

EXPERIENCES ON EUCALYPTUS TREE FARMING AND MARKETING IN KENYA

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It was in April 2007. As Dean of Faculty of Agriculture, I was responsible for leadership of the University of Nairobi in tree planting day. I woke up that day like on any other day in 2007 to lead in the planting of trees at Ngong Forest. The students and lecturers boarded vehicles and we went to plant assorted indigenous tree species in Ngong Forest. After planting the trees, it was my turn to make a speech to the students and lecturers at the forest site. I encouraged both lecturers and students to go out of their way and plant trees in all ceremonial occasions that were available for them to celebrate, these occasions could be birth days, graduation days, remembrance days for loved ones and any other day to remember. This was meant to encourage them to plant as many trees as possible and enable the country to achieve 10% tree cover. I told them that I had committed myself for that season to go to my farm and plant trees. True to my word, I went to my farm in Laikipia County and bought Eucalyptus Trees for planting in 2 acres out of 6 acres farm. In the following year I planted another 2 acres of eucalyptus trees and in 2009 also planted another 1 1/2 acres of the eucalypt. This is made a total of 5 1/2 acres of eucalyptus planted within 3 three years period. By 2009, I had planted about 7000 Eucalyptus trees in my farm.

In 2011 I started to plant eucalyptus trees in a 2nd farm of five acres in Mwenje area of Laikipia County and within two years I had planted about 6000 eucalyptus trees. The only problem I had with the trees is the spacing which was not the recommended rate. They were more dense than required and this made them grow at a slower rate and also bend a lot in the fields, reducing their quality for electricity poles which are required to be every straight for a minimum length of 10 meters with a diameter of 10 cm. In 2013 I bought 4 acres in Mwenje area of Laikipia County and planted 4 thousand eucalyptus trees within a period of two years. By 2015, I had planted about 14 acres with about 15000 Eucalyptus trees in the tree pieces of land in Laikipia county. This was a big investment that involved planting, weeding and pruning trees for about 4 years after germination. Otherwise, Eucalyptus trees have less problems with pests and diseases and in overall the management practices are easy to manage. Among the trees, they have the fastest growth rate in the farm and mature for marketing within 6 years after planting. They are used for fencing posts, building posts, electricity posts, fiber cable posts, firewood and props. Although condemned because of water uptake in the field, it is the best general purpose tree in the country. I would encourage people with idle land suitable for plant trees planting to do so. At least they will take care of the environment and also it is a good long term investment.

Since 2016, I have harvested and sold Eucalyptus trees in my farm in piecemeal as fuel wood timber, transmission poles and construction poles (props). The main use of the trees in the farm has been transmission poles and the other parts are sold for other purposes indicated. My main product for marketing has been transmission which has a better price than the other products of eucalyptus trees. Eucalyptus trees sold for other uses such as poles, prop poles, timber, wood fuel have a lower price value than transmission poles. Although transmission poles are marketable, the business has a lot of brokers that reduce the price and this becomes unproductive business in the country in the final end. It is unfortunate that Eucalyptus tree farmers have not organized themselves into a cooperative Society/Association/Self-Help groups. This has reduced the negotiation power of the farmers and normally give the chance to the brokers to dictate the price at the farm as they market the various products of Eucalyptus trees. The Kenya Forest Service has not helped farmers organize themselves into an Association/Cooperative Society. There is no effective farm forest extensions service to guide farmers in production and marketing of Eucalyptus trees.

Various products of eucalyptus trees include:-

1. Demand for transmission poles by Kenya Power is very high but the farmgate is low.



2. The demand for poles/props/posts for the construction industry, flower industry, fencing, horticulture industry is very high but the farmgate price is low due to lack of negotiation power by the farmers.

3. The demand for timber for construction industry, furniture and joinery is moderate since the timber is very difficult to use in constructing a lot of products for the industry.
4. The demand for fuel wood in tea factories, urban and domestic use and in institutions (prisons, schools, hospitals e.t.c.) are very high. Eucalyptus trees is a great source of firewood since other trees take long to grow and do not have copping mechanisms to provide fuel wood and charcoal as fast as Eucalyptus trees. However, the farm gate price of eucalyptus fuel wood and charcoal is low and can lead to massive harvesting of the farm forest. Farmers rarely sell eucalyptus trees for other products such as fibre-board, board pulp, plywood, bark for flavoring food, essential oils or tool handles. The production of these products should be encouraged to increase diversity of products from eucalyptus trees. A proper spacing of Eucalyptus trees enables them to grow fast and mature early for marketing for various products. I harvested early maturing trees as electricity transmitting posts and this has allowed the remaining trees to have enough space to enable them grow big and fast for the purpose of selling transmission posts. I have sold various products of eucalyptus as follows:-

Table 1: Marketing of various Eucalyptus products

Year	Eucalyptus Products	Quantity	Unit Price (Kshs.)	Amount (Kshs)
2016	Props	500	100	50,000.00
2017	Electricity transmission posts	23	2000	46,000.00
	Props	600	100	60,000.00
	Fencing posts	50	70	3,500.00
2018	Electricity transmission posts	60	2000	120,000.00
	Timber	7	2500	17,500.00
	Fencing posts	276	50	13,800.00
	Firewood	2 lorries	12000	24,000.00
2019	Electricity transmission posts	57	800	45,600.00
	Fiber transmission posts	419	800	335,200.00
	Fencing posts	500	110	55,000.00
	Fencing posts	400	200	80,000.00
			TOTAL	850,600.00

Investors of eucalyptus farms forest had initially got a lot of money during the period of 2002 – 2015. The price of posts ranged from between Kshs. 3,500/- to Kshs. 10,000/-. This gave people hope for a very high enterprise that would make a person rich after selling the electricity transmission poles. However since 2016, the production of concrete transmission posts were also bought by the Kenya Power and that caused low prices for the Eucalyptus transmission posts.

