

Improving bio-diversity at local level

Case study from Maradi, Niger

by Trudi Dickins and Joel Matthews



The area around Maradi used to resemble a desert until MIDP encouraged the regrowth of tree stumps.



The Maradi Integrated Development Project (MIDP) is a Christian development programme which is part of SIM (Society for International Ministries) Niger. They believe the gospel is at the heart of true and lasting development. They encourage stewardship of the earth and living in harmony with both God our Creator, and the earth he created to be enjoyed.

When the MIDP first started work in the Maradi region, there were only a few trees left in fields throughout the whole district. Destruction was almost total. One could go in any direction from Maradi and mistakenly think that the area was a desert. Traditional land preparation methods were very destructive. All trees and vegetation were cleared and burnt, exposing soils to the effect of winds, hot sun and fierce storms. There was no wood for people to harvest for cooking and building. Women walked miles to gather small

sticks and millet stalks. When this was not available, manure was used for cooking. Building material was extremely scarce. People sometimes went out at night to dig up the roots of the few remaining protected trees to use for building. People had to travel up to 30 kilometres to Maradi to buy building poles.

Traditionally farmers cleared all their land to provide fields for crops. MIDP introduced the idea of allowing tree stumps to regrow and become productive. At first farmers found this

saved them the work of clearing the stumps each year. When they found that allowing trees to regrow didn't harm crop growth and brought other benefits, particularly financial, they began to experiment.

With many species, trees cut down years ago still maintain root systems that push up new shoots every year. Farmers are encouraged to leave five of these shoots per tree, cutting one each year and letting another grow in its place. On removing a

shoot, the cut leaves are left on the surface where they reduce erosion and are then eaten by termites, returning the nutrients to the soil and improving soil fertility. The remaining shoots continue to grow, providing an endless supply of wood. The ideal density, when grown with cereal crops, is between 40 and 80 trees per hectare. However, this can vary, depending on the soil, climate and tree species. Tree layout will need to be carefully considered if ploughs are used for cultivation. In the last 15 years,

farmers' views have changed from seeing trees as a nuisance and competing with crops, to seeing them as an essential part of sustainable agriculture.

From the first year, firewood is collected from trimmings. From the second year on, cut branches are thick enough to sell. Other by-products include fodder, edible seedpods and leaves, timber, and material for roofing, walls, granaries and tool handles. The quality of life has improved tremendously. Wind speeds and dust are

greatly reduced. There is plenty of shade and the area is much more productive and attractive.

Joel Matthews is the Director of the Maradi Integrated Development Project, SIM, BP 121, Maradi, Niger.

E-mail: midp@maradi.sim.ne
Tel: +227 410 248

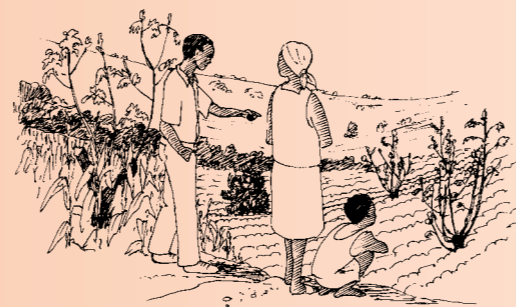
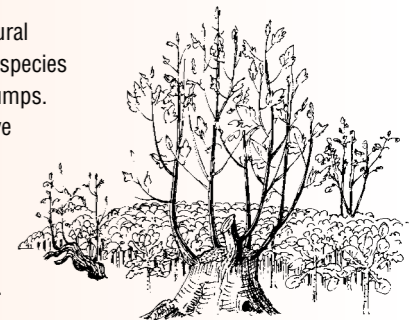
Practical advice

- Begin by promoting local trees that farmers see as beneficial for crop growth. Later on, do local research with farmers to find which trees are most suitable. These are usually species with deep roots that do not compete with crops.

- Encourage high value grasses such as elephant grass. They help prevent soil erosion, encourage soil fertility, provide animal feed and the leaves can also be woven into mats.



- Promote the natural regrowth of tree species from live tree stumps. If there are no live tree stumps, try scattering seeds from local species during the rainy season.



- Enable people to solve their own problems and experiment with new ideas. If they work, the farmer will be the first to know and will be the most enthusiastic promoter.

- Encourage farmers to make improvements first on their own land rather than on common land. This is more likely to bring benefits.

- Avoid monoculture. Plant several crops together such as peanuts, several varieties of beans and sesame. This reduces damage from pests and disease.

- Don't be too ambitious or you may discourage farmers.

- Promote high value trees that provide edible leaves, pods and fruits for humans so that people have something to eat during times of drought. Wood can also be sold in order to buy food.



- Increasing diversity of trees and plants will increase the number of insect predators such as birds, lizards and certain insects (praying mantis) so that pest control improves.



- Encourage the community to develop clear rules that respect property, so that people are punished for damaging or removing trees on other people's land.

