

Sholas of Nilgiris: Lifeline of Cauvery Delta Farmers

S. Manivasakan^{1*}, C. Cinthia Fernandez¹, S. Vennila², S. P. Thamaraiselvi¹ and B. Vinothkumar¹

¹ICAR-TNAU-Krishi Vigyan Kendra, GCP Doddabetta Post, The Nilgiris

²Agricultural College and Research Institute, TNAU, Vazhavachanur

*Corresponding Author: smanivasakan@yahoo.co.in

The Shola forests present in the Western Ghats derive their name from the Tamil word *solai*, which means a 'tropical rain forest' and classified as 'Southern Montane Wet Temperate Forest (11 A/c1)' according to Champion and Seth. These Shola forests are found in the upper hills of the Nilgiris, Anamalais, Palni hills, Kalakadu, Mundanthurai and Kanyakumari in the states of Tamil Nadu, Karnataka and Kerala. These forests are found sheltered in the valleys with sufficient moisture and proper drainage at an altitude of more than 1,500 metres elevation. The upper reaches of the Shaola forests are covered with grasslands known as Shola grasslands. While 70% of the Nilgiris were native grasslands, 30% of land was shola forests. The forests are also known as 'cloud' forests, holding the ability to draw moisture from the mist and retain cloud cover. The shola biome has a high water retention capacity and exists as the primary source of the water for the high elevation organisms is the origin of many streams and rivers including Cauvery in the Western Ghats.

The vegetation that grows in Shola forests is evergreen. The trees that grow in these forests are stunted in nature and have many branches with rounded and dense canopies in the shape of Caluliflower. In General, the leaves are small in size and leathery. The Red-coloured young leaves turning into different colours on maturity is a prominent characteristic of the Shola forests with mosaic appearance. Epiphytes like lichens, ferns and bryophytes are usually grown on the trees.

The occurrence of Himalayan plants like *Rhododendron* is a mystery and characteristic feature of these Shola forests. According to paleobotanist Vishnu Mitter, these are remnants of the vegetation driven to South India during the Quaternary Ice Age, about 2.6 million years ago, with subsequent changes in the tropics of South India. Shola forests play a major role in conserving water supply of the Nilgiris' streams. In his book *The Nilgiris* (1908), W Francis says, "The Sholas of the plateau are not of any great



Longwood Shola



Kotagiri



Nilgiri Marten



Nilgiri tahr

importance from a commercial point of view, as the trees are slow-growing varieties which produce timber of little or no value and probably take at least a century to mature. But they add greatly to the beauty of the country and are of immense use in protecting source of water supply." Sholas thus act as overhead water tanks.

The rolling grasslands found on top of the Western Ghats, enhance the beauty of the region. Usually, Shola forests and grasslands are found in a ratio of 1:5. Pastoral communities, who settled in the grasslands centuries ago, burn the grasses periodically. This has checked the advance of the Shola forests. As tree species of the montane, evergreen forests are flammable, regeneration of any Shola tree species is completely prevented except for *Rhododendron nilagiricum*, the only Shola tree that can tolerate fire.

The rain received from the Southwest and Northeast monsoons is harvested by the Shola forest-grassland ecosystem, leading to the formation of the Bhavani River that finally drains into the Cauvery. Thus, the Shola forest-grassland ecosystem of the

Nilgiris, also supports the prosperity of Cauvery delta farmers.

Problems for Shola Forests

Due to the introduction of alien plant species and annual fire occurrences, the area under Shola forests has begun to gradually shrink.

- Alien species like Sticky Snakeroot, Gorse and Scotch Broom introduced during the British rule, have encroached upon the Shola forests as well as grasslands.
- During 1840, the tree species such as *Acacia mearnsii* and Eucalyptus were introduced from Australia mainly to meet the Tannin and Pulp requirements respectively.
- Between 1886 and 1891, Pine and Cypress were introduced, again from Australia. As the alien species grew, the Shola forests and grasslands gradually became degraded and shrank.
- In addition, unscientific agricultural practices like growing tea on the slopes, cattle grazing and fuel wood collection have become serious causes for degradation.
- Unregulated tourism has created concrete jungles, traffic congestion and caused the generation of garbage.

Land use studies undertaken on the Nilgiri Biosphere Reserve between 1849 and 1992 show the extent of the damage. During 1849, the extent of Shola forests was 8,600 ha, grasslands 29,875 ha and agriculture was 10,875 ha. No wattle or eucalyptus was planted in the area at that time. During 1992, it was found that the extent of Sholas was 4,225 ha, grasslands 4,700 ha, agriculture 12,400 ha, tea plantations 11,475 ha, wattle plantations 9,775 ha and eucalyptus plantations was 5,150 ha. The comparison of the results of the 1849 and 1992 studies shows that cultivation of tea, wattle and eucalyptus has reduced

the Shola forest-grassland ecosystem to a greater extent.

Conservation Measures taken

The government banned the planting of wattle and eucalyptus completely in 1987 as it causes serious damage to Shola-Grassland ecosystem. Ecological restoration and biodiversity conservation were given much importance. Under the Hill Area Development Programme since the mid-1980s, seedlings have been planted in degraded patches and protected with chain-link fences to restore the forests.

Special Shola Forest protection committees were formed involving teachers, nature lovers, ecologists, environmentalists, students and villagers in the Nilgiris. They were motivated to remove plastic garbage from the nearby forests, protect Shola trees, remove alien species and learn about the importance of the Sholas. The forest department started supplying LPG cylinders to the nearby villagers of the Shola forests as they depended upon the forests for their fuel wood needs. This helped the forests a great deal as the entry of people in them was stopped.

Presently, the Tamil Nadu Forest Department focuses on eradicating all exotics including wattle, providing fencing and planting shola seedlings in degraded shola forests. The Shola-grassland ecosystem, which acts as the Nilgiris overhead water tank and the water source for the farmers of Cauvery Delta, can only be saved with the involvement and cooperation of all stakeholders' viz., the common public, students and nature enthusiasts with the government. If the forests and grasslands are restored, the region's water problems will be solved to a great extent.

Finally, to conclude we all should take a pledge to conserve the Shola Forests of Nilgiris which act as a source of water for the perennial rivers like Bhavani and Cauvery for the better future of the farmers of Cauvery delta region.

"SAVE SHOLAS TO SAVE RIVERS"
