

Environment

Saving the sholas: To overcome drought, Nilgiris' forest communities return to traditional wisdom

The Nilgiris shola forests are key to south India's water needs, but can we save them?

- [S. Gopikrishna Warriar](#)
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Image: Thangaraj Kumaravel via Flickr



“These forests used to provide us all our medicines and we did not need to go to a hospital,” Poofsed, a Toda elder, said, pointing to the shola forests from the veranda of her tiled house in Artawll Mund. This Toda hamlet where Poofsed has lived since her wedding 45 years ago, is in the north-

western part of the upper Nilgiris plateau. North of the Mund (the generic name for Toda hamlets), the plateau rises to the crest of the Toda holy mountain Pashthare Thit and drops steeply into the Masinagudi plateau, till it drops again into the Moyar Gorge.

“If somebody had a headache, we knew what plant to look out for. We knew what to use after childbirth. Today many of those plants are not available. Also, our medical needs are more complicated, requiring us to go to a hospital,” continued Poofsed. Among the indigenous communities that live in the Nilgiris, the Todas are the most reclusive, and Poofsed has seen tradition hesitantly touch fingers with modernity in her lifetime.



Toda elder Poofsed in the veranda of her house in Artawll Mund.

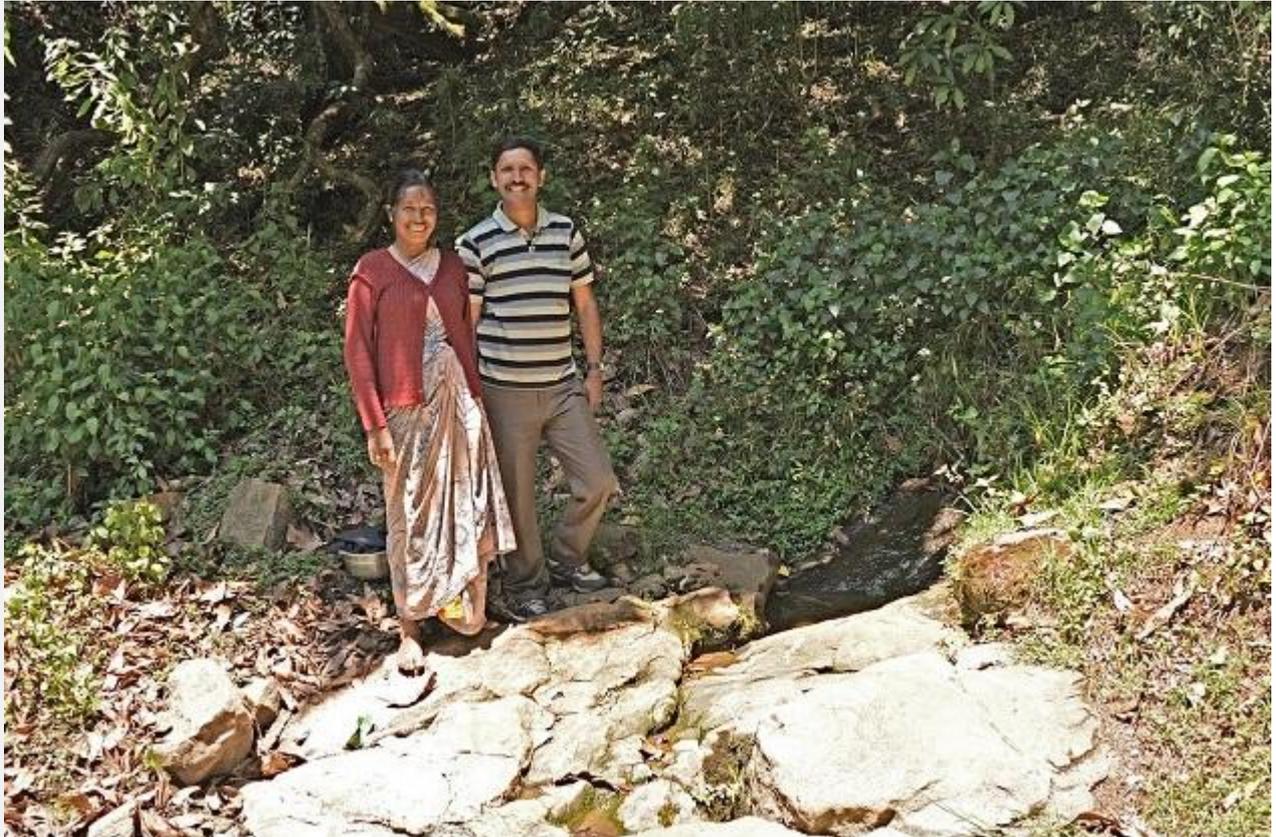
Lives nestled in green

Two generations younger, Thorthai Goodn is bridging the linkage with the outside world as a tour guide. He believes that the key to sustainability for the Todas is by keeping their traditions alive, even while looking for occupations that will bring in money to sustain their lives.

