

Western Kenya and the Potential for Oil Palm

Authors: Steele P & Griffee P.,
FAO Agriculture Department
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Summary

As part of a new programme on integrated production systems (PRODS/PAIA), FAO recently conducted a mission to Western Kenya in support of post-production opportunities for diversification, added value processing and better market exploitation highlighted opportunities for boosting the production of edible oils. A newcomer in the portfolio of agricultural oil crops in the region is the cold-tolerant oil palm (CTOP) and demonstrations in cooperation with a large-scale sugar producer have been encouraging.

Cold tolerance in the African oil palm was discovered by FAO in Tanzanian and the Cameroon highlands. This material was crossed with high yielding, precocious varieties in Costa Rica and the resulting hybrids returned to Southern Africa by FAO, including Kenya. The country is only one third self sufficient in edible oils, and success with the CTOP may provide opportunities for both small-scale and industrial producers to help alleviate this deficit and provide local communities with an additional source of income.

Market Opportunities for Oil

National demand for edible oils in Kenya is of the order 380,000 t annually of which only 34 % are produced locally. The remainder is imported, and represents the second most valuable foreign purchase (after petroleum oils). This costs of the order Ksh 11,000 million each year. Considerable opportunities exist for boosting local production, and the country has a climate that is conducive to a range of annual and perennial oil seed crops. This includes sunflower, soya, groundnuts, safflower, sim-sim, linseed and others. Many of these are traditional crops in Western Kenya, and people are familiar with them. They are not familiar with the oil palm (*Elaeis guineensis*), but this is likely to change in the foreseeable future given the encouraging results of an FAO/Mumias Sugar Company initiative that is currently underway.

The market, as always, dominates decision-making with choice of business ventures irrespective of scale, and Western Kenya is no exception. Whether or not a market exists for palm oil in the region or the country will depend upon a number of factors, most of which are market related. For the oil palm, however, there are also some interesting biological and ecological factors involved, for the palm is a newcomer to the country and the edible oil that it produces is largely unknown in local cuisines. Much will depend upon its performance and of existing markets for edible oils or those that can be developed. First indications, however, appear good. Red palm oil contains the precursors to vitamins A and E - a much needed diet supplement in the region.

Agriculture in Western Kenya

Agriculture is the main economic activity in the districts. Current agrarian practices are not sustainable. Soils are productive, but have become extensively depleted of nutrients. Tree cover has been removed. Land has become fragmented with the rise in population and most holdings remain at subsistence production levels. Maize, groundnuts, vegetables and livestock production predominate. Cash crops include coffee, tea and sugar. Rainfall is seasonal, reliable and plentiful (1,000-2,400 mm pa). Local rivers are perennial. The climate is suitable for a range of tropical and semi-tropical crops. Temperatures are in the range 12-30 degC. Elevation is 1,000-2,000 m ASL. Topography is rolling hills with scarps, with potential for irrigation.

The climate for oil palm in some districts is comparable to, or better than, that of Malaysia as the rainfall has a more even distribution and thus the cumulative sunshine intensity is greater. The missing factor has been cold tolerance of the oil palm.

Local Economy

The districts have limited facilities – roads, stores, processing plant, etc., lack access to technical innovation, financial investment, information resources, etc. and depend increasingly on food and other materials from outside. Of the order of 60 % of all agricultural products consumed are from out-of-district. Agricultural production/income is constrained by lack of opportunity to diversify, lack of markets for crops in glut, few alternative avenues for adding value, and inefficient use of natural resources, viz. land, water, tree cover, etc. Scope exists for exploiting non-agricultural sectors, for example, tourism but facilities are little developed. The economy is largely public sector and subsistence driven.

Demography

There are an estimated 1.8 million people in the districts of Kakamega, Busia and Bungoma (1999) with a ratio males to females at 92:100, respectively, and of the order of 75 % of people under the age of 30 years. Annual population growth rate is 2.12 %. Poverty levels are high at an estimated 50 % in *absolute* poverty. Agriculture employs of the order of 62 %, with less than 20 % in wage employment. Population densities are the highest in rural Kenya at an average of 950/km².

Industrial Crops in Western Kenya

Western Kenya is ideally placed for industrial crop development within the region. Western Kenya is centrally-located within the country and within East Africa, it is on the main trading routes between the coast/Nairobi and the hinterland of Uganda, Rwanda and the DR of the Congo, and adjacent to Kisumu – a main lake trading centre. There is a rapidly expanding economy within the East African Region, and a growing population. In Kenya, however, *industrial* agricultural production is taking priority as exemplified by foreign investment and sales in relatively new sectors such as cut flowers, selected green vegetables, pharmaceutical crops and others. There is also continuity with plantation crops such as tea, sugar and coffee, and an interesting in diversification into new and alternative plantation crops that show potential. Herein is the prospective role for the oil palm.

One corollary to this, however, is the reduced viability of the independent and/or small-scale traditional farmer in Western Kenya. This sector faces competition from across the border in Uganda - same crops, production systems, etc. but better growing conditions, higher yields and, currently, lower costs - and from production areas in the country that enjoy closer trading links with the main urban centres. Most small-scale producers in Western Kenya remain isolated from the industrial investment opportunities that prevail for agriculture and this is likely to remain so within the foreseeable future. Notwithstanding development plans that have been proposed, little has been done by those in the region or by others to promote regional opportunities and, everywhere in the districts, there are indications of economic downturn (e.g. overburdened and/or broken public works, limited investment in roads, telecommunications and utilities, defunct factories, large numbers of poor and unemployed, out-migration, etc). The proposed Kakamega District Development Plan for the period 2002-2009, for example, accurately describes these constraints and links them to an innovative list of proposals for further consideration but, without the interests of commercial investors (supported by public and agency packages – financial and technical) little is likely to happen in the short term.

