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**EFFECTS OF ALTERNATE INCOME-GENERATING STRATEGIES OF
SMALL-FARM HOUSEHOLDS: A MODIFIED FARMING SYSTEMS APPROACH**

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ABSTRACT The growing dependence of small farm households upon nonfarm income involves important changes in sources of income, in levels and techniques of production, and in assessments of economic well-being. Based on a sample of small-farm households drawn from the four rural development regions of Georgia, this research examines these changes by focusing on household income, tracing patterns of decision-making related to its production, and attempts to evaluate the consequent economic well-being of small-farm households. The primary analytic technique is discriminant analysis, with 28 variables representing three elements of the farming system--the household, the household's resources and farming enterprises.

Findings suggest significant differences among the farming systems or patterns of farming of small farm households. Many of these differences are attributable to the relative importance of agriculture in contributing to total household income. The farming system dimension which accounts for the most differences in the processes and outcomes associated with farming is resource characteristics, particularly those characteristics associated with managerial strategies. The finding of no significant differences between farm income-dependent and nonfarm income-dependent households in measures of economic well-being suggests that small-farm households may employ different strategies to achieve the same degree of economic well-being.

Introduction

During the past several decades numerous studies have investigated issues related to the patterning of production activities on small farms and to the economic well-being of small-farm families. Most of this research is dominated by studies in which the conceptual focus is on the operator of the farm enterprise (Bertrand 1967; Cavazzani 1979; Fuller and Mage 1976). More often than not, the emphasis is on the farm as a production unit providing an important source of income for the farm family. The economic well-being of the family is viewed as depending, to a significant degree, upon the success of the farm as an income-generating enterprise. Thus, the goal of much small-farm research has been to

improve the income-generating capacity of the farm by increasing levels of production and the rates of return to investments in land, labor, capital, and management.

Consequently, major attention has been devoted to the study of factors affecting the income-generating potential of the farm, especially as influenced by the characteristics of the operator. Considerably less attention has been paid to the effects of alternative income-generating strategies on the patterning of economic activities that characterize small farms. The relative importance of alternative economic survival strategies (e.g., off-farm employment, transfer payments, etc.) on farm-related production behavior, especially as that behavior is reflected in the selection of farm management strategies related to production and marketing, has not been adequately addressed. The tendency has been to deemphasize farmers' ideas about "appropriate" economic behavior and to emphasize instead the effects of such factors as farm size, composition of the household, and the risks and payoffs associated with traditionally assumed profit-maximizing behavior (Chibnik 1975).

An effort is made here to expand upon most traditional approaches to the study of factors affecting the patterning of farm-related production activities and the economic well-being of small-farm families. Consideration is given not only to the personal attributes of small-farm operators, but also to the distribution of farm resources and the interaction of family members in the larger social and economic systems of which the farm is a part. Additionally, the conceptual focus is shifted from the farm enterprise and the operator to the household as a single economic unit.

Whereas most previous research has examined the effects of operator characteristics and the patterning of economic activities on the amount of farm-generated income, the present investigation asks how the farm family structures its social relations and its patterning of economic activities to accommodate its major income-generating strategy; that is, how do patterns of social and economic activities of small-farm households differ on the basis of whether the farm is the primary source of household income. A tacit assumption of this study is that many small-farm families depend upon sources other than the sale of farm products to achieve economic security. Thus farming may be seen as just one strategy of several to reach maximum economic goals. A major goal is to explore the variations in patterning of social and economic activities characterizing small farms and to find how these patterns differ according to the relative importance of agriculture in providing total household income.

Patterns of farming are reflected in the selection of management options and in decisions about inputs, enterprise combinations, and resource utilization. These patterns are influenced by family goals, values, needs, and extra-farm social relations.

Put more succinctly, the objective of this research is to examine the relationships among the primary source of

household income, patterns of decision making related to farming, and the economic well-being of small-farm households. It is hypothesized that the relative importance of farm income to total household income leads to different patterns of production activities (e.g., organization and utilization of resources) by operators of small farms, but not to significant differences in economic outcomes for small-farm households.

Conceptual framework

The conceptual model employed for examination of the relationships among primary sources of family income, patterns of farming, and measures of economic well-being is extracted from the farming systems research perspective (Norman 1978; Shaner et al. 1981).

