

Intra-Household Dynamics and Farming Systems Research and Extension
Conceptual Framework

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Introduction:

A. The purpose of this conceptual framework is to provide a means by which farming systems research and extension personnel can seek and organize information on the intra- and inter-household aspects of farming systems and apply that to the design of improved technology for agricultural and livestock systems. It attempts to cover the information necessary to the original modeling of a farming system and the process by which information is gathered and applied throughout the lifetime of research and extension in a given area.

This framework grew out of substantial discussions of the Advisory Committee to the Intra-Household Dynamics and Farming Systems Case Studies Project.(1) It provides a means by which trainees can organize and analyze data in the case studies and use it in designing subsequent stages of a project. It builds on pioneer work in conceptualizing gender roles and providing a framework for their analysis done by four scholars at the Harvard Institute of International Development and presented in their book of case studies, Gender Roles in Development Projects(2) and on work done by Alice Carloni(3) in evaluating the roles of women in agricultural projects.

B. There are two basic arguments underlying this framework:

1. That intra- and inter-household variables are embedded in farming systems and will have an effect on and be affected by changes

in these systems. We know that in every society men and women do different things and that these differences are often deeply embedded in social and cultural norms. We also know that in many cases, despite the persistence of the expressed norms, the roles are in flux. The task is to observe and record these variables and use that data as part of the analysis leading to the design of new technologies and experiments intended to improve farm production. Knowledge of gender and age roles or other intra-household variables enriches an understanding of the constraints and incentives inherent in farm management decision-making and therefore will contribute to improved research. Experimental modifications will be better targeted towards production constraints and opportunities, and ultimately receive wider acceptance.

2. That FSR/E is an iterative process, one which explicitly calls for continuous assessment and redesign. And it is not linear, there are overlapping cycles of activity; research and extension go on simultaneously. This means there must be a continuous flow of knowledge, including most importantly, the views of the farmers (men and women) whose system(s) will be affected. Because participation and continuous evaluation and adaptation are key, the framework for looking at intra-household variables must take into account the requirements at different stages of the project, recognizing that the stages themselves overlap. In this framework we cut the process into four segments: (1) diagnostic, (2) design, (3) testing and evaluation, and (4) adaptation, recommendation, and dissemination.

C. Intra-household Dynamics, Intra-household variables: what are they?

1. In the first instance these mean information on activities, i.e. task and time allocation and access and control of resources disaggregated by gender and age and often by rank or position in the household, and an understanding of how tightly or flexibly such distinctions are maintained.

2. They also refer to the existence of different kinds of 'household' organization which may vary according to time (phases in the developmental cycle) or other factors (female headed households, de facto, de jure; polygamous families; etc). These household types may themselves be appropriate recommendation domains if relatively homogeneous with respect to farm management systems and production constraints.

3. The inclusion of inter-household variables refers to the fact that in many communities networks of relationships of households or of members of households to other units are at least as, and often more, important than that within households, particularly in receiving or being obligated to the sharing of resources. Examples are kin groups or community groups. It also draws attention to the fact that class may affect the distribution of resources within a household.

The Framework:

There are five areas of knowledge important to farming systems research and extension to which a consideration of intra-household dynamics can make a contribution. To understand a farming system and farm management decisions, one needs to know about labor, non-labor resources, and incentives. This is the data upon which models of

farming systems are based. To understand farmers' views of their system and of experiments carried on with their cooperation, farmers are included at each stage. It is important to understand the degree to which women and men are included at each stage and the mechanisms for their inclusion. Finally, one needs to know 'so what', i.e. the results of the experiments and which variables were important to dealing with particular constraints. The first four categories correspond directly to the requirements of farming systems research; the last to the need of particular projects and the field in general to learn more about the importance of these variables to improving agricultural research.

For this framework we can use a matrix, Figure 1, attached. Across the horizontal axis are four stages of farming systems research and extension: (1) diagnosis--the collection of information about a farming system in order to determine appropriate recommendation or research domains, to describe their farming systems and constraints, and to determine research priorities; (2) design--the designation of research priorities and the means for undertaking the research on the basis of evidence gathered during the diagnosis, and predictions about the affects of changes on constraints and other variables. Are the assumptions underlying these predictions empirically grounded? or the subject of verification during trials?; (3) testing and evaluation--the implementation of on-farm trials and monitoring and analysis of results; (4) recommendation, adaptation, and dissemination--the conclusions drawn from (a series of) on-farm trials including a determination of the success of a given technology, the grounds upon which its success or lack of success is measured, its affects on other

areas of the farming system; suggestions concerning further adaptation, and the recommendations concerning its dissemination including to whom and the means by which information will be directed.

