Chapter 4 - Choosing the right tree for the job

This chapter will attempt to draw together the various indications emerging from the analyses in the preceding chapters and suggest a simple algorithm for the selection of trees and tree planting practices to fit the diagnosed needs and opportunities. The hope is that the adoption of this or some equivalent approach to designed tree planting interventions might replace the haphazard style that has characterized the majority of tree planting projects thus far, supporting a new standard of project relevance to people's needs.

A three-pronged strategy

Before presenting the methodological tool and the supporting resource materials, however it must be useful to indicate the limitations of the suggested methodology and its place within a comprehensive decision making strategy. The systematic approach to tree planting interventions presented here does not and cannot represent the whole of the strategy required for successful tree planting projects. It represents only the middle part of the following three-pronged strategy:

1. avoid mistakes by letting people make their own choices
2. catalyse development by presenting relevant alternatives
3. deal at all choices as worth hypothesizing until validated by experience

If there is one lesson to be drawn from the past decade of experience in tree planting projects, it is that there is no substitute for local experience. The indigenous knowledge and decision making strategies of local people represent ages of accumulated local experiences which, in the first instance, the best source of project guidance. The most important strategy for successful tree planting projects, therefore, is to acknowledge the decision making sovereignty of the local people (they do what they want in any case) and assist them to make informed choices. Failure to implement this common-sense strategy is the most destructive and at the same time the most easily avoided model.

The intended beneficiaries are not only the ones best equipped to sort out what works best for them, they are also the only really important judges of project success or failure. The judgments they express, not through speech but through their adoption behavior, are the sole testing evidence of project impact (or lack of it). To give them their heads is not simply the best way of avoiding project mistakes, it is also the easiest of strategies to implement. All tree planting projects are doomed without such an initial consultation. Simply asking people what they want in the first place, and subsequently monitoring what they actually take away with them from the nursery or seed stores over time, is the best source of feedback information on "what works" from the adoption standpoint (see the box on the next page for an indicative summary of what has worked in one region of the world).

Characteristics of successful tree planting programmes in Central America

1. Species most often adopted by farmers tended to be fast growing, aggressive, multipurpose trees whose uses were well understood and whose performance visibly surpassed that of locally available trees. Accepted species also tended to grow well on a wide range of ideas and to tolerate abuse and neglect during the establishment phase.
2. In cases in which trees had been planted on a large scale over several years the species were inevitably those that were easy for farmers to propagate by themselves, requiring little or no nursery care (e.g. Guanacaste and Alnus wilsonii).
3. In small farms, the initial reforestation for tree planting was not usually commercial. Trees were planted for self-sufficiency in wood products, or benefits to crops and livestock, or for aesthetic reasons. Interest in sale of tree products among smallholders tended to emerge only after the first few years had brought some marketable products. This contrasts with the larger landholders who tended to have commercial motives for tree planting from the start (e.g. Klamydia 1984).
4. Harmonious integration of trees with agricultural practices was strongly favoured by small-scale farmers. On smallholdings dedicated to crops or intercropping, trees were usually planted in association with crops and pastures (shade trees, live fences, windbreaks) and rarely as blocks. In contrast to this, larger-scale farmers in extensive grazing areas seemed to prefer block plantings. Whenever block planting occurred, however, tree maintenance and growing technology were often interrelated with other tree management strategies.
5. In order to avoid novel tree planting practices and smaller-scale farmers were traditionally less interested in extensive farm services and more likely to continue on their own.
6. In most instances of successful tree planting, some respected and progressive individual had adopted the practice and then others followed the example. This individual was usually one of the better-off farmers with larger than average holdings. An unsuitable social reality is that it was usually not possible to launch tree planting with the prevailing short-termism of the local farmers. At least they joined in later.
7. During the initial stages of successful tree planting projects the trees were usually available to farmers free of cost or at low prices.
8. The successful cases of tree planting received little or no material incentives beyond local seed planting material. Excessive subsidies tended to be abused or to divert projects towards beneficiaries who were not likely to continue tree planting after the subsidies ceased. Judicious and flexible use of small, temporary subsidies, especially those calculated on a piece-work basis, tended to accelerate tree planting.
9. Long-term security of land and tenure was a prerequisite for tree planting. Farmers doubt about ownership and rights to disposal of trees, free from bureaucratic constraints, are always obstacles to tree planting.
10. Start-up of tree planting was invariably slow and difficult. Initial acceptance of tree planting usually required systematic extension over at least two planting seasons, many more years were required for tree planting to become self-sustaining.

