An alternative to crops

Mukau offers dryland farmers other means of earning income

By Jackson Mulatya

Melia volkensii, commonly known as mukau (Kamba) occurs naturally in the semi-arid zone of Kenya, Ethiopia, Somalia and Tanzania at altitudes between 350 and 1700 metres. The species occurs in areas with mean annual rainfall of 300 - 800 mm. It grows on most soils - sandy, clay and shallow stony - but preferably sandy soils with good drainage.

M. volkensii is highly preferred in the drylands because of its high value timber, which is durable and termite resistant. The timber, used for construction and in the furniture industry, is only comparable to camphor and mahogany. Mukau is also preferred as dryland fodder, for woodcarving and for use as a pesticide.

The species grows fast to saw logs with a rotation of 10 - 15 years depending on rainfall and after cutting, it coppices readily. In some parts of Eastern Kenya, it is left on farms and currently farmers are planting it within their cropland. Where the crowns pose shading effects on crops, Mukau is pruned to reduce shading and provide clear boles.

On farm conditions, *M. volkensii* has leaves throughout the season and fruiting is experienced throughout the year. Thus, flowering and fruiting do not follow a seasonal pattern and one could find different stages of fruit maturity on the same tree. Fruits normally ripen 12 - 13 months after flowering. Animals that feed on the fruits disperse the seeds. When the seeds are mature, the fruits change colour from green to yellowish-green and the pulp becomes soft.

Apart from seedlings, Melia can also be propagated through root and stem cuttings and tissue culture.

Benefits of *Melia*

Where seedlings are not available, transplanting natural regeneration and young saplings is done on farms and most trees have been established through these two methods. Thus, combined natural regeneration and sapling transplant has contributed to more than 90 per cent of the plant types on farms.

Melia requires little moisture to establish and grows fast even during the dry season, thus reaching rotation age in less than 15 years, while other exotic species require at least 20 years. The majority of farmers manage *Melia* through both thinning and coppicing. Once pruned and where close thinned, *Melia volkensii* does not pose serious competition to the intercropped on farms. Some farmers even report that *Melia* trees improve crop yields due to litter fall.

A bed frame made of mukau wood in a rural furniture workshop (Nuu, in Mwingi East). Mukau is highly valued for the quality of its timber, for various reasons including its resistance to termites. (Photo BGF)

Detail of chair, manufactured from mukau wood in a rural workshop. Timber quality is deficient as almost all good trees have disappeared and small diameter logs with various defects are now being sourced.

Table 6: Merchants retail timber prices of products in the markets in Kitui in 2006.
Exchange rate 1US dollar = Ksh 82; 2008

Item	*Species*	*Prices (Ksh)*	*Prices (Ksh)*
(One unit)		At markets	Town
Door frames	*Melia volkensii*	500	1,650
	Cupressus lusitanica	350	1,000
	Pinus patula	280	900
Beds	*Melia volkensii*	4,500	9000
	Cupressus lusitanica	4,000	7,500
	Pinus patula	3,500	6,500
Coffee table	*Melia volkensii*	2,000	3,000
	Cupressus lusitanica	1,200	2,000
	Pinus patula	1,000	1,500
Timber (4"x2") per foot	*Melia volkensii*	60	
	Cupressus lusitanica	30	
	Pinus patula	20	

Melia volkensii has been reported to have multiple benefits such as valuable and durable timber that is in high demand, firewood, dry season fodder, beehives, honey, pesticides and improved soil fertility and seeds. *Melia volkensii* timber products in the local markets are at least twice as costly as those of the exotic species such as *Pinus patula, Eucalyptus, Grevillea* and *Cupressus lusitanica.*

Conclusion

From an extension point of view, the expansion of Melia volkensii on farms and commercial plantation is feasible and stakeholders are encouraged to plant this fast growing species. Factors that encourage farmers to plant trees - such as good returns in a relatively short time, strong demand for the product, high value timber and ability to produce a range of products continuously - are met easily with *Melia volkensii.*

Thus, keeping trees on farms spreads farmers' income failure risks. Instead of selling food crops to earn income for such needs as school fees, bride price, weddings, etc, farmers could be encouraged to plant more trees on their fallow land to meet these needs.

The writer is the Corporate Relations Manager, Kenya Forestry Research Institute
Email: jackmulatya@yahoo.com