He points to a plant known as *pudhoorr* in Toda language (*Sophora glauca*), whose twigs they use to make a bow and arrow, which is used to welcome a yet-to-be born child into their clan. When a Toda girl is married, she moves into her husband's clan. When she gets pregnant, her child is welcomed into her husband's clan during the bow and arrow ceremony.

“When the landscape changes, these plants will disappear, and along with it our tradition,” he observed.

The Toda life is intimately related to their shola forests and the grasslands on which they let their buffaloes roam and graze. Since the 1950s, many grasslands have interspersed patches of eucalyptus and wattle stands, planted by the Tamil Nadu Government to support the pulpwood needs of the rayon and paper industries in the plains. The cover provided by these trees, in what were earlier open pasturelands, has made their buffaloes vulnerable to stalking panthers and tigers.



Revathy and Thorthai Goodn near a shola stream. This stream sustained the water needs of 30 people in Artawll Mund.



Narthirs Karthushk, the priest at Artawll Mund.

The buffaloes are so important in Toda tradition that when men opt for priestly duties (which come in rotation for three months) they live mainly on the curd and butter from the animals that they milk themselves. “This is the time for me to learn our traditions and the importance of our natural resources,” observed Narthirs Karthushk, the current priest at the temple at Artawll Mund. He is 18 years old and has opted for the priestly duties after his school final exams. He aspires to build on his athletic skills and take a degree in physical education training from Chennai.

Like all the other communities in the Nilgiris, the Todas see the water supply from the shola forests as the most significant lifeline that has seen them through the drought of 2016. For Revathy – who, like Poofsed, married into Artawll Mund – the shola stream had the least water in the past year. Despite that, there was enough water to meet the needs of the 30 people who live in eight families in that part of the hamlet.

Lessons from the 2016 drought

It is the shortage of water in 2016 that has brought a renewed interest in conserving the original ecosystem of the Nilgiris. During 2016, like all the other districts in Tamil Nadu, the Nilgiris also suffered a shortfall from both the southwest and the northeast monsoon. In a letter to the Prime Minister asking for drought relief in mid-January, [the Tamil Nadu Chief Minister had stated](#) that the southwest monsoon was deficient by 20% and

the northeast monsoon by 62%. There was a respite from this drought in the early months of 2017, with the district getting 59.6mm of rainfall (the normal is 23.1mm) in January and 115.8mm of rainfall (as against a normal of 30.5mm) during March.

However, despite this unexpected bonus in recent weeks, the larger picture in the hills is one of severe water shortage. The Marlimund Lake, which also supplies water to Ooty town was almost totally dry even after the rains. If there is water trickling in any stream, it is from those flowing out of reasonably well-conserved combinations of native shola forests and grasslands.

<https://youtu.be/i9CC5Yp8C3M?t=55>

3D imagery of Artawll Mund - Watch it on [Google Earth](#).

The shola-grassland ecosystem is unique to the higher reaches of the southern Western Ghats. While the hill slopes are covered with native grass species, in the groin of the hills are the shola forests with evergreen trees. Unlike the trees in other tropical evergreen forests, the shola trees are shorter and have twisted trunks. But the tree canopies cut out sunlight with their cover. Leaf litter falling from the branches of these trees over millennia are carried by the rain deep into the crevice of the valley where they disintegrate into peat bogs.

Rising over 2,000 metres above sea level, the upper plateau of the Nilgiris stands as a sentinel blocking the rain-pregnant clouds as they move onto the land from the Arabian Sea. The heaviest downpour happens along the western crest of the plateau, i.e., the Mukurthi ridge and then decreases over the eastern parts.

The shola-grassland ecosystem serves as the water tank for the peninsula. While the grasslands let the rainwater flow away, it flows through the shola into the streams. The decaying litter of the forest floor and the streambed hold the water, and release it throughout the year. Thus, a significant portion of the perennial water flowing in the Kaveri river is contributed by more than a thousand such small streams that originate in the Nilgiri plateau, and join each other to form the Bhavani, Moyar and Kabini rivers, which are tributaries of Kaveri. Only one river – the Chaliyar – drains the steep western slopes and joins the sea without contributing to the Kaveri flow.