Farming systems research, as defined by Shaner et al. (1981:214), is this:

An approach to agricultural research and development that (1) views the whole farm as a system and (2) focuses on the interdependencies among the components under the control of the farm household and how these components interact with the physical, biological and socioeconomic factors not under the household's control.

In farming systems research, emphasis is directed specifically to the needs and aspirations of farmers with limited resources. Historically, these have been small farmers who have not adequately benefitted from agricultural research (Shaner et al. 1981). Farming systems research evolved as an effort to identify the logic of the farming practices actually adopted by the household and to compensate for the limitations and inadequacies of conventional strategies in dealing with the problems of small farmers.

The farming systems approach is based on a complex interaction among a number of interdependent components including the farm operator, the farm family, off-farm enterprises, and the factors of production. Attention is given not only to crop and livestock production, but also to strategies for processing, storing, and marketing agricultural products. Other important considerations include the effects of nonfarm economic activities and family goals as they relate to production, profit, and self-actualization in agricultural activities. The farming systems approach is distinguished from traditional small-farm research in that "it looks at the interactions taking place within the whole farm setting and measures the results in terms of the farmer's and society's goals" (Shaner et al. 1981, p. 14). In doing so, it directs attention to public policy by considering variables that are exogenous to the farm family and that constitute constraints to the achievement of family objectives, such as employment and income that can be ameliorated through program intervention (Norman 1978).

For purposes of analysis, the elements of the farming systems research model are usually subdivided into two categories of variables representing 1) the farmer's environment and 2) the farming system. The farmer's environment includes the physical setting of climate, water, and quality of soil; the biological setting of such factors as diseases, insects, and weather conditions that affect the health and vitality of plants and animals and the quality of products harvested; the economic setting of access to markets, credit and informational sources, opportunities of off-farm employment, and government regulations; and the social setting including factors that influence the farm household's willingness to accept new technologies (Shaner et al. 1981).

It is the second category of elements, those which comprise the farming system, from which the variables in this analysis are drawn. The farming system includes 1) the household, 2) the household's resources, and 3) farming enterprises. The household is the key element in the farming system. It is composed of the farm operator and other members of the household who share a single residence. The household's resources include the production factors of land, labor, capital, and management. Farming enterprises refer to the processes employed by the household in utilizing its resources to produce output that contributes to the income of the farm household. Enterprises include nonagricultural activities carried out on the farm, such as handicrafts, and employment off the farm by members of the household as well as crop and livestock production.

Research design

Data and sample

Data for this paper were collected in conjunction with the regional research project RR-2, "Factors Influencing the Survival of Small Farms in the South." The population of primary interest was the small-farm population in the Southern Region of the United States, although other farm types are also included in the sample. Data for this study are exclusively from Georgia. In order to reasonably assure that small farm(er)s were adequately represented in the study, the sampling strategy involved a purposive selection of counties with high proportions of small farm(er)s.

The criteria for inclusion as a sample county for the study were 1) that the county had at least 200 separate farm units and 2) that at least 10 percent of these farms were operated by black farmers. To insure representativeness of the sample, counties were selected on a random basis from the four distinct identifiable geographical areas -- Mountain, Piedmont, Coastal Plain, and Fall Line regions.

Farms and farm operators were identified in the selected sample counties through the assistance of agricultural service agency personnel at the county level (Soil Conservation, Agricultural Stabilization and Conservation, and the County Extension Service). After lists of all

farmers were prepared, a final sample of individual farmers was drawn.

Each farmer selected through the random sampling procedures was interviewed at length; a common interview schedule was used. The instrument was structured to gain information in 10 major areas: demographic data, farm operation data (e.g., acres devoted to crops, pastures, etc.), tenure status, length of time in farming, off-farm employment and income, sources of information and use of selected farm enterprises and marketing data, information on farm machinery and equipment, management practices, production problems and resource needs, and a sociological component addressing attitudinal traits, value orientations, and extra-farm social and political participation. Interviews were completed with 245 farmers. These analyses involve a subsample identified as operators of small farms (N=225).

Analytical procedures

Discriminant analysis procedures available through the DISCRIMINANT routine of SPSS (Statistical Package for the Social Sciences) served as the main analytical approach. Discriminant analysis is a statistical technique that facilitates simultaneous study of differences between two or more groups of objects with respect to several variables (Klecka 1980, 1975). The mathematical objective is to weight and linearly combine discriminating variables into functions. Each function expresses a pattern of relationships obtaining among the discriminating variables which can be used to distinguish membership in one group from membership in another. The maximum number of functions that can be derived is either one less than the number of groups or equal to the number of discriminating variables, whichever is smaller.

