
Book Reviews - HEDGES FOR RESOURCE-POOR LAND USERS IN DEVELOPING COUNTRIES

HEDGES FOR RESOURCE-POOR LAND USERS IN DEVELOPING

COUNTRIES. When we offered our small Technical Note on living fences in EDN 32-8 I asked whether anyone knew of a well-illustrated and carefully written book on the subject of living fences. Jörg Henninger in Paraguay told us about this book. He wrote, "Its 256 pages give orientation about techniques for establishing and management of hedgerows, uses and functions, social and economic issues and a list of species applicable. It has about 57 tables and 92 figures. I love this book because it is by far the most complete one I know."

Now that I have the book, I can understand his enthusiasm. The book is exceptionally thorough, perhaps to a fault. (My personal preference is for a "get to the point" briefer style of writing.) I have selected a few highlights to give you a flavor for the book, and because the information itself is worthy of a note in EDN.

"Lac production on hedges can be an incentive for soil conservation." Shellac is made from the resinous secretion by the lac insects. Several hedge species are listed, including acacias and pigeon pea *Cajanus cajan*. "In Thailand lac lice raised on pigeon peas planted on contour bunds for erosion control has been promoted by one project. Loss of cropping area to the hedge row can be more than compensated by selling of stick lac and pigeon peas."

For many farmers the only option is a stockproof hedge without barbed wire. Such a hedge should be low-growing, sturdy, multi-stemmed from the base (or low branching), dense branching with rigid or entangling branches and a spreading crown, small, sparsely distributed leaves that cast little shade, have spines, prickles or thorns, be resistant to fire, trampling and browsing; require little upkeep; be capable of regeneration if damaged. Not many plants meet these characteristics. So often a mixture of plants are used to fill in the gaps and strengthen the barrier. The following categories can be distinguished: framework plants, fillers, and entanglers. Four pages with 15 tables list trees and shrubs (names only) with high potential for: food, forage, fuelwood, timber, soil conservation, ornamentals, fillers, irritants, entanglers, fence reinforcers, garden hedge, windbreak hedge, general security hedge, live fence post, tropical highlands, humid tropics, arid & semi-arid tropics.

The weakness of the book, for development workers, is that you can read a great deal and still not have much of an idea as to what to do locally. I found the four brief case studies especially relevant, and wish there had been 400. Two case studies are summarized next.

Villagers in Huanca, Peru (3600 meters, temperate cold, 600 mm rainfall) developed this system after natural vegetation disappeared. Small fields are surrounded by a living fence of Cassia. Annual crops are grown followed by a fallow period in which animals graze in the fields. Just before planting the trees are coppiced, leaves used for mulch and wood dried for firewood. The Cassia has been growing 4 years and the cycle starts again. A study showed that Cassia (planted 1.5 m apart in the fence row) makes an average family self-sufficient in their annual fuel requirement.

In arid watersheds, many flood plain farming communities have disappeared or shrunk because the land bases have been destroyed by flood. In contrast farmers in the upper Rio San Miguel have maintained a fairly stable agroecosystem. Use of living fences is a key reason.

Living fences are planted along the margins of the riverbank. Farming takes place on the floodplain. Flood water carries a heavy load of top soil from overgrazed rangeland upstream. As the flood begins to overflow into the space between the fencerows and the edge of the cultivated area, the force of the water is broken by the trees and by brush that is deliberately thrown in around their bases. (The brush also helps keep cattle out). The sediment load of the less rapidly moving water settles out behind the trees, fertilizing the fields. The fences also retard erosion and cutting of new channels. Eventually enough alluvium is accumulated behind the fencerows that cultivation can be extended right up to the row of trees [elevation is increased].

To make hedgerows, cuttings are taken from Populus fremontii (a cotton wood tree) and Salix gooddingii (a willow). Brush from various local species is woven between these vertical posts. Cuttings (3-4 m) are trimmed from all branches and leaves and planted in trenches (1.5x0.5x0.5 m) at a planting distance of 0.5-0.75 m. One cottonwood is planted 41 between a dozen willows. Mature trees in older fencerows are pruned so that the trunk is about 2 meters.

The book is published by the GTZ, which will often send a book at no charge to a non-profit development group working in the Third World. You might write on official letterhead and see if you qualify. The address is GTZ; Dag-Hammarskjöld-Weg 1 + 2; D-3236 Eschborn; Germany. DO NOT WRITE to ECHO for the book. If you only want the four pages of tables, ECHO can send a photocopy. Ask for the hedgerow tables mentioned in EDN-41.