Down the vertical axis are the five categories of information listed above: labor, non-labor resources, incentives, inclusion and results. It is the argument of this set of case studies that in some or all of the boxes formed by this matrix, an explicit concern for gender or other intra-household variables is warranted. At a minimum data should be disaggregated by gender and age, and possibly by position in the household and 'type of household' and class. Questions associated with each 'box' are suggested below.

1. Activities; labor allocation:

In this section we are concerned with who does what. What tasks are undertaken by men and women which relate to farm production? to household production? to other productive enterprises including off-farm wage labor? How much time is involved with each task? Are there seasonal patterns? Does this vary with age or rank or position in the household? One should also note the location of the task as, especially for women with small children or where there are cultural limits on the mobility of women, location often influences whether or not a woman may carry out a task.

(a) diagnostic What are the activities (task and time allocation) of members of the households by gender and age which contribute to agricultural/livestock production? What time is allocated to other activities, including household production and off-farm enterprises or wage labor? Is there cross-household labor mobilization as for work

parties? Is availability of labor for particular activities a constraint on current production?

(b) design What changes in labor allocation are associated with/are desirable from technological improvements being tested? Whose labor is affected? Will there be increases or decreases in wage or exchange labor requirements and who will be affected?

(c) testing and evaluation What changes in labor allocation, in time or task, are actually associated with on-farm experiments? Do these contribute to or detract from increases in productivity or income for this enterprise? for other enterprises including household production? Do they fit what was predicted in the design?

(d) adaptations, recommendations, and dissemination: Have the changes in labor allocation (time and/or task, location, by men, women, children) related to the new technology been taken into account in determining its success? or in further adaptations? Is the new information required in learning about this technology being directed to those who are doing the work?

2. Access & control of non-labor resources:

Farm management decisions are influenced or determined by the availability of and access and control of resources. Such resources including land (and the terms on which it is available); capital, including tools and livestock for production or traction; inputs, including seed, purchased or in-kind fertilizers, pesticides, etc.; cash for purchased inputs or labor; and knowledge. ^{They} ~~It~~ may also include access to markets which in turn may be influenced by mobility. While a distinction has been drawn between labor and non-labor

resources, it is important to look for instances where the use of one provides access to the other such as giving of labor in exchange for use of land.

(a) diagnostic What are the resources required for existing production practices? Who (men, women, children, position in household, or which households) has access to and/or control of these resources? Are they affected by exchange relationships? Are the absence of particular resources a constraint on current production? for particular categories of farmers? What are the income and expenditure streams for men and women including sources, uses, and timing?

(b) design What change in kind or amount of resources will be required by each of the technological improvements being tested? Who has access to or control over these resources? Are technologies being tested which address resource 'gaps' of particular categories of people? Will the value of factors of production be affected by proposed changes.

(c) testing and evaluation How and to whom have new resources been supplied? Who has/has not used them? What networks of relationship or exchange have been used to garner any additional resources needed? Can further constraints in access to resources by particular groups be identified as a result of the testing?

(d) adaptation, recommendations, and dissemination: Has the access or control of resources necessary to the acceptance of new technologies been taken into account in determining its success? Are new or modified systems required to insure access to (new) resources for particular categories of farmers?

3. Incentives:

What motivates people's decisions about the allocation of labor and other resources to farm production, home production, and alternative uses? What incentives are there to change present allocations? Who benefits? What additional reasons are there? This may include increases in yields or income, reduction of risk, reduced labor demands, prestige, obligations to family or other groups, questions of taste, nutrition, marketability of particular crops. Are the incentives internal or external to the system?

(a) diagnostic Who (gender, age, position in household) benefits from the output of current production of each enterprise in terms of subsistence, income from sales, or other uses? Are there obligations associated with the output of particular production enterprises? What are the desirable improvements from the point of view of men, women, children? (yields, increased resistance to particular environmental characteristics, reduced labor requirements, taste, nutrition, marketability?) What non-agricultural enterprises are a source of income or other benefits to household members and how do they compare (profitability, reliability, seasonality) with farm production enterprises?

(b) design Will the technological improvements lead to changes in the uses of the product and thus in the nature or locus of benefits? What are the incentives for men, for women, in contributing additional time or resources necessary for improvements? or for changing varieties or practices? What tradeoffs may have to be made?

(c) testing and evaluation What incentives/disincentives are there for farmers (men and women) to modify practices concerning the

enterprise in question? What incentives/disincentives are associated with the particular modifications being tested? Are there incentives or disincentives associated with being a cooperating farmer? How do the technologies being tested affect individual income streams?