The 2016 drought may turn out to be the turning point for the understanding on conservation in the Nilgiris. An area, which should have shown a water surplus that it could supply to the other parts of the peninsula, continues to be water starved. The water scarcity only reinforced the native wisdom of the

indigenous communities living on the plateau on the importance of conserving the shola-grassland ecosystem.

Changes in the air

Situated five kilometres southeast of the Kotagiri town above a slope that drops southwards into the Mettupalayam plains, Banagudi Shola is a 70-acre sacred grove where Badagas and Kurumbas worship together at two temple-like structures once in a year. The shola forest also has dolmens in it, indicating that humans entered the forest thousands of years ago (dolmens are usually considered as megalithic burial sites that can date around 3,000 BC).



The temple in Bangudi Shola where the Kurumbas and Badagas sacrifice a goat once a year.



Mani, Ramdas and Prabhu next to a dolmen

A Kurumba settlement of 40 families lives adjacent to the shola forest. “We have collected water from inside the shola all through the drought period,” said Radha from the Kurumba hamlet. “The swamp water never dried this summer. It did not dry because it was in the shola forest.”

The stream that emerges from Banagudi Shola not only helped the Kurumba hamlet deal with the drought, but has also been the water lifeline for the Badaga village of Kesalada. “We had water from this stream all through the year,” said R. Prabhu from Kesalada village.

“Our lives are strongly related to this shola. We join the Kurumbas to worship the gods inside the sacred grove once a year for each temple,” added K.N. Mani, a Badaga senior from Kesalada. “In fact, the right to open the temple and worship is with the Kurumbas. We join them in the process.”

Mani recounts how the weather pattern has changed since his childhood. “The rain comes suddenly and it disappears. It does not come when it is supposed to and comes when it is not supposed to. It is forests such as Banagudi Shola that ensures that water is there throughout. If we destroy it our children will suffer.”

K. Ramdas, an environmental activist associated with governmental and NGO programmes, added that even though the annual average seems to remain the same from his younger days, the pattern has changed

drastically. It used to rain continuously in October and November. Now it rains heavily for a night and could stay dry for the next 15 days. This uncertainty disturbs the agricultural activities of the communities.

3D imagery of Banagudi Shola. Watch it on [Google Earth](https://youtu.be/dCYiZnOXpMA?t=43).

<https://youtu.be/dCYiZnOXpMA?t=43>

“If there is good and proper rainfall we (people from Tamil Nadu) don’t need to fight with Karnataka for water, but because of the drought in the Nilgiris we are facing the problem,” Ramdas said. “It is not possible to create new sholas and grasslands and hence it is important for us to conserve what we have.”

Nascent efforts at reversal

Not very far Kotagiri, a group of residents from the town continue to work with the forest department to conserve the 116-hectare Longwood Shola as they have realised the importance of the water supplied by the stream originating from it. According to K.J. Raju, the President of the Longwood Shola Watchdog Committee, the stream serves the water needs of 1,500 families located in parts of Kotagiri town and 25 nearby villages.

Efforts to conserve the shola started in 1998, when the forest department and local citizens decided to establish a watchdog committee, so that the citizens could also get involved with the conservation of the shola. Though the shola was a reserve forest, local people went in to collect firewood. This pressure reduced over the years since most families moved to cooking gas as fuel.

According to Raju, the current emphasis of the committee is to try and remove exotic and invasive plant species. “We believe that once the exotics and invasive species such as *Lantana camara* are removed the natural sholas will return. Also, the native grassland species will return and therefore herbivores like the gaur will not move out of the forest and cause man-animal conflict.”



Kotagiri range forest officer, B Srinivasan, agrees. “The increasing incidences of man-animal conflict in the recent years have been due to the decrease in the natural habitat for the animals. Once these habitats return, there will be less conflicts.”

On the border of Kotagiri, there is a one-acre shola patch appropriately called Happy Valley, maintained by Keystone Foundation – an NGO working to increase environmental awareness in the district. The patch is small but Keystone uses it for educating school children and those living close to it on the importance of conserving it.

“We started this project in 2006 when we were working on conserving wetlands,” said Gokul Halan a hydrogeologist who works on water conservation for the Keystone Foundation. “Wetlands are seen as wastelands in most parts of the world. In the Nilgiris the wetlands are very small but important ecosystems.”

Happy Valley, which was originally known as Chinna Shola, had come in for much abuse – trees were being cut and garbage was being dumped resulting in the near-destruction of the water source. Keystone discussed an action plan with the small group of families living close by, built toilets to prevent open defecation, cleared the garbage and encouraged the community to

prevent dumping, removed unwanted plants and re-introduced shola species. As a result, the stream did not dry during 2016 drought.

