

SURVEY OF TRADITIONAL FARMING PRACTICES IN WESTERN KENYA

Gilbert Nduru
Associate Professor
Karatina University
Karatina, Kenya
gilnduru@gmail.com

F. L. (Rick) Bein
Professor
Indiana Purdue University
Indianapolis, IN, USA
rbein@iupui.edu

Abstract: *Traditional agriculture reveals a wealth of accumulated ecological knowledge in western Kenya. The practice of policulture with food crops prevails whenever there is no mechanization, no cash and the availability of land is limited. By growing different crops in the same space, higher diversity and higher yields are attainable. Large families can be sustained on small pieces of property by engaging in policulture. Policulture by nature acts to control weeds, and symbiotically fertilizes its companion crops. Policulture is their crop insurance.*

Key Words: Agriculture, Poli-culture, Western Kenya, Food crops

Introduction

Agriculture is the largest contributor to Kenya's economy as it earns about 24% of the gross domestic product and employs 75% of the population (The World Factbook: 2007). The principal cash crops are tea, horticultural produce and coffee, while subsistence intensive policulture occupies all but 5% of that 75%. Policulture is the mixing of crops in the same field which provides a successful farming alternative in western Kenya and much of the tropical world. Policulture is the traditional agriculture method of most of sub-Saharan Africa, and services a subsistence activity whose main purpose is to feed the farmers themselves. When there is surplus, some is sold for small profits. This type of farming has been present on the Kenyan landscape for many centuries. The technology of this farming involves the understanding of how and which crops are grown together, timing of the cultivations, weed and pest control, and many other intricacies that are inherently instinctive among the farmers (see figure 1). Such practices contain an ecological aspect mixed with culture.



Figure 1. Siaya County farmer cultivating a policulture field of five different plants.

It is this traditional knowledge that is illusive and difficult to document with respect to its value and productivity because it is not recorded information. This is information handed down

from parent to offspring often differing from neighbor to neighbor. Never the less the agricultural practices are successful and productive.

At another level of interest with respect to traditional agriculture, is that it is missing from the developed world. Agriculture in the developed world has been taken over by big business where chemicals are used to solve most agrarian problems and many traditional practices have been dropped because mechanization has not been adapted to accommodate the small scale traditional agriculture. It is feared that mechanization will take over agriculture of the whole world including Africa. There is much pressure to modernize agriculture in the developing countries that the traditional farming strategies may disappear there also. If Africa goes the way the rest of the world, there will be no traditional agriculture remaining.

The goal of this project is to record the traditional agricultural practices in Western Kenya before they are abandoned or forgotten. Futuristically, these may be useful again someday. We do not know how long chemically supported agriculture will survive. Traditional farmers in the western Kenya were surveyed over a four year period, 2008 through 2011, to discover their sustainable practices that allow them to maintain their livelihoods.



Figure 2. Traditional farmers in western Kenya completing a survey in 2008-2011.

Survey Procedure

Farmers were asked questions that included information on crop types, crop mixes, planting patterns, harvesting strategies, water sources, land preparation methods, cultivation methods, crop use, livestock, and soil. Sampling was taken in the western part of the Rift Valley in the smaller more populated counties. A “random purposeful sampling” technique was used to select the farmers interviewed. Graduating geography students from Moi University were instructed to follow the rural roads visually selecting farms with high agro-biodiversity.



Figure 3. Graduating geography students from Moi University during the survey process.

Findings

Two hundred and sixty seven (267) small farms were selected for the survey. The average farm holding size ranges from 1 to 5 Hectares. Maize was the most common crop grown (91%). There was a high frequency of other crops grown including: beans (69 %), bananas (55%), sweet potatoes (45%), kales (42%), cassava (35%), millet (30%), sorghum (28%), and pumpkin (28%).



Figure 4. Policulture of maize, beans and other crops

Most of farmers prefer to cultivate food crops. However, if there is surplus production farmers would sell the surplus. The practice of policulture was used by all the farmers surveyed. Most of the farmers use animal manure to fertilize their land and rarely use chemicals of any kind. Policulture provides an agronomic ecosystem approach such that different crops support each other in various ways. Leguminous crops like beans add nitrogen to the soil that is high demand

with maize. Some crops repel pests that attach other crops. Shading from intense sunlight aids some crops. Other symbiotic relationships probably exist between partner crops that have not been documented yet. . Because the mixture of crops occupies a number of ecological niches, there is little room for weeds to thrive. When a certain weed becomes a problem the farmers find a way to use the weed; either eating it or feeding it to the animals.



