Trees on farm reduce hunger and improve nutrition

Agroforestry is helping to improve food security in many poor rural communities by increasing crop yields and introducing indigenous trees with nutritious fruits

Hunger in rural areas is often a result of poor soils and meagre harvests. Agroforestry makes soil more fertile, resulting in better harvests of staple foods. This means that families are less likely to go hungry. Planting trees that improve soil fertility naturally is a low-cost way for farmers with poor soils to reap better harvests. In Malawi, Zambia, Kenya, Tanzania, Niger, Burkina Faso and other countries in sub-Saharan Africa, fertilizer trees dramatically increase maize yields.

Fertilizer trees boost maize yields

Across hundreds of thousands of hectares of the Sahelian region of Africa, yields of grains, groundnut and cotton have improved when grown under or near the fertilizer tree Faidherbia. A special feature of Faidherbia is that it goes dormant and sheds its leaves during the early rainy season – when crops are planted – and regrows its leaves when the dry season begins, so it does not compete with crops for light, nutrients or water. Research in Zambia has shown maize yields in the vicinity of Faidherbia trees averaged 4.1 tonnes per hectare compared to 1.3 tonnes nearby but beyond the tree canopy.

A ‘fertilizer factory’ on farm

The World Agroforestry Centre has calculated that if half a million farmers, each with 0.2 hectares were to plant fertilizer trees, the amount of nitrogen they would fix in a year would be equivalent to 200kg of fertilizer per hectare. If farmers were buying this as mineral fertilizer, it would cost US$5.8 million a year.

Food for the family all year round

In the hillsides southeast of Blantyre in Malawi, Mary Sabuloni, a widow supporting eight children, has seen her maize yields increase since she began planting fertilizer trees. Previously, she used to get about 10 bags of maize from her fields. Now she harvests at least 25. This has made a big difference. In the past, her children often went hungry. Now she can feed her family all year round.
Bridging the hungry gaps with agroforestry trees

Indigenous trees have always been an important fallback for the rural poor when food is scarce. In Malawi, Mozambique and Zambia, up to 80 per cent of rural households go hungry for three months of the year because they cannot grow enough from their poor soils. Many rely on indigenous fruits to get them through.

By including trees in their farms, farmers can break the cycle of hunger and provide their families with a balanced diet. In Cameroon, the Democratic Republic of Congo and Niger, tree domestication by local farmers is having a remarkable impact on the health and welfare of rural communities. For many poor farmers in these areas, the new farming activities have boosted incomes and provided food security, especially during the ‘hungry season’.

Fruit trees for better nutrition

Vitamin deficiency is a major cause of disease in Malawi. Fruits are rich in vitamins, but for most rural Malawians they are a luxury. The World Agroforestry Centre is tackling this problem by helping communities to grow fruit trees on their farms. A network of community nurseries is assisting people to produce their own seedlings of preferred fruit tree species. This effort is part of the Malawi Agroforestry Food Security Programme, coordinated by the Centre, which aims to increase food production and enhance nutrition in 200,000 families – around 1.3 million people – by adopting agroforestry technologies developed by the Centre and its partners.

Fruitful farming

Back in 1997, Nelson Mkwalila, a farmer in Chiradzulu district in Malawi, began planting fruit trees on his land. Today almost every corner of the farm that isn’t devoted to annual crops is home to fruit trees. He has guava, peach, banana, apple, papaya and several other species. There is plenty of food for his family throughout the year and even a surplus to sell.

Domesticating wild fruit trees

The World Agroforestry Centre’s tree domestication programmes are helping African farmers to bring superior varieties of wild food species out of the forests and onto farmland. Many smallholder farmers are almost entirely dependent for their income on selling coffee and cocoa—crops they can’t eat and whose price is determined by world markets. When farmers plant trees such as African plum, they become less dependent on commodity markets and they produce a crop they can both eat and sell.