

Challenges for Indian Coffee Growers

By Dan Kuhn

To the traveler India appears as a dynamic country. People are well dressed and the traffic can be defined as “organized chaos in opposing directions”. The streets are full of motor scooters, motorbikes large trucks, small trucks, small taxi bikes and all different types of cars and of course cows and water buffalos among the many pedestrians and bicycles. Motorbikes transport the whole family often with a minimum of 3 people per scoter or bike. All this traffic is moving fast trying to circumvent what is out there among the many potholes some very deep. Use of the horn is practiced almost constantly, probably to keep everyone from falling asleep while driving.



Famous Indian traffic



The Mohini pillar at Channakesava Temple. Belur. Built 1117 A.D.

A reasonable thought is that India eventually will surpass China’s (1.2 billion people) growth rate on account of its functional democracy and its ability to speak English. The democratic approach might be slower in developing, but is expected to have longer overall staying power.

India’s history is displayed in the form of many of its amazing temples built in the 10th, 11th, and 12th century. History, languages and culture date back 5000 years. Among the many teachings and “Sutras” are of course the “Kama Sutra”, known around the globe as a “how to book”; but not a “how to” for coffee cultivation. It is hard to imagine how the intricate stone figurines that are part of the temple construction are carved out of single pieces of stone. These wonders must have taken lifetimes to create.

Recent history of colonial times has left imprints especially with large coffee estates that were mostly started during British rule, fashioned after military discipline and precise accounting practices. Today most of these 4 or 5 generation coffee farmers have production figures at their fingertips: “Quite impressive”. Amazing as well are the traditional “Planters Clubs” reserved for coffee planters. These clubs have more than 100 years of tradition and own outright city blocks with old well maintained buildings for meetings, dinners, over night stay and as a member of one club members are entitled to use the facilities of all the other clubs. This is an exclusive coffee membership group.



Nandi Bull, the celestial vehicle for Lord Shiva. Carved from one piece of stone.

Some of these estates are farmed for 5 generations by the same family and the coffee tradition is very impressive. Coffee dates back to the 16th century, when coffee was introduced to India. Today's coffee growing tradition dates back to the 1820's when the large coffee and tea estates got largely started by the British. The Indian Coffee Board as a government arm that followed later to regulate the coffee industry. The United Planters Association of Southern India was formed as an umbrella organization for the different regional associations. This organization helped with government interactions giving a voice to the planters. The past 10 years of low international coffee prices and raising production costs have hurt coffee producers with increasingly accumulating debt. Restructuring of loans, tax relief etc. are sought from the government to keep the industry viable.



Winding road through coffee estates in Chickmagalur.



Balanor Plantation. Winner of numerous Flavor of India Awards by SCAA

India's growth rate of 9.6% per year in 2007 was slightly behind China. In terms of land mass, India is one third the size of the US with a population of 1.1 billion. A great potential coffee consuming population currently drinking .06 kg of coffee per capita, which is virtually nothing compared to Finland's 11.5 kg! The coffee drinking culture is still developing; currently serving Arabica coffee mixed with Robusta and Chicory. There is still a long way to go, for a specialty coffee drinker! Looking at the population of Asia, it will be the future for coffee consumption.

Coffee growers' challenges:

The results of this rapid economic growth are good in many ways, however not so good for some of the agricultural sectors of society. For example, some coffee growers could not pick last year's crop on account of a labor shortage. The situation in Karnataka is described by some coffee producers as critical, approaching levels of real concern for the future of coffee production.

Today, coffee farmers have a difficult time hanging on to agricultural workers who are migrating to cities for better paying, industry related jobs. Current coffee wages are around \$ 1.50 to \$ 2.00 per day, a far cry from \$ 10/hr. in Hawaii. Yet, coupled with low coffee prices of the past, and current raising input costs, this makes for a coffee challenge.



Kadur Planters Club



Historic Bungalow at Devadhanam Estate

This is a problem for agriculture the world over, as societies become more affluent; agriculture labor costs rise and people migrate. One answer to the problem of labor shortage can be mechanization. This however is challenging in the often steep terrain in the traditional coffee growing areas.

Brazil, Hawaii and Australia, for example, have seen a shift in coffee production to the “Cerado” or Savanna type areas which are high elevation plateaus, drier areas that require irrigation, but allow for mechanization, including mechanized harvesting. This type of mechanization allows for substantial labor savings in cultivation and harvesting of the coffee crop. Hawaii and Australia for example, on account of very high labor costs, have developed complete mechanized coffee production systems.

India can be described as “bureaucratically challenged”, where different rules govern land use, agriculture policies and many other aspects of life. In the case of coffee, the land reform act broke up large land holdings and allocated agriculture lands in up to 10 hectare plots to smaller farmers. Large coffee and tea estates were allowed to stay in large land holdings due to the economy of scale. These estates are designated to the current areas and it is difficult to shift production into lower, more level areas. This means that the current land use for coffee has to continue in the current



Steep terrain with coffee grown under shade trees. Chickmagalur.



Shade trees with pepper cultivation on trunks

locations which are often steep terrain and a challenge for mechanization.