Figure 5. Crop mixture bananas, Napier grass, and papaya with hive of honey bees

Traditional farmers are totally dependent on themselves and their community when crop failures occur. However, crop failures are rare for the most part since one crop may falter while the other crops will succeed in producing the necessary food. Policulture is their crop insurance

Specific Crop Mixes

Cassava, a major root crop, matures after one year but continues to be harvested up to 2-3 years later, is planted with other crops, but remains long after the others have been harvested. The cassava cycle often serves as a semi fallow period while the soil recovers.

Beans and maize are frequently mixed with a variety of crops to take advantage nitrogen fixing ability of beans and the climbing of the beans up the corn stalks. Long maturing crops like pineapple and bananas are planted under the established maize. Instead of harvesting the maize ears, the leaves of the maize are harvested when ready and fed to the livestock. This allows the sunlight to reach the lower growing crops. The maize ears can be harvested five or six at a time depending on the consumption needs.

Conclusion

Pretty, Noble, Bossio, Dixon, Hine, Penning de Vries & Morison (2006) argue that sustainable agricultural practices, anchored in local knowledge are most effective in developing resilient food production systems. This study concurs with our finding that sustainable agriculture is driven by local knowledge and resource conserving techniques, making the best use of nature’s goods and services without damaging those assets. Investing in the capacities of small farmers to adopt sustainable practices will help secure higher yields and profits, and will promote local food consumption. Traditional agriculture can be productive enough to support populations if it is supported with

research and the infrastructure of markets, financing and price supports.

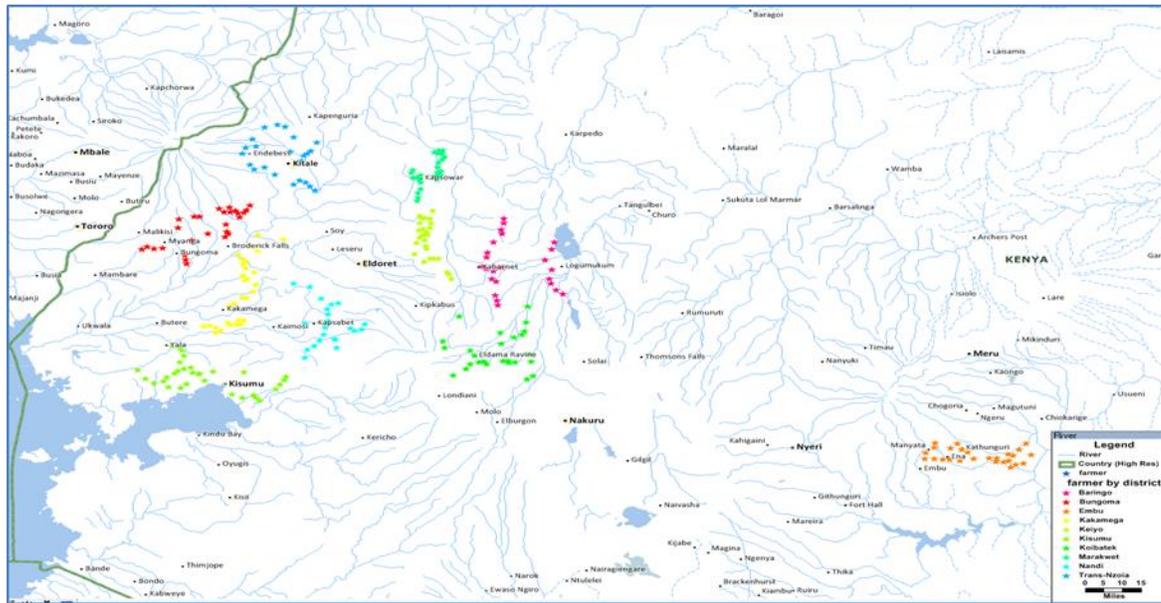


Figure 6. Map of western Kenya shows the location of the individual farms visited

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