

Symposium 4: Agroforestry Systems in Africa

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Summary:

The three papers presented in the symposium were results of ICRAF's research and outreach activities in southern and eastern Africa.

Fertilizer trees and fodder shrubs have proven benefits to the environment and rural people. Research has shown the viability of these systems to reverse land degradation, improve production, and increase incomes. Hundreds of thousands of poor African farmers, both men and women benefited from adopting these technologies through savings from purchase of inorganic fertilizers and fodder or dairy meal and overall increases in agricultural outputs. In addition, non-food benefits and environmental services and social benefits are observed. In Malawi and Zambia, farmers with fertilizer trees in maize fields are capable of ensuring household food security—according to scientists, increase yield due to fertilizer trees is equivalent to 54-114 additional person days of maize consumption, capable of reducing hunger period by 2-3 months per household. On the other hand, using fodder shrubs (e.g., *calliandra calothyrsus*) has multi-dimensional impacts including, improved animal production, improved dairy, income and livelihoods, and community and women empowerment. Almost a quarter million farmers that adopted fodder trees in Kenya, Uganda, Rwanda and northern Tanzania have been organized in over 224 organizations, with support from various organizations in the area. As a result, milk production, increased dramatically bringing household incomes by about \$122 a year. This results to economic prosperity where farmers are able to pay school fees, procure other farm inputs and domestic needs, and build better houses.

Women involvement in agroforestry has been remarkable, especially in fodder tree and dairy production activities. However, women are not necessarily unburdened, with discrepancy between the work done and direct economic benefits, this is because, except in female-headed families, African women are not financial managers—they don't hold the purse, and bank accounts are usually owned by men. Women participation in group activities, has however led to some degree of liberation from community norms and binding traditions that limit their involvement, access to resources and services, etc. However, some negative impacts were observed with women involvement and liberation, in that, it could be disempowering the men. Women were concerned that their husbands are becoming irresponsible or dependent on them, as a result.

Highlights

1. Research has shown the technical and economic and social viability of fodder shrubs and fertilizer trees.
2. Fodder shrubs and fertilizer trees have proven potential for increasing yields and income, and providing many non-food, non-economic, and social benefits.
3. These have been practiced widely by poor farmers, both men and women in southern and eastern Africa.
4. Fertilizer trees add substantial amounts of nutrient contributions from tree biomass, reducing the requirement for mineral N fertilizer by 75%, translating to substantial savings on mineral fertilizer imports.
5. Increases in yields due to fertilizer trees is equivalent to 54-114 additional person days of maize consumption, capable of reducing hunger period by 2-3 months per household.
6. Fertilizer trees also provide non-food benefits to households and enhance environmental services have.
7. Hundreds of thousands of smallholder farmers have been testing and adopting fertilizer trees.
8. Over 13USD m increased in farmer income per year. (total? Or per farmer?).
9. Group membership is important.
10. The nature and complexity of the technology is a key factor to adoption.
11. Women empowerment is disempowering women.... Gender is both men and women.
12. Scaling up these technologies is not duplication or replication, but adaptation and creating the conditions that make these technologies work in new areas.

What needs to be done?

- Germplasm supply and policy support.
- Sensitizing farmers on multiple benefits.

- Study different types of farmer adoption, under what conditions? What context?
- Study gender roles in agriculture.
- Gender is about men and women—not just women. This has implications in research and development designs and implementation