Kenya Power has continued to buy more of the concrete transmission posts. The price of the wooden posts has continued to decrease and this discouraged farmers to have Eucalyptus tree forests and some have even gone ahead to uproot them because of the earlier high expectations of their profitability. Since 2007, the government has also continued to discourage farmers to grow eucalyptus trees because of their negative effects to the environment. Farmers

have not followed guidelines provided by the government on the various landscapes to grow the eucalyptus without environmental damage.

The increasing and competing demand of concrete transmission poles has reduced the market and the pricing of eucalyptus transmission poles. However, integrated harvesting to maximize the utilization of the entire tree (transmission posts, fuel wood, props, fencing posts) can increase the profitability of the eucalyptus trees. I still believe that the government should encourage growing eucalyptus farm trees at the right environment which is not damaged by the eucalyptus plantations. Investment in eucalyptus enterprise at the farm is still a profitable venture and better than cypress, croton or *Gravillea robusta* and any other tree planted in the farm. Investment in eucalyptus trees has a competitive edge over other tree species due to its fast growth rate, a wide range of marketable products and its high coppicing ability. Although currently farmers prefer to plant cypress trees over eucalyptus trees, the return on the investment is still skewed towards eucalyptus as compared to any other species of trees in the farmers field. Since 2007, I have treated eucalyptus trees in my farm as wonder trees and not as villain trees as considered by a large population of environmentalists and the government officials. The big debate over the negative effect of eucalyptus on the environment has continued since 2009 and this has caused the reduction of eucalyptus farm plantations. It would be important for the government to encourage the citizens with big idle land which may not be very suitable for crop production to produce eucalyptus trees for commercial value. Note that trees act as a saving account that accumulates interest as the tree grows in size and value over time. It is a long term investment that can take care of expenditure in old age. However, I am entirely aware that eucalyptus trees reduce diversity, impede nearby plants and also a lot of water. I had a worker see eucalyptus trees roots 6 meters below ground when digging a pit latrine in my farm. This means they will search for ground water over long distances and tap a lot of ground water. However, to a farmer, the monetary benefits outweigh the negatives. Diversification by farmers with part of woodlots is the one path of success. For non-resident farmers or “telephone farmers”, planting eucalyptus trees relies less on his/her input both of time and resources for a successful woodlot. With proper advice from government and various organizations, farmers can take steps to mitigate the environmental impacts of planting eucalyptus trees, while still growing successfully. In any locality, farmers with more trees tend to have bigger land, are wealthier and with old, and the trees that could be inherited by the new generations at the family level.

There have been a lot of controversies on eucalyptus planting in various parts of Kenya. The controversies range from the effect of eucalyptus trees removing water from underground reserves and streams, inhibit the growth of other vegetation and its leaf has little adverse effects on soil humus among others. However, the ecological effects of the eucalyptus vary widely depending on sites climate, soil topography and the benefits from eucalyptus vary depending on

the needs of the respective communities (*Munishi PKT, 2007*). It should be noted that each site where eucalyptus may be planted has its own peculiarities and buffering mechanisms and the response to eucalyptus growing by each site should be judged separately. The decision as to eucalyptus growing must be specific to each case and should be based on adequate assessment of physical, biological and society factors. The annual production of eucalyptus is 20 times that of national forests putting it at a higher rank in terms of biomass production. There is nothing wrong if its cultivation is done on marginal agricultural or degraded lands and farmlands as most eucalyptus can adapt to different ecological conditions, (*Sapra, 2007*). I have been treated using vapor from boiling leaves of the eucalyptus tree during my youth and eucalyptus has been used as treatment for many other diseases in the world.

The effects of eucalyptus on the water bodies will depend on the species in question, climate of the areas, surface soil conditions, nature of rock substratum, vegetative cover, slope gradient and length, tree growth stage and tree density, known depth and leaf density, amount of rainfall and soil moisture conditions and rooting depth (*Munish, 2007*). Eucalyptus species are known to be water efficient water users than a lot of other tree species and crops. The controversy as to whether to abandon planting of eucalyptus or uprooting of the existing eucalyptus trees may be baseless (*Munish, 2007*). It is unlikely that water in springs, streams and rivers in different parts of Kenya have dried up because of presence of eucalyptus trees. Given the multitude of benefits from eucalyptus trees, it would be unacceptable to disfavor or abandon eucalyptus planting or critique eucalyptus on socio-economic or ecological grounds, (*Munish, 2007*). Clearing of eucalyptus trees without more rainfall will not help rectify the problem of streams drying up. However, given the dynamics of water use by different species and the water consumptive capacity for fast growing species like eucalyptus it would be advised against planting of eucalyptus in water sources/catchments, riparian areas or as gap planting species in catchment forests especially in arid areas (*Munish, 2007*). We require setting aside the idea that eucalyptus trees are always bad and consider livelihood issues and balance between livelihood/economic issues with environment. The debate on eucalyptus and water use, soil fertility, allelopathy and biodiversity conservation is not proven scientifically. It is good to note that eucalyptus on the farm lead to poverty alleviation, empowerment creation in rural areas, reduction of pressure on natural forests and participatory natural resource management. We must continue to debate on the eucalyptus issue and develop policies and farm forest extension services in the counties that lead better management of eucalyptus farm forest. Farmers must be guided by Kenya Forest Service and KEFRI in management and marketing of their eucalyptus trees and well structured extension service offered at the county level (Kenya Forest service, 2009)

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