Some years ago Indian coffee production was 60% in favor of Arabica plantings. Today it is reversed in favor of Robusta plantings. According to Coffee Board statistics in 1951 Arabica plantings were 73%, and 27% for Robusta. In 2007, Arabica plantings were 47% and Robusta plantings 53%, with a total acreage in coffee of 381,500 hectares. Total coffee production increased from 1950 with 18,800 metric tons to 2007 with 288,000 metric tons. This represents around 4% of total world production, making India the 5th largest coffee producer. Interesting to note is

that planters with less than 10 hectares represent 72% of acreage with 60% of production.

Shade grown coffee:

When looking at the traditional way of coffee production in the Karnataka and the surrounding coffee region, it is remarkable how beautiful the shade grown coffee plantings present themselves. Traditionally, coffee has been grown under shade with well regulated shade canopies involving a multitude of shade trees from exotic hardwood to leguminous shade trees and faster growing lumber trees such as silver oak. The shade trees are thinned on an annual and by-annual basis with obvious challenges to the climbers who scale very tall trees. Horizontal branches are removed up to 40 feet after which the canopy develops undisturbed. The shade is carefully regulated, letting through filtered light to the coffee plants. This is obviously an expensive cultural practice. In general, coffee is planted very tightly, under the shade, which makes access and mechanization difficult. Both spacing and cultural practices, such as pruning, need to be revamped to accommodate any kind of mechanization. There is not much growth on the coffee trunks on account of little light, leaving new growth restricted to the top of the plants. The relationship between light and shade makes for less production in a shaded environment, however demanding fewer inputs and making bridging dry periods easier.

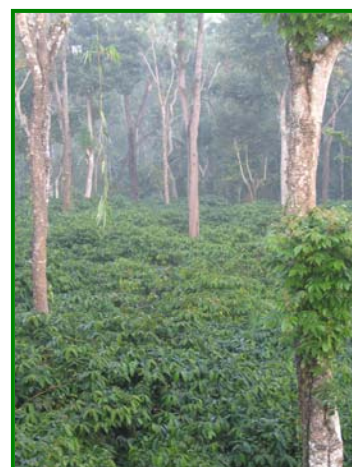
Shade as an integral part of Indian coffee production:



First class fermentation tanks at Devadhanam Estate

The high altitudes still favor Arabica production where there is less Leaf Rust and less White Stem Borer and Berry Borer damage. Arabica has been grown under shade and processed as a washed coffee. Washed Arabica is getting higher prices and Indian Arabica has won numerous cupping competitions. On the other hand, Indian shade grown and washed Robusta is getting almost equal pricing to Arabica with maybe 30% less production costs. In addition Robusta is resistant to the White Stem Borer which has raised havoc with Arabica production. Robusta is also resistant to leaf rust and Nematodes and has less Berry Borer damage as well. All in all Robusta production is expanding at the expense of Arabica production. Production costs for Robusta are

78.7% of Arabica costs per Mr. Sanji Philip Chairman of UPASI (United Planters Association of Southern India). Interestingly, Robusta coffee, like Arabica, is shade grown and processed as a washed coffee



Tight coffee canopy under shade

It could be argued that the Indian coffee producers have started as Arabica producers under shade and have replaced

the crop with Robusta coffee, but kept the production criteria for Arabica. It could be argued that Robusta could grow without shade or with less shade. The traditional washing practices have produced a superior Robusta coffee with a high price. As mentioned earlier, shade will help with the bridging of the dry periods which is important as Robusta has a shallow root system. Many farmers however practice overhead irrigation with “big guns” in Robusta to bridge the dry period on account Robusta having a shallow root system and being not really drought tolerant.

Coffee income is augmented by pepper growing on the shade tree trunks. Areca palms for Betel nut with Coco nuts production is also used for shade. Pepper, Betel nut, Cardamom, Vanilla and timber production create additional income. The shade trees themselves are “capital” stored against potential bad coffee years. These supplemental crops can contribute 20% of total revenue, representing substantial additional revenue.

Mechanization in steep areas might not be cost effective due to the expense of terracing and contour planting. The eventual result could be a shift of coffee production to the lower lands of the estates and reserving the steep areas for timber and multi- cropping.

The possibility of mechanization exists especially in the lower or medium sloped areas. However, cultural practices would have to be changed and row access between plants established, together with a realignment of shade trees. Such changes will not come over night, though labor pressures might accelerate such development. Without such a move mechanization will not be possible. Creating access even with narrow isle spacing, allowing small equipment access, will help reduce production costs. Harvesting can be done with hand shakers, adapted from the olive industry, shaking ripe beans onto a drop cloth. Processing will require a “green bean separator” that would result in a larger percentage of immature green beans.

A good applied mechanization research project could facilitate such practices and help find the best way to move forward.

The Central Coffee Research Institute, under the direction of the Indian Coffee Board in Chickmagalur, has an impressive research staff and is working on many of the coffee problems, from disease control, to insect control, to solving soil and plant fertility problems, and more. Likewise the Tata coffee plantations, the largest coffee producer in India and Asia, with over 8000 hectares has an in-house research facility doing impressive coffee work.



Majestic, domesticated, with bell and chains, wandering next to the road



Coffee Board; Central Coffee Research Institute, Chikmagalur

It is hoped that solutions can be found to the challenges of Indian coffee growers. The impressive 150 year tradition has to continue and flourish for the next generation of planters to come.

Dan Kuhn is Swiss born, lives in Hawaii. He built and managed a fully mechanized coffee plantation in Hawaii and is internationally engaged in coffee consulting.