Having said that telling people make their own choices is a necessary condition for project success, it must also be said that this will not always be a sufficient condition. Locally familiar uses of trees and the simpler tree management and maintenance practices will not suffer much from the lack of external inputs, but a range of technically and economically feasible but unfamiliar or more complex forestsy practices may go untried without the catalytic activation of smallholders.

Recognition of the value of indigenous knowledge and dedication to participatory principles must not prevent us from facing facts. Many rural communities are in serious trouble due to unsuitable land use practices. While new land use systems that are based on and integrated with local experts and traditional land use practices, without destruction of new ideas and plant materials, many local communities have improved. The archaeological record is filled with extinct cultures that failed to meet the adaptive challenges posed by changing environments. To minimize the hazards faced by rural communities in the name of sensitivity to local traditions is a cruel and misguided form of diastemam.

A participative process was the foundation of the successful tree planting projects. It is an advantage to adopt the following hypotheses that will assist in catalyzing the administration and application. Three strategies must be practiced jointly: 1) a project must be catalyzed by providing relevant alternatives that can be met by easily adoptable practices. All project activities must be designed to help the rural poor using local skills and resources. Failure to implement this common-sense strategy is the most destructive and at the same time the most easily avoided model; 2) catalyze development by presenting relevant alternatives. It represents only the middle part of the following three-pronged strategy

Appendix B.7, C.2, C.3

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Matching technologies to users

Appendix B.7 presents an overview of the technology repertoire, followed in appendices C.2 and C.3 by some mutually reinforcing perspectives on "what fits where." Any and all of the suggested ways of matching technologies to users can be used to identify "candidate technologies" for further consideration. Ultimately, of course, validation and adaptation of the technology will be carried out by the intended users.

Matching trees to technologies

Once a particular tree growing practice or technology has been identified as relevant to a particular user, the next step in the selection algorithm is to find trees with attributes that match the requirements of the selected technologies. This is facilitated by first writing a set of "tree specifications" to serve as a search frame for identification of appropriate species, provenances and cultivars. Appendix D contains a lengthy summary of indicative tree specifications for a selected set of tree-planting technologies that were derived from D&D exercises undertaken by ICRAF scientists in collaboration with national scientists in a wide range of land use systems in Africa, Asia and Latin America. They represent preliminary results of a larger on-going multidisciplinary work in progress and should not be treated as more than a collection of indicative examples of the kind of considerations involved in writing tree specifications for situation-specific variants of the selected technologies.

Following the derivation of tree specifications, the next step in the decision algorithm is to select trees which match the specifications. Given the very inadequate state of current knowledge on the design-related attributes of most trees, no attempt has been made to develop yet another list of tree species for tree planting projects.

While it is certainly important to provide reliable lists and sourcebooks on tree species for technologies within the expanded repertoire of the new forester, any attempt to arrive at an authoritative compendium at the present time is severely constrained by the lack of reliable knowledge. To put it bluntly, most of the people who know trees know them only from a limited disciplinary point of view (i.e., as foresters, or horticulturists, or range management specialists, etc.). Very few have given any systematic attention whatsoever to the attributes of trees within an open-ended agroforestry design framework. An exception to this generalization is the recent book by Rocheleau, Weber and Field-Juma (1989) which contains a design-oriented catalogue of agroforestry species for dryland farming conditions in Africa. Hopefully resource books of this type will become available for other regions in due course.

For the purposes of the present study, rather than attempt to develop yet another species list, it seems preferable to keep the emphasis on the logic of the discovery procedure and encourage tree planters to use this logic to make their own selections for local trial. In the final analysis there is no substitute for in-depth, site-specific trial and evaluation.