
BAUERS FAMILY TREE FARM NEWS

Miramar Costa Rica



FARM UPDATE

January 2021

What a year the world has been through and continues to be in. Fortunately for the trees nothing has changed in their environment. Their small piece of the tropics continues to have good rainfall, plenty of sun and good soils to continue the trees' growth. The trees continue to exhibit good growth patterns that teak is known for. We are seeing long straight boles that will translate into better quality lumber as well as continued mass being added to the trunks expanding the diameter of each tree. We have a good deal of trees measuring at 12 plus inches diameter with some of the larger trees in the 15-inch diameter range. Trees measuring 50 feet tall are common with some taller ones in the mix.



FARM UPDATE CONTINUED

The trees have mature characteristics that include branched out canopies, consistent annual flowering and seed production. The trees have developed strong root systems critical to supporting the trees as they grow. Rainfall in Costa Rica was above average for 2020 with strong tropical moisture flows coming from the Caribbean produced by hurricane activity. In fact, Nicaragua and Honduras, both to the north of Costa Rica, were hit by two hurricanes in November 2020 causing extensive damage in Honduras. The part of Costa Rica our farm is in gets 80 to 100 inches of rainfall per year with September and October alone accounting for about 30 percent or more of the annual rainfall. Just as important, the farm has a drastic shift to a dry season starting in December and continuing through at least March. The dry season gives the trees the opportunity to harden the growth they have added over the wet season, which in the long run will produce better quality lumber with better heartwood characteristics. In addition, the dry season months bring increased winds to the farm. The wind aids in the hardening process and develops the trees root system as wind is like exercise for trees. Overall, we are pleased with the growth of the trees we have seen over the last 14 growing seasons. We have seen quality growth year over year every year. In addition, we have had no large-scale issues with any type of disease, pest issues or soil problems nor have we had a year with extreme drought conditions or other extreme weather patterns.



FARM UPDATE CONTINUED

Last year at about this time we were working on a plan to do a fairly large-scale thinning of the trees. Unfortunately, those plans came to a screeching halt as the world started shutting down in the spring. As we are all too familiar, uncertainty and fear brought global trade to a standstill of which we are only now beginning to see glimpses that things may return to more normal times. With the uncertainty that remains in global import/ export markets and travel not being prudent we have decided to postpone a thinning until at least the next dry season starting in December of this year.

Even with the uncertainty and inability to travel we have continued the exploration of the markets for teak. We have been particularly focused on the market for young teak like the type we will need to take out to thin the trees to an amount we want to grow to full cycle. We have been able to watch and learn quite a bit along the way. First, we have not seen a local market for young teak develop in Costa Rica as we would have liked. This is unfortunate as it would be better to sell lower value timber into a market that requires less transportation to get that product to market as it would allow a higher price to go to the grower rather than getting sucked up by transportation costs. Local markets, like furniture builders, have continued to have good access to woods they have historically used like monkey pod and parotta negating the need for an alternative such as young teak. Construction in Costa Rica has access to cheaper and plentiful supply of lower cost wood than teak.



FARM UPDATE CONTINUED

In addition, little wood is used in Costa Rica construction as houses and buildings are predominately constructed of cement and steel. International markets for young teak have been slow to develop as well, but despite the global slowdown markets are still there and should improve with time. India continues to be by and far the largest importer of young teak from Costa Rica and importers from India remain active in Costa Rica. Regrettably, the prices we have seen them paying are not at the level we had hope for. We believe the lower price is driven by lower competition for the wood and high transportation costs for shipping containers of lumber across the world. The market for older mature teak continues to look good with more established uses such as outdoor furniture and boat building.

As far as projections go, we see the farm producing similar volumes of wood as we had originally planned on. We do think that the younger teak coming out of thinnings will not be as valuable as we had hoped. None the less we will still need to do thinning to allow our best trees to reach maturity.

FARM UPDATE CONTINUED

We are anticipating that 60% of the trees originally planted will have value to them. This number is lower than we had originally planned on and is driven by the younger teak having less value and the cost of extraction not making it economically viable to take out some of the younger, smaller trees.

We will need to thin approximately another 20% of the trees over the next few years to get the spacing to a point we feel will develop the best woods going forward. We are and will be actively looking to find the best market to sell these trees that need thinned.



Environmental Benefits

The environmental and social benefits of the farm are strong and have continued. Costa Rica has been a leader in the world in the environmental projects and initiatives. The following article published in 2020 on earth.org details how Costa Rica is one of the few tropical countries that has reversed deforestation and have steadily added forest to the country.

How Costa Rica Reversed Deforestation and Became an Environmental Model

Costa Rica is the first tropical country to have stopped, and subsequently reversed, deforestation. What can the rest of the world learn from the country and can it follow suit?

