



The Tree Raising Process in Kenya (Credit: Pablo Sassoon)

The Potential of Agroforestry Techniques: Fighting Food Insecurity in Kenya

Pablo Sassoon

The power of agroforestry extends beyond simply reforesting areas and reviving the natural landscape. In his depiction of the agroforestry program facilitated by Mount Kenya Environmental Conservation (MKEC), Pablo Sassoon explores how agroforestry practices can increase levels of food security and economic independence.

Agroforestry can be defined as an ecologically based management system that enables agricultural sustainability and production with the aim of providing social, economic and environmental benefits. Most often achieved through the planting of trees on farms and in agricultural landscapes, agroforestry techniques have the potential to take care of the environment in ways that contribute to food security for local rural populations.

During my four months in Kenya for my Glocal internship, I worked with Mount Kenya Environmental Conservation (MKEC), a grassroots NGO dedicated to supporting the natural environment and the livelihoods of local rural communities in Embu and its surrounding counties. The main projects of MKEC are the reforestation of Mount Kenya Forest in endangered areas, providing capacity building for farmers in innovative and sustainable techniques in addition to school programs for teaching children about environmental conservation. Simultaneously, there are also agroforestry programs designed to increase food security, contribute to climate change adaptation and mitigation along with promoting income-generating opportunities for communities.

The particular dynamics of the agroforestry program revolve around the communities themselves. Communities raise saplings in specialized tree nurseries where they are grown for selling. These "tree-raising" projects are both economically and environmentally beneficial; it is an occupation that normally takes a few hours a week and can be a complement to a job, studies or farm work while contributing to reforesting the region. Each community group who drives a tree

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nursery divides the profit equally among its members, calculating how many days each member worked in the nursery and will receive accordingly. Usually, these groups have an average of around ten community members, and thus constitute a community in itself with its own constitution and leadership. This community building has a significant role as members have a cooperative network to rely on and can get support in difficult times through, for example, a joint fund to ask for loans.

Some of the most popular agroforestry species in Embu are: *Acrocarpus*, a fast-growing tree that adjusts well to different climates; *Grevillea robusta*, also a fast-growing tree, even in dry areas; and *Avocado*, a tree that provides fruits for personal consumption and selling. It is important to grow these trees in the nurseries rather than planting the seeds directly into the soil to improve their survival rate. The group members are involved in the tree-raising process from the very start: from identifying the desired tree species for the nursery, looking for seeds in the forest, collecting nutritive forest soil for the pots supplied by MKEC, to planting and weed maintenance.

In a span of three or four months, when the trees have grown adequately, the community group is able to sell them to MKEC who distributes the saplings to farmers registered for the agroforestry program. These farmers will plant them on their farms in between the crops. There are also mobilization meetings organized by MKEC that educate the community about

climate change and raise awareness of the importance, value and various techniques of planting trees in farms.

The benefits of tree planting and agroforestry in general are multifold. Environmentally, the impact of the consequences of climate change in the farms are reduced as trees increase organic matter in soil and increase water retention, reduce erosion and desertification. This thus makes farms more resilient to droughts and other natural disasters that are being worsened by climate change. Economically, trees planted in agricultural lands provide fruits that can be sold directly on the market thus increasing livelihoods; the trees' foliage also reduces expenses on fodder for cattle.

The potential of agroforestry also extends to improving the situation of struggling youth to enhance their livelihoods and thereby ensure personal food security. Usually, youth lack farms to grow their food independently and the possibility for them to buy land is almost non-existent; only when married may they sometimes get a piece of land from their families' properties. Jobs are also scarce in rural regions, making it difficult to access money to buy food.

However, the youth are still the least active age group in tree nurseries. Some of the reasons that are holding them back from taking part in "tree raising" are low payment, their lack of skills to take proper care of the saplings, a lack of space to start a nursery and the lack of materials such as a water tank. They also have difficulties in accessing general information about these opportunities. For example, government programs such as Access to Government Procurement Opportunities (AGPO) that aim

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to facilitate enterprise-building in vulnerable populations are largely concentrated in urban centers and do not reach rural counties.

Youth have the age, energy and in many cases, the availability of time and willingness to grow trees for selling. Accordingly, promoting youth engagement and education in sustainable agricultural practices could be a significant measure to increase their economic independence given they often lack access to higher education. Encouraging youth participation in agroforestry projects is in fact vital as trends from the World Bank database show that youth unemployment in Kenya rose to 13.8% in 2021, increasing from the relatively stable 7% of the 1991 to 2016 period. Although generally women are more likely to be unemployed, the youth as a group are struggling equally across genders. Offering more incentives such as increased payment, providing small capital as loans for them to start a nursery and providing training could be possible ways to counter the abovementioned challenges.

Broader practical concerns in agroforestry include scarcity of soil and water and shortage of desired tree species. Yet social issues such as illiteracy, concerns of land security and poverty alongside poor socio-cultural orientation towards agroforestry technology and entrepreneurship are some of the most significant challenges preventing effective participation and interest in agroforestry.

These are not only problems in Kenya, but also in other countries such as Uganda and Nigeria where agroforestry practices have been implemented. (Ahmed et al., 2021; Galabuzi et al., 2021).

Recommendations to combat these difficulties include strengthening farmer capacity-building programs, upholding soil and water conservation technologies along with enabling easier access to desired seeds. Moreover, it is also recommended involving the communities to participate in different instances of the process, to enhance their influence in the project and feel as part of the whole system that

integrates many different stakeholders along a timespan of several months.

Ultimately, agroforestry is a practice that has much potential to enhance livelihoods and conserve the environment. It has the power to reduce food insecurity and improve the lives of rural communities in Kenya and all over the world. With the ever-increasing impact of climate change and rise in food insecurity across the globe, agroforestry with its initiatives such as tree-raising, community building, mobilization meetings, economic empowerment and entrepreneurship opportunities can bring significant change.

References:

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