“Even before the March showers we got a discharge of four litres per minute in the spring, which went up to 30 litres after the showers,” said Halan. “This is what shola forests do, conserve water and release it throughout the year.”

Their work has received a buy in from local political leaders. S Vappu, former Town Panchayat President for Kotagiri, said that the stream from the shola has helped in meeting the water needs of four wards consisting of around 5,000 people.

Whether it is the Happy Valley or Longwood Shola, the conservation of these patches have helped in strengthening the environmental awareness of school students, who come there on field visits often. Keystone has built up the environmental education of school students as one of their key activities.

According to Prudhvi Gali, who coordinates the nature education programme of the Keystone Foundation, the idea is to introduce school children to the unique Nilgiri environment through trekking, birdwatching, art and cultural activities and through interactions with community elders. These programmes it carries out with students of the tribal residential schools run by the government, as well as private schools.

In Blue Mountain School in Ooty, Gali and his colleagues worked with students from Class 5 to Class 8. In Lawrence School, Lovedale, it was with the students of Class 4 to Class 6. “We feel that even if, in a class of 20 students, 10 get interested, we have made an impact,” said Gali.

3D Imagery of Longwood Shola Reserve Forest. Watch it on [Google Earth](#).

<https://youtu.be/EoskV5ZBM5g?t=50>

The Lawrence School, Lovedale, has taken this initiative a step further. The teachers and students, supported by an alumni group, are trying to plant native grassland species in a one-acre plot that is adjacent to a small shola patch. Through this shola patch flows a stream that feeds the water reservoir that supplies the school. For the current batch of school students, the drought of 2016 triggered the need to understand the ecosystem they live in and contribute to its conservation.

“Our motivation for doing this work is to ensure that the future generations in our school should not go through the water problem that we are facing today,” said Rakshat Rana, a school senior.

“We had no clue when we went to the plot,” said Nantra Nanjappa, his classmate. “But then we were informed by our teachers and other experts on the importance of the work we can do to restore native species. However small our role is, we want to contribute to conserving the Nilgiris.”

According to Sangita Chima, the headmistress of the Lawrence School, the objective is to clear the patch from invasive exotic species even as the students plant native species. “Though it is a small start, we hope to showcase this to world as an action for conservation,” she explained.

The problem’s roots and the way back

Chima’s words reflect the larger thinking in the Nilgiris after the shock of the 2016 drought. The drying up of water sources has generated a renewed awareness on conserving and regenerating the native shola-grassland species and removing exotic species. However, both these are easier said than done.

From the time the British collector of Coimbatore, John Sullivan, trekked up to the upper plateau in 1821, there have been changes in the land use pattern in the hills. With overcast skies and incessant rains, the upper plateau weather reminded the British of their homeland and they started cultivating crops that were non-native to the hills. European vegetable farms, followed by tea and coffee plantations, changed the vegetation pattern since the middle of the 19th century.

However, the strong institutional assault came after Independence, in the 1950s and 1960s. To support the paper, rayon and leather industry in the plains, the Tamil Nadu Government promoted the plantation of eucalyptus and wattle, species native to Australia, on grasslands. In 1966, after the signing of the India-Sri Lanka accord between Lal Bahadur Shastri and JR Bhandaranayake, many shola forests were converted into tea plantations to repatriate Tamil tea estate workers from Sri Lanka. As a result, the shola-grassland ecosystem started getting limited to vestigial pockets.



A shola patch with water flowing out of it. In the background eucalyptus plantations can be seen.

“To remove exotics and return to the native vegetation is difficult,” said Jayshree Vencatesan, ecological scientist and Managing Trustee of Care Earth Trust. Her team studied the possibility of this process from the Moyar Gorge to the upper plateau. “These interventions have to be location and species specific. If the exotics are removed unscientifically, their space is taken by other invasives. On the other hand, the shola-grassland species have narrow ecological niches. Planting wrong species can be counter-productive,” she said.

Even despite the drought and stress on the resources, hordes of tourists have been heading towards Ooty and other destinations for the summer season. According to the [District Statistical Handbook](#), the population of the district is 735,394 (2011 Census figure). With a floating population of people coming to the district from other parts of the country and abroad that is larger than that of the residents, the district is reaching a near-breaking point.

If the drought has done any good, it is in providing the trigger for people to think and act to conserve the shola-grassland ecosystem, and thereby some of the most important water sources in the south of the country.

(S. Gopikrishna Warriar is an environment journalist and blogger).

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