Pedro Garcia is one of many farmers who have taken the initiative to help restore Costa Rica's forests. Garcia has worked on his seven-hectare plot in northeast Costa Rica's Sarapiquí region for 36 years. As a result of his efforts, the region has transformed from bare cattle pasture to a densely forested refuge for wildlife, home to hundreds of species ranging from sloths to strawberry poison-dart frogs.

Garcia also grows agricultural produce, such as pepper vines and organic pineapples. While most of the world is becoming more aware of the climate crisis and the importance of trees in battling its associated effects, Costa Rica is already a leading example in mass conservation, having all but ended deforestation.

"It is remarkable," Stewart Maginnis, global director of the nature-based solutions group at the International Union for Conservation of Nature (IUCN), reported to CNN. "In the 1970s and 1980s Costa Rica had one of the highest deforestation rates in Latin America, but it managed to turn that around in a relatively short period of time."

How Bad Was Deforestation in Costa Rica?

In the 1940s, 75% of Costa Rica was covered in rainforests. Following the arrival of loggers, much of the land was cleared to grow crops and livestock. It is unclear just how much land was lost, but it is thought that between a half and a third of forest cover was destroyed by 1987.

Following this devastation, the government intervened to restore and preserve the forests. In 1996, the Costa Rican government made it illegal to chop down forest without approval from authorities and the following year it introduced the Payments for Environmental Services (PES) Program.

Today, close to 60% of the land is once again forest and the landscape is home to around half a million plant and animal species.

The country's significant achievement is a clear disparity to the rest of the tropics where deforestation rates continue to increase. According to data from the University of Maryland, in 2019 tropical regions lost close to 12 million hectares— equivalent to 30 football fields per minute- with nearly a third of the loss taking place in older, carbon-rich primary forests.

Monetary Incentives: The Driving Force for Environmental Compliance

Costa Rica's success was driven by economics. The combination of a ban on deforestation with the introduction of PES- which pays farmers to protect watersheds, conserve biodiversity or mitigate carbon dioxide emissions- is the reason for success.

“We have learned that the pocket is the quickest way to get to the heart,” says Carlos Manuel Rodríguez, Costa Rica's minister for environment and energy, acknowledging that people are more likely to care for the environment if provided with an income- a sad yet harsh truth behind environmentally friendly behaviours and monetary incentives.

The PES scheme pays an average of \$64 per hectare per year for basic forest protection, according to FONAFIFO, the nation's industry fund.

Elicinio Flores, a farmer who has replanted seven hectares of trees with the help of the PES scheme, said “I feel proud when I walk through the forest, not only for me but for my whole family ... when I am no longer here, I know that my children will continue to look after it.”

The scheme allows farmers to generate additional income by selectively harvesting timber from the reforested areas. Flores sought guidance from Fundecor, a sustainable forestry NGO, to ensure he does not disrupt or harm the ecosystem in any way.

The government scheme, predominantly financed by a tax on fossil fuels, has funded a total of \$500 million to landowners over the last 20 years, according to FONAFIFO. It has saved more than 1 million hectares of forest, which is equivalent to a fifth of the country's total area, and planted over 7 million trees.

The Influence of Culture and Ecotourism

According to Maginnis, Costa Ricans' deep respect for nature has played a vital role in the country's reforestation success. This respect is reinforced by the country's booming ecotourism sector. Patricia Madrigal-Cordero, former vice-minister for the environment, says, “People come to see the mountains, the nature, the forests, and when they are stunned by a monkey or a sloth in the tree, communities realise what they have here, and they realize they should care for it.”

Welcoming 3 million tourists a year, more than 60% choose to visit Costa Rica for its nature, according to its tourism board. Last year, tourism produced \$4 billion in revenue for the country, and the industry accounts for more than 8% of GDP, employing 200 000 people.

“People in Costa Rica receive a lot of money because of tourism and that changes the incentives of land use,” says Juan Robalino, an expert in environmental economics from the University of Costa Rica.

Robalino claims that without tourists, less effort is exerted to maintain and preserve the environment; with less revenue, there is less funding for conservation, ultimately leading to less ecotourism.

Costa Rica is not the only country that is determined to protect the environment. Guatemala, Mexico, Rwanda, Cameroon and India have also committed to restoring at least one million hectares of forest through the Bonn Challenge, a global effort that aims to restore 350 million hectares of degraded ecosystems and deforested land by 2030. However what these countries lack, and what Costa Rica has, is a long history of environmental policy coherence and consistency, noted Maginnis. Political will combined with environmental passion and tourism has allowed the country to become a pioneer in reforestation.

The country's environment minister explains that despite the fact that Costa Rica's strategy in reforestation and encouraging environmentally friendly behaviour can be applied anywhere, 'principle and values' are required, too. He noted that 'good governance, strong democracy, a respect for human rights and a solid education system' is vital for success. Madrigal-Cordero added that the secret to Costa Rica's environmental triumph is a generation of peace. She says, "nature is in our DNA."

Thank You

We look forward to the world putting this pandemic behind it. Thank you for continued support.

Jake, Joe and Jaime

