



Hans H. Ruthenberg-Graduierten-Förderpreis 2012/

Hans H. Ruthenberg Award for Graduates 2012

Reginald Tang Guuroh “Contribution of home gardens to household income generation in Burkina Faso (a case study of Bieha District)”

Technical University of Dresden, 2011

Supervisor: Prof. Dr. J. Pretzsch

Summary

Problem identification

Although homegardens have been widely researched in various parts of the world, there is lack of quantitative data about their benefits in Burkina Faso. Kumar and Nair (2004) points out that most reports on homegardens over the years have been from Asia while those from other homegarden-rich regions such as Central America and West Africa are far less in relation to the extent of the practice.

Productivity of farms in southern Burkina Faso has been decreasing as a result of reduced soil fertility coupled with unfavourable environmental factors such as low and erratic rainfall patterns (Kazianga and Masters, 2001). In the past, with low population pressures, it was common for farmers to shift from a cultivated land to an uncultivated land before serious loss of fertility on the first land and this allowed the field to replenish its fertility under natural conditions. However, with rapid population growth over the years, fallow periods have shortened resulting in soil depletion and problem of food insecurity thus making people poorer. Another reason for reduced fallow periods and low soil fertility in Southern Burkina Faso is migration of people from the relatively drier Northern parts of the country to the South either for farming, grazing of animals or both. Under these conditions, fertilizers and irrigation schemes are required to improve farm yields but most rural farmers are too poor to afford such interventions in large enough quantities on entire farms. These can however be provided on homegardens which are usually smaller in size and also close to the house compound. Similarly, enough organic manure may be available from animal droppings which can be used to improve soil fertility and thus result in improved yields from these gardens. However, homegardens can sometimes be as large as farms, and it may be impossible to provide external inputs for the entire area under cultivation but due to proximity of these systems to the home, it is easier to provide inputs such as manure at least for some parts as compared to farms.

Homegardens serve as additional source of food and income for farmers but not much is known about the respective contribution of homegardens in Burkina Faso as they have not

drawn the kind of attention they merit from scientists. This research was to contribute to better understanding of the structure, composition and functions of homegardens in Burkina Faso. It was also conducted to provide information on the contribution of homegardens to rural household incomes.

Objectives of research

1. To explore the relationship between farm size and homegarden size.
2. To investigate the relationship between homegarden size and composition of crops, trees and livestock in homegardens.
3. To identify the effect of homegarden size on the inputs and outputs of homegardens per unit area of land.
4. To assess the contribution of homegardens to household income generation.

Methodological approach

Selection of study site

The Sissili province was purposively selected for this study based on a number of criteria. The first criterion used was the extent of home gardening in the area. Consultations and preliminary research showed that home gardening was common in the province but little research had been conducted on them. The second criterion was access and proximity of the study location. This province is both close to and easily accessible from Ghana making the work easier for the researchers.

The Bieha department was also purposively selected upon consultations with the various officials in the Sissili province (political administrators, agriculture department officers, and the forestry officers). The guiding words for selecting the department were; practice of home gardening and ease of access. Within the Bieha department, the study was conducted in Prata which is some 14 km east of Bieha Township. The criteria that were used in selecting the study site include;

location in a rural area, typical homegarden representation of the district, and ease of access even during the rainy season. In addition, for ease of data collection, the study location was selected so that the local language could be spoken by the research assistants (interpreters).

Data collection approach and sampling frame

Data was collected between March and May 2011. The study made use of a combination of qualitative and quantitative research methods for gathering relevant data. Rapid Rural Appraisal tools (review of secondary data, observation, focus group discussion and key informant interview) were used to generate initial information about trends and status of homegardens in the area. Information was collected from both primary and secondary sources. Quantitative data was generated by the use of household survey (questionnaire) and field survey (conducted in each homegarden). Twenty (20) key informants were interviewed and five (5) focus group discussions were held. Information from these two sources helped to validate the data collected through household questionnaires.

A Systematic Random Sampling technique was adopted for drawing the study sample. A list of all the households in Prata was obtained from the department administrative office and numbers were assigned to all households. To avoid bias and ensure that a truly representative sample was obtained, the first household was randomly selected following which every other household on the list was also selected. Out of a total of 199 households, eighty (80) households were sampled for the survey. In the event that one sampled household was not willing to respond to the questions, a new household was selected from the remaining households using random sampling principles.

The farm size of each sampled household was measured. Similarly, the homegarden size of

each sampled household was measured and were subsequently divided into three categories - small (0.1-1.5ha), medium (1.6-3ha) and commercial (>3ha) - based on size. Data was collected on the composition of animals, trees/woody plants, and crops present in the sampled homegardens. Each sampled household was asked to mention all their sources of income per year. For homegardens and farms, respondents were asked to disclose the quantity of each crop that they harvested in the year (in bowls or bags) and also the estimated market prices per unit quantity of each product. The income from other homegarden products such as livestock products were also quantified in monetary terms. A market survey was conducted to help validate prices of products reported by households. The income generated from all possible sources per year was estimated and the total annual income generated was then calculated. The contribution of homegardens to the total annual income was calculated as percentages. The labor inputs and outputs per unit area of the various categories of homegardens were also estimated.

Results

The results from this study are summarized as follows:

- It was found that a greater number of households (34, representing 43% of the 80 HHs) cultivate homegardens that fall within the small category.
- Seventy-nine percent (79%) of farmers reported that they would like to increase their homegarden sizes but are limited by land shortage.
- Households in the area have three main sources of income generation - farms, homegardens and businesses of which farms and homegardens are far more important than businesses in terms of the percent of income generated.
- Sale of homegarden products was found to be common among the respondents with 82% of surveyed households selling some of their products yearly.
- Only 30 percent of the surveyed households were found to earn some income from businesses but usually this forms only a small percent of the total income.
- Percent of income from homegarden increases as homegarden size increases and a similar trend was found for income from farms.
- On the average, homegardens contribute over 50 percent of household annual income and were found to be of greater value than farms for all size categories.
- There is a weak non-significant correlation between size of homegardens and size of farms. However, as homegarden sizes increase, farm sizes decrease gradually.
- There is a strong significant positive correlation between number of crop species in homegardens and the total value of the homegardens. As the number of species increases, the value of the homegarden also increases.
- The use of external inputs such as manure and fertilizer is a common practice in the study area. The use of such inputs was found to be higher in commercial homegardens followed by medium and small homegardens.
- There is a significantly positive correlation between homegarden size and inputs/outputs per hectare.
- In terms of input per hectare, the small homegardens had highest followed by medium which was also higher than commercial homegardens and for output per hectare, the small homegardens had the highest followed by commercial and then medium.
- The most commonly cultivated crops are cereals, peas, vegetables and to a lesser extent root crops.

- Commercial homegardens grew more cereals especially maize since this is a staple food crop and can easily be sold. Also, it can be stored for long especially till prices shoot up in the market.
- Livestock is a major component of the homegardens of the area and has been found to be of more financial value than the crop component. The animals commonly found are, cattle, donkey, sheep, goat, fowls, guinea fowls, ducks and pigs.
- Trees are being managed as an important component of homegardens. Farmers plant some trees as well as protect some natural trees which they have identified to be of use to them. Tree growing is however not very attractive to farmers because they take a long time to mature.
- There is a positive significant correlation between homegarden size and number of crop species.
- There is no correlation between size of homegardens and number of trees/animal species found.