

Plant in Oman and UAE: Part 2 - Samar and Ghaff

The two typical leguminous trees in UAE and Oman are *Acacia tortillis* and *Prosopis cineraria*, locally known as Samar and Ghaff. Samar is very close to the so-called table tree (*Acacia radianna*) that is wide spread in the Sahel, Africa, and Samar is considered to have evolved from the table tree after the Arabian Peninsula was cut off from the African continent. Ghaff is seen from the arid regions of the Arabian Peninsula to Iran, Pakistan and India. Samar grows in rocky mountain areas with relatively high precipitation and in pebbly alluvial fans. Ghaff mainly grows in sand dune areas closer to the coast. (Refer to Illustration 1)

Both Samar and Ghaff are precious tree species that grow in the desert. Ghaff is particularly significant in that it is the only tree that can offer shade in sand dune areas, and the Bedouins have always set up camps by the tree. Samar and Ghaff, as well as date palms and camels, have been important elements sustaining the livelihood of the area. How do the two species adapt themselves to survive in the severe desert climate?

Samar only grows on very hard soil in the mountains and in alluvial fans. In fact, it only occurs where flash floods after rain might wash over its roots. Roots cannot penetrate deep in such hard soil and this is apparent when samar trees are often turned over from their roots after a storm. The shallow root systems of the Samar can only support the tree by grabbing hard soil, therefore this species cannot really grow in dune areas.

New Samar leaves come after winter rain. Samar depends on the winter rain and stubbornly endures the long, hot dry season. By contrast, Ghaff spreads its roots deep in dune areas (as deep as 50 meters has been recorded), and its leaves come in the hottest season - in June and July. It may be that winter rain penetrates underground and finally reaches the dune areas by June and July. It is considered that Samar survives the long, hot dry season by dint of its drought-tolerant character, and that Ghaff survives by developing root systems deep into the ground. This view coincides with research results revealing that the drought-tolerant nature of Samar is much more pronounced than that of Ghaff.

Desert-dwelling trees have different ways of adapting to the environment. Although there are probably no two species with exactly the same characteristics, Samar and Ghaff are two representative types of plant adaptation in the arid regions.

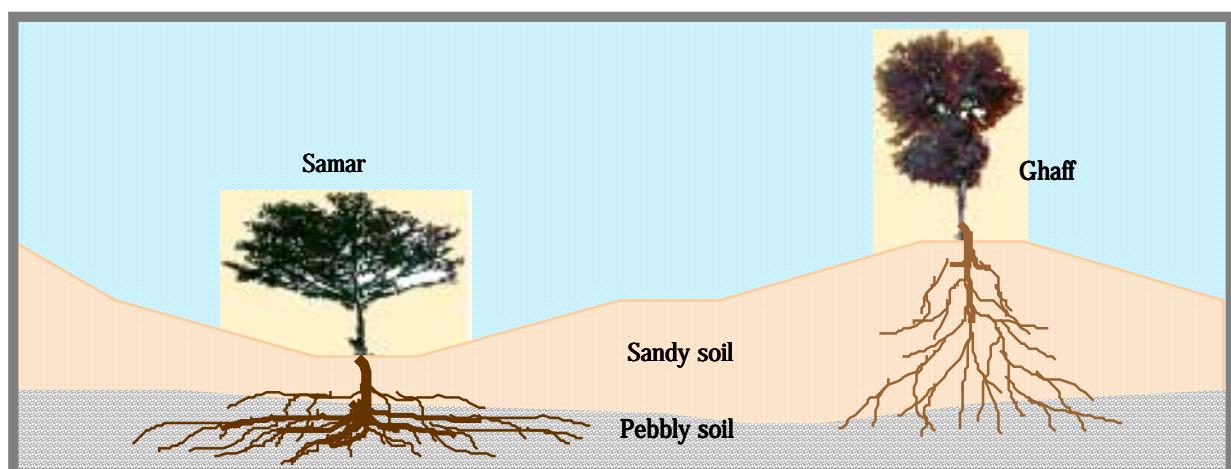
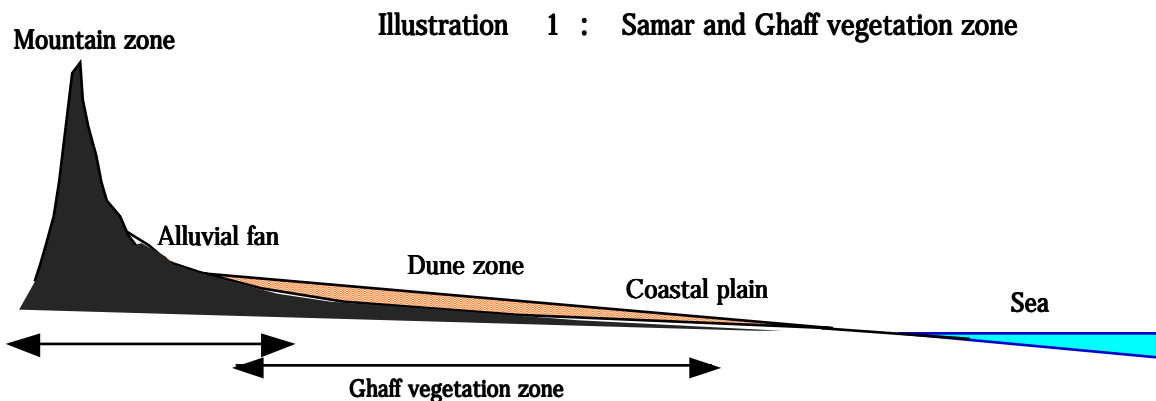


Illustration 2 : When Samar and Ghaff cohabit the same area, each is considered to have its own spreads roots for survival. This division occurs in transitional areas in between alluvial fans and sand dunes