoir, which flows along the southern border. The Bhavani Sagar finally confluence into the Cauvery River, which is a major water source for Tamil Nadu.

A patch work of swamps and marshes, rolling grasslands, with every fold and ravine clothed in evergreen woods or sholas, the whole abounding in a wide variety of wild life both fur and feather. Such is the rare jewel of nature, guarded for too long by the Malarial Forests of the foothills, at the beginning of what is officially known as the ‘English Period’. The study area has been blessed by nature with enchanting sholas and Rolling Downs, a cool and pleasant climate and an amiable and friendly local people. Such charms are irresistible to tourists who fall in love with these hills at first sight.
3.2 Resources of the Kallar sub-watershed

Understanding scientific measurements and resources within a watershed will enable to make informed decisions about actions to improve and protect the local environment. Any study with a watershed approach needs scientifically based information to understand the natural resources and the environmental conditions prevailing in the watershed. Given below are a few of them:

Map. I Study Area Map of the Kallar sub-watershed

3.2.1 Climate

The maximum temperature ranges from 10°C to 30°C and the minimum temperature ranges from 2°C to 14°C. The rainfall ranges from 1210.5 mm in 75 rainy days.
3.2.2 Soil Type and Land Use

The main soil type is lateritic red loam, the pH ranges from 3.9 to 7.5. Due to the receipt of adequate rainfall both during South West and North East monsoons and congenial agro-climatic conditions, foreign exchange earning crops like Tea and Coffee are grown on a large scale. The other crops cultivated in this tract are fruits like Pear, Mandarin Orange and Hill vegetables like Potato, Cabbage, Carrot, Beans and Minor vegetables like Beetroot, Turnips and Knool khol. Spices like pepper are now being introduced in this area. On the higher slopes the soil is shallow but in the lower land there are deep rich loams.

3.2.3 Geology

The study area is located in a plateau region. Structurally, the area belongs to continental block of peninsular India and the mountain ranges comprise of archean metamorphic rocks like Hornblende Biotile Gneiss, Micaceous and Ferruginous, Quartzites; Dolerites Bauxite, made of Iron. These are the prominent rocks found in the study area. The area is highly disturbed and is subjected to faulting.

3.2.4 Vegetation Type

The typical forest of the Kallar watershed is Tropical Moist Deciduous. Despite the spatial climatic differentiation over the watershed, the vegetation climax is that of an evergreen montane forest type, which, however, is now confined only to depressions. They occupy very restricted often-isolated areas along the valley bottoms. Therefore they are rather edaphic (pertaining to soil) formations, characterized by rich soils, good drainage and relatively high moisture content throughout the year.

The residual montane forests show a high degree of structural and physiognomic uniformity in spite of their different exposures to the elements, particularly wind and
rainfall. They all come under the type of evergreen montane forests and the local people of the area unanimously refer them to as ‘sholas’. It is essentially composed of medium sized (15-20 mts) and small trees (7-1 mts).

3.2.5 Fauna

The study area provides shelter to a varied fauna, in particular a rich bird life. A casual visitor can easily spot a few Nilgiri laughing thrushes, grey jungle fowl, golden backed woodpeckers, as well as babblers, flycatchers, tits of various kinds, wood pigeons, eagle owl, shikara, crow pheasant and many others.

Some other bigger inhabitants of the area are the India Giant Squirrel, the barking deer and the bonnet macaque. Nocturnal animals include wild boars, porcupines, hares, wild cats, mouse deer, and the rare Nilgiri marten.

One can also catch a glimpse of some of the smaller yet important animals such as the small jungle squirrel, bats, frogs, toads, snakes and insects in thousands. The latter range from stunning butterflies, impressive scarabs and beetles to bugs, centipedes, and down to nearly invisible thrips. The other important residential mammals of the area are the masjestic gaur, leopards, panthers, elephants, spotted deer and the black naped hare.

3.2.6 Flora

Many botanists have been attracted by the peculiar floristic properties of the study area (Kallar watershed). Two distinct main groups of plants compose the flora of the area, according to their thermic requirements. Up to about 1,800 mts above M.S.L. the dominant plants are ‘megatherms’. Above 1,800 mts, on the plateau, there is a distinct group showing European or north temperature affinities (valerians, violets, anemones, pimpernels, barberry, etc.). It is deplorable, to note that many of the attractive orchids of the area are quickly disappearing owing to the clearance of forests, and indiscriminate
collection of wood. The outstanding floristic peculiarity of the watershed is due to the exceptional amount of endemic plants side by side with an unceasing increase of introduced, exotic trees, shrubs, herbs, etc.

The Australian Blackwood (*Acacia melanoxylon*) together with Silver Wattle (*Acacia dealbata*) were first introduced into the Nilgiris in 1832 by Captain Dun and the bluegum (*Eucalyptus globules*) in 1843 by Captain Cotton of the Madras Engineers. The seeds of these Exotics came from Tasmania. Tea and Coffee are the other chief exotics, which were commercially planted here to earn foreign exchange.

### 3.2.7 Population, Culture and People

Majority of the population in the watershed comprises of Badagas. The other tribals found are the Todas, Irulas, Kotas and Kurumbas.

Their languages, though not mutually intelligible, are all Dravidian, of the same linguistic stock spoken throughout southern India. Their religions are separate and they worship their own Gods. Another community that became established in this area was that of the Anglo-Indians, people of combined British and Indian decent, who identified themselves with the English. After independence the population of the region increased at a greater degree with the introduction of new Government projects and people from various other states came and settled down for want of employment. The watershed has been a favoured region simply because of its good climate and rich landscape. The residents of the place are well aware of this advantage; especially those who immigrate stay. Hence the population of the study area at present is much higher than what it was years back.