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INCORPORATING WOMEN INTO AGRICULTURAL DEVELOPMENT PLANNING: A METHODOLOGY

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Introduction

Declining per capita food production in many areas of Sub-Saharan Africa during the past two decades has led to a closer examination of traditional farming systems and of the factors that may be impeding efforts to improve agricultural productivity. One factor which is receiving increased attention on a theoretical level is gender role differences in the farming household and their effects on the allocation of household resources. On an operational level, however, few development projects explicitly take this factor into consideration. Instead, projects whose objectives include increasing farm productivity and income are designed using the aggregated labour and income resources of the total farming household as a basis for analysis, and assuming a corporate household entity to be the decisionmaker in the allocation of household resources.

The purpose of this paper is to provide a methodology that incorporates gender differences in the farm household into development project planning. The paper provides a quantitative comparison between a development project using a conventional planning methodology based on the aggregated farm household and a planning methodology in which project impacts are disaggregated by sex.

Specifically, the study focuses on gender role differences relating to labour, income, and financial obligations among one ethnic group in central Nigeria--the Tiv--and the implications of these differences with respect to the ability and incentive of each sex to adopt technologies introduced by an agricultural development project.

The study uses data from the planning documents of an actual project in Nigeria. The project is an integrated agricultural development scheme aimed at increasing production of nine major crops. It includes a basic technological package of improved inputs and new or improved cultivation methods. It also develops a variety of other services such as training, extension, and water, road, and forestry development.

The project bases its analysis of project outcomes on a hypothetical 2.5 hectare farm on which a combination of early, full season, and late crops are grown. That farm represents the aggregated labour and income of household members. The project assumes perfect substitutability of labour within the household, and shared farm income as an incentive, and does not differentiate between sources of income.

In our analysis, ethnographic information on sex roles in the farm household is used to disaggregate the intended impact of the project on the labour and income of this hypothetical total farm into the impact on each sex in order to test two hypotheses:

1. The amount and seasonality of male and female labour requirements are affected differently by project interventions because of their different labour roles.
2. Men's and women's income levels and income earning opportunities are affected differently by project interventions because of their different sources of income and different household expenditure responsibilities.

Our analysis concludes that sex role differences may result in different responses to production technologies because of the different constraints and incentives of each sex. These sex role differences may cause development projects to have

unintended effects or to face constraints not anticipated by conventional project analysis based on the total farm. Thus, projects may fail to reach their objectives.

Method of Analysis

The farming systems research approach is useful in understanding the operations of the small farm within its wider context. It takes a holistic view of the entire farm, entire rural household, and their natural and human environment. The objective of the methodology is to understand the farm as an integrated production and consumption unit and to understand the constraints and flexibilities of the farmers as they try to reach their goals. In this study, the farming systems methodology is used to understand both the internal operations of the farm household in the project area and the influences of the farm's environment (such as national agricultural policies) in order to analyze how women and men are affected differently by the project.

Using this approach, we develop a schematic framework that identifies variables which influence the project intervention process. These variables include: (1) factors exogenous to the project such as the physical environment, national policies, cultural norms, and community structures; (2) project related factors including project organization and administration, services, and new technologies; and (3) factors relating to the structure and functioning of the household, particularly gender role differences in labour, income, and financial responsibilities. All of these factors have a role in determining the structure and functioning of the household and the way the household and the project interventions interact. The differentiation of female and male roles throughout this framework enables us to disaggregate the project's intended impact on the total farm into separate gender impacts in terms of labour requirements and income, and to suggest other implications of gender role differences for the project.

Analysis

The Tiv are engaged in subsistence farming in the savannah lands of central Nigeria. Farming is undertaken almost entirely by hand and there is a limited availability of hired labour. Labour roles within the Tiv farming households are sharply differentiated by gender, and few tasks are performed by both women and men. They do, however, usually perform complementary tasks on the same crop. For example, preparation of rice fields involves hand weeding by women and construction of trenches and ridges by men. Tiv women have a dominant labour role in production of food crops, of which the most important in this region are yams, sorghum, cowpeas, and maize. Men provide more labour on millet and melons which are important as both food and cash crops.

In general, the Tiv's labour input into a crop is related to control over the crop's disposition. In turn, this disposition is linked to different sources of income. Income includes not only monetary compensation but also direct exchange of goods and services. Among the Tiv, as in other semi-subsistence economies, there are sharp intrahousehold divisions of income and financial obligations. Within-household exchange is common as payment for specific tasks.

The analysis of differential project impacts was carried out by disaggregating the female and male labour and income components of the typical total farm on which the development project based its analysis.