(d) adaptation, recommendations, and dissemination: Are there outlets for increases in production through increased consumption, adequate storage, or markets? Are these outlets equally accessible for all farmers?

4. Inclusion

Farmers are central to FSR/E. This category of information is designed to get at the degree to which both men and women are included in the kinds of information gathered (some of which is covered above), as sources of information, and as actors and beneficiaries. It is also used to describe the mechanisms by which men and women were included at each stage: random or targeted interviews? as interviewers? as collaborating farmers? etc.

(a) diagnosis Have government or non-government services which have field workers with particular access to women (e.g. home economics, community development, primary health centers) been included in the collecting of information during initial and subsequent surveys? in designating areas of concern? Have women as well as men been included in formal or informal interviewing in each 'household', in the community at large?

(b) design Are women as well as men included in determining research priorities and in the overall design of on-farm research? Is the design explicit in how the views of all household members are to

be included in assessing new technologies and on-farm trials? Are special efforts to be made to get the views of hard-to-reach farmers? (such as women with small children or whose mobility is otherwise limited?)

(c) testing and evaluation Are women as well as men included as cooperating farmers in on-farm research? For particular enterprises? fields? In the management of trials? in interviews evaluating the trials? Are there factors which inhibit the participation of particular categories of farmers?

(d) adaptation, recommendations, and dissemination Will the targeting and means used for dissemination encourage participation from all farmers? Will steps be taken to overcome barriers of some groups to receiving information on new practices or having access to new resources required?

5. Results

If the data listed above has been collected and mechanisms have been put in place to include both men and women, has it made a difference? Have technological improvements for production been developed? Are they widely accepted and used by farmers with improvements in their production? What effect did or does the consideration of gender or intra- or inter- household variables in the design of agricultural research have on the improvements in agricultural or livestock production? Specifically, in

(a) diagnosis How were intra- or inter-household variables specified? What determinants were taken into account? Were intra-household or gender variables difficult to collect? Was their

inclusion useful in understanding the farming system and its production constraints? What data was most useful? Were there questions which could have been included that would have provided useful information for the design?

(b) design What gender or intra-household variables were taken into account in design? Did they improve the choice of researchable topics and research priorities? Did they improve the design (fewer false starts)? Were there variables explicitly not included? What were the tradeoffs considered? Ultimately, was their exclusion important, positively or negatively, to the outcomes of the experiments?

(c) testing and evaluation How were intra-household or gender variables taken into account in testing and evaluation? In the fields used? in the choice of cooperating farmers? In ascertaining opinions on the technologies being tested? Did this add to the information on the usefulness (or not) of these technologies? Did this information lead to design changes and further testing?

(d) adaptation, recommendations, and dissemination Did adaptations or recommendations take into account the requirements of or effects on all members of a farming system for whom the enterprise in question is important? Were these variables taken into account in targeting and structuring the means of dissemination? Did this result in greater or lesser adoption by farmers? or particular categories of farmers?

Notes

(1) Members of the Advisory Committee are: Dr. H.C. Bittenbender, Kathleen Cloud, Dr. Frank Conklin, Nadine Horenstein, Katharine McKee, Dr. Rosalie Norem, Dr. David Nygaard, Dr. Pauline Peters, Dr. Federico Poey, Dr. Mary Rojas, Judith Bruce, ex officio, Dr. Susan Poats, ex officio, Dr. Cornelia Butler-Flora, ex officio, and Hilary S. Feldstein, Managing Editor.

(2) Catherine Overholt, Mary B. Anderson, Kathleen Cloud, and James E. Austin, Gender Roles in Development Projects, Kumarian Press, West Hartford, Connecticut, 1985

(3) Alice Carloni, Technical Report on Socio-Economic Constraints to Land and Water Development for Inland Valley Swampe in Sierra Leone, FAO/UNDP, (SIL/80/010), Rome, 1983; Integrating Women in Agricultural Projects: Case Studies of Ten FAO-Assisted Field Projects, FAO, Rome 1983; (Swaziland study).

13

FIGURE 1: CONCEPTUAL FRAMEWORK
 INTRA-HOUSEHOLD DYNAMICS AND FARMING SYSTEMS RESEARCH AND EXTENSION

STAGES FSR/E	I	II	III	IV
DATA	DIAGNOSIS	DESIGN	TESTING/EVALUATION	RECOMMENDATION
CATEGORIES				ADAPTATION, & DISSEMINATION
ACTIVITIES/LABOR Task & Time Allocation Location of Activity Paid/Unpaid				
RESOURCES ACCESS & CONTROL Land Capital: tools, livestock, etc. Inputs, Cash Knowledge				
INCENTIVES				
INCLUSION Degree Mechanisms				
SO WHAT? RESULTS				