

AGROFORESTRY IN AFRICA: The Central Role of Nurseries

Paul Kerkhof

Introduction

The following discussion of different types of nurseries draws on a larger study which surveyed 19 projects in 11 countries in Africa. The aim of this study was to look at the experience gained by these agroforestry projects which were chosen to represent a range of ecological conditions and project approaches. The study summarises the main lessons learned, viewed from the perspective of the people directly involved in designing and implementing projects.

Seedling production is a key element in most agroforestry projects. The question of how this is best organised has been a subject of considerable debate, which ranges from the use of centralised and highly controlled nurseries to decentralised farmer-run nurseries.

Centralised Nurseries

Most of the projects in this study have started by establishing centralised nurseries. Some, especially those in very dry areas, have relied on them entirely. The advantage of centralised nurseries is that they enable a seedlings production system to be set up quickly. They also allow the project to control the quality and number of seedlings produced.

The obvious problem with centralised nurseries is seedling distribution. It is often forgotten that, even if farmers consider seedlings useful, they rarely rank them high on their list of priorities. One project found that farmers were unwilling to walk more than about 2 km to collect seedlings. In many projects, however, the average distance between the central nursery and farmers is twenty or more kilometres, and sometimes much further. It is therefore not surprising that the uptake of seedlings has often been disappointing.

The problem can be alleviated by transporting seedlings to villages, schools and other collection points. But this is only possible if vehicles are available at planting time. Even then, there can be problems for lorries and pick-up trucks attempting to use bad rural roads during the rainy season.

As a result of these difficulties, large numbers of seedlings are often wasted. It is not uncommon to find that less than half the seedlings grown in a central nursery find their way to the local community.

Group Nurseries

A number of projects have promoted communal or group nurseries at the village level as a way of decentralising seedling production. The techniques used tend to be simpler than in standard forestry nurseries and they are usually much smaller. Most are supported by projects or government agencies and are provided with plastic bags, tools, seed and advice.

Group nurseries can go a long way towards solving the seedling distribution problem. But projects have found that establishing and sustaining them is not always an easy task. It requires a strong extension organisation and above all, an interest in tree growing among the local people.

Some projects have offered incentives for villagers to establish nurseries. One project provided inputs such as water points and donkey carts and paid for the nursery staff. This confuses the issue to some extent as it raises the question of whether people really want the nursery or are just out to get the benefits provided. Projects therefore face a deliberate choice. If they provide too little assistance groups may not be interested in setting up nurseries; but if they provide too much, the motivation of groups may be distorted so the whole operation becomes unsustainable.

Problems of this kind were common among the projects visited. None were entirely satisfied with the results they had achieved so far. In most projects, group nurseries accounted for well under half of total seedling production, and usually much less. Despite this, however, there was a widespread feeling that group nurseries do play an important role in encouraging communities to learn about tree growing and take responsibility right from seedling production onwards.

Farm Nurseries

It has been generally assumed that farmers need to be provided with seedlings if agroforestry programmes are to have an impact. A survey in west Kenya, however, carried out in 1984 by KWDP, found that as many as a third of households were already raising their own seedlings without any outside assistance.

The costs and work involved are negligible. The seedlings are mainly raised at the beginning of the rainy season so that watering is not required. Plastic bags are not used, there is no root pruning of seedlings and little effort is made to protect the nursery against animals. The seedlings are planted on farmers' own lands or are sold or given to others.

Since then, there has been increasing interest in promoting or assisting such 'farm nurseries'. A number of projects now provide farmers with assistance in the form of seeds, plastic bags, technical advice, and perhaps a watering can. Extremely encouraging results have been reported in some places. In Koro in Mali, for instance, it is expected that the seedling production from nurseries run by individuals will soon exceed that from central nurseries.

The KWDP project in Kenya has made considerable efforts to promote such farm nurseries. It has used films, radio and mass meetings as ways of reaching large numbers of people. It also provides farmers with seeds. The project has suggested a number of ways in which the nurseries might be improved but it seems that few farmers are interested in accepting this advice. They refuse to carry out root pruning, for example, despite the improvement it brings in the survival of seedlings after they have been planted out.

Some projects have used cash incentives to encourage farmers to grow seedlings on their farms. These are then bought at a fixed price and used on the project. But as in any case where money is given, questions arise about the sustainability of the practice.

The discovery that farmers are perfectly able to produce their own seedlings when they wish to is important. It means that centralised seedling production may not always be as necessary as has been assumed in the past. The challenge for projects is to identify ways by which these nurseries can be encouraged.

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The main research and writing was carried out by Paul Kerkhof for the Panos Institute, London. The study was edited by Gerald Foley and Geoffrey Barnard and was published by the Institute as a book entitled: *Agroforestry in Africa: A Survey of Project Experience*

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LIST OF PROJECTS COVERED IN SURVEY

Type A: Tree growing to increase productivity in high potential areas

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|---|----------|
| 1. Projet Agropastoral de Nyabsiindu | Rwanda |
| 2. Soil Erosion Control & Agroforestry Project | Tanzania |
| 3. Promotion of Adapted Farming Systems Based
on Animal Traction Project | Cameroon |

Type B: Tree growing for fuelwood and other products

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| 4. Gituza Forestry Project | Rwanda |
| 5. Kenya Woodfuel Development Project | Kenya |
| 6. BAT Tree Planting Project | Kenya |
| 7. Rural Afforestation Project | Zimbabwe |
| 8. Gursum Land Use Project | Ethiopia |

Type C: Village forestry projects

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| 9. Projet Bois de Village | Mali &
Burkina Faso |
| 10. Village Woodlot Programme | Tanzania |
| 11. Reforestation Around Wells
in the North | Senegal |

Type D: Tree growing to increase productivity in dryland areas

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| 12. Majjia Valley Windbreak Project | Niger |
| 13. Koro Village Afforestation Project | Mali |
| 14. Projet Agroforestier | Burkina Faso |
| 15. Soil Conservation and Agroforestry Project | Zambia |

Type E: Projects to promote natural regeneration

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| 16. Hifadhi Ardhi Dodoma Project | Tanzania |
| 17. Turkana Rural Development Programme | Kenya |
| 18. East Pokot Agricultural Project | Kenya |
| 19. Forest Land Use Project - Guesselbodi | Niger |