The dynamics of choice make it essential that the entrepreneur keeps abreast of his or her markets and, for the current period, this is likely to rest with a choice of products available from the low-input/low-output agrarian systems of production that are typical of the Farmers Field Schools (FFS) and found throughout the districts. Better knowledge of markets and the introduction of small-scale processing and associated crop storage, handling and servicing will be required that small-scale producers are able to participate and make choices. This requires access to reliable trading information - available on a regular basis - and an ability to make decisions quickly. The small-scale farmer/entrepreneur is required to accept risk as part of the commercial system in which he or she may work but, for the relatively inexperienced newcomer in the impoverished rural communities of Western Kenya, these are commercial risks that represent a considerable danger. The risks may be out of all proportion to the limited resources available. The context in which to introduce a new tree crop such as oil palm is thus a challenging one, but there are some not inconsiderable advantages in making the effort to do so - and herein the Organisation has a role with providing planting materials, technical assistance and encouragement to the national counterpart peoples involved with agroindustrial development.

Industrial Palm Oil Production

The Mumias Sugar Company (MSC) are the largest agroindustrial producers of their kind in Western Kenya, and of immense value to local economies (estimated 40 BKsh incomes, rural services, etc.). Covering an area of radius 30 km on the Mumias sugar factory, the company has 49,700 ha of cane for 2000/2001, up from 37,600 ha 10 years earlier. Approx. 15 % of the cane is replanted annually. Sugar yield for 2001/2002 is projected at 1.95 Mt (1.85 Mt from Mumias, and the remainder from elsewhere). The estates have a potential for 2.2 Mt annually, but dry conditions every 4-5 years reduce output. In mid-November, 2001 the Company went public and offered shares nationwide on the Kenya NSE bourse. Government had reduced its holding to 31.8 %.

Notwithstanding the value of cane, the Mumias Estates are giving considerable importance to alternative crops such as oil palm. This is being explored in partnership with FAO and the Kenya Agricultural Research Institute (KARI). With the advent of cold tolerant germplasm from the 1970s on, the prospects of high altitude palm production (1,000-1,200 m elevation

and away from the coast) has become attractive in Kenya. MSC has of the order 40,000 outgrowers - mostly smallholders - and a good extension network. Some of the outgrowers are also part of the FAO Farmers Field School network. As a result of the FAO mission - the first FFS received and planted oil palms thanks to the MSC Agronomist.

A two year FAO/TCP project is in the pipeline to explore the potential of oil palm in cooperation with KARI and the Mumias Estates. The project will build upon the 7 year old plot of palms already available on site, and the estimated 1,500 plants recently imported from Costa Rica; half of which have been field-planted and half remain in the nursery stage. The potential for these hybrids is considerable. Fruit can be harvested from three year old palms. Annual yields from mature palms are of the order 20 t/ha of fresh fruit bunches (4t/ha of mesocarp oil). Estimates suggest of the order 20,000 palms may be planted by large-scale producers during the next 10 years. Industrial cropping of this kind is largely beyond the resources/needs of small-scale farmers, but the potential for distribution of oil palms around Western Kenya with small numbers of palms per farm or household and the extraction of oil on small-scale represent a considerable opportunity.

Palm oil is a valuable food oil. It can be extracted easily by hand or with simple extractors, and used in crude form in the household. It contains high levels of vitamin A/carotene and is also rich in vitamin E. It is used to prepare very tasty dishes; other products include good quality soap as demonstrated by FAO in Malawi during the past five years.

Concluding Thoughts

The expansion of the agro-ecological limits of profitable oil palm production in Western Kenya will have significant consequences for socio-economic development in rural communities and for food security in farm households. Whether the downstream effects also enhance the balance of trade in food oils will depend largely upon local production costs and the ability of Kenyan producers to meet the competitive pricing of foreign producers, many of whom currently enjoy buoyant import markets into the country.

Currency Conversion

For mid-November, 2001 the ratio of the US\$/Ksh was 1:79 respectively.

Pictures



1. Fruits/Young Palm/Fruits. No. 1932.

Caption: Three year old cold tolerant oil palm showing precious fruiting at Kaporo, Northern Malawi; 20/02/1998. *Acknowledgement: Griffee P. and EcoPort.*



2. Pilot Plants Mumias. No. 20810.

Caption: Oil palm seedlings recently transplanted into large polybags at the Mumias Sugar Company Western Kenya. The sugar mill is in the background. The red tank was constructed by MSC to steam-sterilize soil for the nursery; 13/11/2001.

Acknowledgement: Griffee P. and EcoPort.



3. Quarantine Nursery Mumias. No. 20860.

Caption: The cold-tolerant oil palm quarantine pre-nursery at Mumias Sugar Company. The Agronomist, responsible for the nursery - Mr. Agree Wanjala, is on the right; 13/11/2001.

Acknowledgement: Steele P. and EcoPort.



4. Field planting. No. 20816

Caption: A vigorous oil palm 3 months after field planting in Bungumo District, W. Kenya, (Farmed by Mr. Nandokho). Note the well-formed basin. The intercrop is germinating cowpea; an excellent companion for young palms; 13/11/2001.

Acknowledgement: Griffie P. and EcoPort.



5. Young Fruiting Palm Zambia. No. 1962

Caption: GCP/ZAM/52/BEL. Mrs. A. Chibiliti of Friendly Farm (Nchelenge District) where there are 50 cold tolerant, precocious oil palms that started production 3 years after field planting. At 4.5 years they produce 12 litres per palm (this picture). Between 20 to 30 litres are expected at year 6. Without cold tolerance this would not be possible; 05/03/1999.

Acknowledgement: Griffie P. and EcoPort.