

AEB 5167

**ECONOMIC ANALYSIS IN SMALL FARM
LIVELIHOOD SYSTEMS**

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ECONOMIC ANALYSIS IN SMALL FARM LIVELIHOOD SYSTEMS

Understanding the system is important for identifying problems.
It is even more important for shaping solutions.

Michael Collinson

Purpose and goals:

Most farms in tropical areas of the world are small scale, family operations and are *very diverse*, even within seemingly homogeneous communities. In industrialized countries as well, there are many family farms with similar characteristics. Even though these farms provide much, if not most of the livelihood for a family, they regularly generate significant amounts of occasional or planned commercial production as a source of cash. However, unlike a business or industrial farm, *the overriding concerns of these small-scale farmers are with sustaining the home and the family rather than with production for growth and profit*. Because this type of farm is *first a home* rather than first a business, there are many more limits and constraints imposed upon the men and women managers than there are with commercial operations in which the business is separate from the home. *Household composition* is an important factor that adds diversity to these farms even within otherwise relatively homogeneous communities. Among communities, differences in culture and social norms affect the roles men, women and children play in these livelihood systems and must also be taken into consideration in order to understand them.

These farms are small, but they often sustain more than half, and up to 90 percent, of the population in some countries. Although the *percent* of the total human population who live on these kinds of farms is declining, their *numbers* continue to increase. Because of this, these farms are home to perhaps one-third of the world's total population and they provide an important proportion of the total agricultural production in these countries. Worldwide, they feed, clothe and shelter the persons who live on them, and they produce significant quantities of surplus for sale to help feed urban populations. Also, they provide productive rural employment, helping to reduce the problems of burgeoning urbanization, as well as to moderate unemployment in both rural and urban areas.

Sustainable changes in the production systems of these farms, based on new policies, improved infrastructure, or the utilization of new or modified technology or management options, are important strategies for development in most countries. However, many such changes, whether technologies presented to these farmers or policies put into effect, are either *rejected* by them or have an *adverse or differential effect* on different households in a community. An *understanding of their livelihood systems* and careful analysis within the constraints of these systems is necessary to help change agents, infrastructure managers and policy makers understand, in anticipation, what changes would be relevant and favorable to this large segment of the population. Careful analysis will also help outsiders understand reasons for differential impacts among households within communities.

This course is designed to provide an understanding of the nature of limited resource family farms and to provide economic concepts and tools to rapidly and efficiently analyze policy, infrastructure, technology and management alternatives for them. Emphasis is on *coping with diversity* and the large number of constraints imposed on small family farms. Risk and uncertainty are considered, as are the relationships between risk, food security, and minimum acceptable standards of living. The course utilizes case studies as a basis for providing a true feeling of the nature of the constraints and the limits on improved income and welfare presented by national policies and public infrastructure as well as the family considerations inherent on these farms. Questions of sustainability are treated from individual farm, community, and societal perspectives. Importantly, ways to consider differential responses of different kinds of households, and to preserve diversity in livelihood strategies of these diverse households rather than basing conclusions on averages in economic analyses are incorporated.

The goals of the course, then, are to:

- 1) Understand the nature of small-scale, limited-resource, family-farm livelihood systems and especially the kinds of constraints imposed on these farms because they are a home and not just a business.
- 2) Comprehend how to explicitly incorporate reproduction as well as production activities and constraints when modeling and analyzing the livelihood strategies of individual farm households, and
- 3) Learn to use **ethnographic linear programming (ELP)** as a modeling tool to describe and simulate these livelihood systems to help understand them and then, when calibrated and validated, use the models to predict differential responses among households to new technologies, infrastructure and policies.

Glossary

Food security The state in which members of a household have access to a socially acceptable diet throughout the year from food produced, traded for or purchased. The diet may or may not meet FAO minimum nutritional levels and is expected to vary among households and livelihood systems.

Hearthhold Comprised of the persons who normally are physically present or reside in the domicile. Need not be related and may or may not be the same as the persons included in a household.

Household Comprises the persons who contribute to or receive something from the grouping of persons associated with a domicile. It differs from hearthhold because persons belonging to a household may not reside in the domicile.

Household composition The age, sex and relationship of persons comprising the household.

Household livelihood system The full range of activities *available* to the individuals in a household to contribute to its production and reproduction requirements to survive and thrive. These can include crop and livestock production, crafts, off-farm activities, remittances, etc.

Household livelihood strategies The specific activities selected by the members of a household from among those available in the livelihood system to meet production and reproduction requirements and other household goals.

Sustainable livelihood The strategies internally capable of providing a livelihood over time and without collapsing from external shocks confronting the system. Should exhibit resilience to adjust to new situations as external factors affect it.

Household goals The minimum or maximum levels of 1) resource use including family labor, 2) required cash expenditures, 3) household food consumption, and/or 4) cash reserves desired by the household, disaggregated by gender. One objective of the household after satisfying the basic goals is often considered to be to maximize the amount of cash available for discretionary spending.

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Course Grading: Two reports will be both written and presented orally in class:

- I. **Gender-disaggregated description of a family farm livelihood system** including a conceptual or schematic systems model showing interactions on the farm and off. The report should include an activities analysis and activities calendar, resource analysis and benefits/incentives analysis. Narrative should include a statement of farm family goals or objectives, possible alternatives for achievement of objectives, and obstacles or constraints that hinder progress. Factors that serve as a basis for developing evaluation criteria based on the above analyses and used to judge possible technological, policy, infrastructure or management changes should be discussed in the report. Also included should be a list of the available activities in the livelihood system and constraints to be included in the ELP model. **The written report will be 10% of the course grade and the oral presentation of the report will be 10% of the course grade.**
- II. An ethnographic linear program (ELP) model will be developed based on the system presented in the first report (or another if approved by the professor). The model should be constructed and run using objective functions and constraints taken from the evaluation criteria discussed above and should adequately simulate the household strategies represented by the model. Solutions and their interpretation will be included. After the model adequately simulates the livelihood strategies of households, alternatives will be tested for *ex ante* evaluation of potential adoption of technology alternatives, management practices, and/or responses to policy incentives or changes in infrastructure. **The final report (30%) includes the ELP (20%) and a revised version of the first report containing the schematic model.** The final combined report will be professional quality, double spaced, with no more than 20 pages (excluding tables and figures). **The oral presentation of this final report in class will be 10% of the course grade.**

Class participation will be worth 10% and includes attendance, turning in exercises, and reporting preliminary results *on time*. **In summary:** Written reports: 40%, Oral presentations: 20%, Exercises: 10%, Class participation: 10%. The ELP model, 20%.

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Note: Many of these references are now available on the following website:

<http://web.uflib.ufl.edu/ufdc/UFDC.aspx?c=fao1&s=ifsa&>

They have been digitized by the University of Florida library.