On the total farm, the project expects annual labour requirements to increase by 14 percent. Much of this labour increase is concentrated in harvest, post-harvest, and storage activities since the project increases the volume of production by increasing yields rather than increasing acreage. Since Tiv women

have the major role in harvest, post-harvest, and storage activities, they carry a disproportionate share of the farms' increased labour requirements. Their annual labour requirement increases by 17 percent, compared to a 6-percent increase for men.

Just as important as changes in total labour requirements are changes in the seasonality of labour requirements. Because women and men have different labour roles, their farm labour profiles (labour requirements for each month of the year) may differ from one another's and from that of the total farm. Consequently, labour bottlenecks may appear at different times for each gender, indicating different patterns of flexibility and constraints in female and male labour availability.

Recognizing that labour scarcity at peak times is a critical constraint to increased production in this area, the project tries to introduce new cultivation practices in such a way that labour requirements during peak periods are slightly decreased and labour increases occur during nonpeak months. However, the disproportionate increase in women's tasks results in a major shift in the women's labour profile, creating an entirely new peak labour period for Tiv women during the latter months of the year. While the project decreases their labour requirements slightly during peak labour periods, it increases their labour during the major harvesting, post-harvest, and storage months by 35 to 50 percent. Men's labour profile, in contrast, shifts only slightly and in general follows the favourable shift anticipated by the project on the basis of the total farm.

In the absence of data on actual farm incomes and expenditures, the project estimates monetary benefits to farmers from single crop budgets which include net returns to land and labour. The project anticipates that the net returns to labour of the total farm from crops improved by the project will increase by 31 percent. Disaggregating from the total household, our analysis finds that women's net returns are also expected to increase by 31 percent while men's will increase by 28 percent. The changes in total earnings, however, mask some important asymmetries between increased labour and increased income for each gender on some crops. In general, women are expected to increase their labour significantly on crops from which men will derive income during periods in which labour on their own crops is critical. Similarly, men are expected to increase significantly their labour on women's food crops. In addition, the actual cash component of net returns is smaller for women (who control subsistence crops) than for men (who control cash crops).

Incorporating other information on the Tiv farm household in its wider context in addition to the crop data considered by the project indicates that some of the increased labour requirements of the project may conflict with other activities in the farm household such as cultivation of nonproject crops, cooking, and child care.

Implications and Conclusions

Because of the gender role differences in the Tiv farm household, a development project cannot assume pooled family labour as a resource or shared family income as an incentive for the adoption of the project technologies. The different roles of each gender cause them to have different constraints and flexibilities and cause the project to affect their labour and income differently. The implications of gender role differences for this project are:

1. Women's labour increased disproportionately to men's. The large annual increase and poor seasonal distribution of their new labour requirements give them less ability and incentive than men to adopt project technologies.

2. While both genders in this project area have the potential for increased incomes from cash crops, increased labour requirements are not always associated with increased income from that crop.
3. In addition to gender roles on project crops, gender roles in other household activities such as water hauling, cooking, and production and processing of nonproject crops influence women's and men's ability and incentive to adopt project technologies.
4. Nonfinancial incentives such as women's responsibilities for family nutrition also play a crucial role in determining if and to what extent new technologies are adopted by members of the farm household.

There are several general and specific changes that could be made that would make the project's design more responsive to within-household divisions of the Tiv. These are:

1. Recognize explicitly the central role of Tiv women in production of many of the project's crops, and the important differences in female and male roles in the farm household that can cause them to respond differently to project interventions.
2. Emphasize increased productivity in women's processing and storage activities--tasks for which labour is increased most by the project.
3. Direct extension services to both female and male farmers. In particular, direct extension services to the appropriate gender, and provide extension services for processing and storage as well as for production.
4. Relate the project's development support activities in roads, forestry, and water supply not only to production of project crops, but also to nonproject activities such as fuelwood gathering and water hauling that may be competing for household labour.
5. Establish monitoring and evaluation mechanisms that assess not only the total farm's performance but also assess changes in the labour and income of household members, so that important relationships between gender roles within the household and project outcomes can be recognized and dealt with.

It is in the context of the current food and agricultural situation in Sub-Saharan Africa that more detailed farm level analysis and empirical investigation are so urgently needed. Problems of stagnant or declining agricultural productivity cannot be dealt with only at the macro level. Agricultural development projects can provide a more localized focus for a country's development efforts. But if the purpose of those projects is to improve the productivity and incomes of smallholder farmers, then planners will need to better understand the internal structure and processes of the farm household. A critical aspect of this understanding is the sharply differentiated roles and responsibilities of women and men. Gender differences alter the resources and constraints of the farm household from that assumed by conventional planning, and they result in different abilities and incentives of each gender to adopt project technologies. The key issue is productivity, and it will not be adequately dealt with until programmes and projects become more responsive to both female and male farmers.

Note

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