An initial indicator of the differences between groups is gained by examining the group means, which show how far apart the groups are. The F statistic provides a test of the statistical significance of the effect of each discriminating variable on the grouping variable.

Other statistical features of the discriminant procedure that are important in these analyses include the standardized discriminant coefficients, the (within-groups) structure coefficients and Wilks' lambda. The standardized discriminant coefficients indicate the relative importance of a variable to its associated function. The structure coefficients are bivariate correlations between a single variable and a discriminant function; they indicate how closely a variable and a function are related. Wilks' lambda aids in judging the importance of a function. It is used to test for the statistical significance of residual discrimination. Lambda operates as an inverse measure of the discriminating power of the original variables which has not been removed by the discriminant function; the larger lambda is, the less information remaining. As lambda increases toward its maximum value of 1.0, it is reporting less and less discrimination.

Other analyses involved principal components analysis of responses to 23 attitudinal items included in the questionnaire to determine dominant socio-psychological orientations. Scores were computed for the five components identified through this process. The new variables--labeled powerlessness, economic security, markets and governmental policy, commitment (to farming), and pessimism (about the family's future in farming)--were entered as discriminating variables in subsequent analyses.

Variables in the analyses

Grouping variables: The sample is stratified on the basis of major source of household income and the amount of gross farm sales. Households are classified as "farm income-dependent" or "nonfarm income-dependent" depending on where 51 percent or more of total household income is obtained. The criterion of gross farm sales is consistent with traditional typologies of small farms. For the purpose of this study, a farm is designated as small if gross sales do not exceed \$40,000.

Information on the total incomes of the operator, the operator's spouse, and other family members was provided by the respondent for the following categories of income sources: net farm income (all sources), off-farm wages or salaries, nonfarm business income, rent from nonfarm property, and social security, pensions, and other retirement income. Dollar amounts as reported by the respondent were summed to arrive at the total annual household income.

Amount of gross farm sales resulted from summing the values of gross sales during the past 12 months, as reported by the respondent for crops (field, vegetable, and truck), nursery and greenhouse products, other crops; for the livestock enterprises of beef cattle, dairy cows, swine, other livestock; for poultry products, dairy products, other livestock products; and for fish and other agricultural products. If the respondent did not report the dollar amount of sales, the amount was estimated if information on the type of crop and quantity marketed were provided. The estimates were based on the seasonal average price paid in the county of residence as reported by the Crop Reporting Service (1982).

Discriminating variables: The discriminating variables were selected to represent the three dimensions of the farming system described previously--the household, household's resources, and farming enterprises.

Household characteristics included in the analyses were race, sex, age, and educational level of the operator; number of persons in the household; value of farm-produced crops, livestock, and timber retained for home consumption; and two variables relating to the farming background of the operator--years as a farmer and whether the operator grew up on a farm. Characteristics of the household also include measures of dominant socio-psychological orientations identified through principal components analysis.

Household's resources include several designations of size of holdings, economic resources, and managerial strategies. Measures of size of holding include the total number of acres of land owned, rented or leased, and operated. Economic resources include total farm sales and total farm assets. Economic farm size is measured as the total dollar amount of expenses associated with the operation of the farm. Total farm assets are measured as the combined value of land owned and the value of machinery and equipment.

Five different measures of managerial strategy are used in this investigation: adoption of recommended farm practices, risk or willingness to make changes in the operation, size or scale of the farm, contact with or utilization of agency services, and participation in farm and extension organizations, including co-op membership. Separate scales were computed to evaluate each category of managerial strategy.

From the farming systems perspective, farming enterprises include nonfarm income-generating activities as well as crop and livestock production. In this investigation, nonfarm income-generating strategies are indicated by patterns of off-farm employment of the spouse as well as the operator. Similarly, farming enterprises are coded to represent both the type(s) and the number of enterprise combinations.

Two measures of economic well-being are included in the analyses--the solvency ratio of the farm and the poverty status of the household. Solvency of the farm is operationalized as the ratio of farm debts to farm assets. A household is identified as having a nonpoverty status if total income (from all sources), controlling for family size, is more than the average income for the state of Georgia (U.S. Department of Commerce, 1983).

Results

Dominant socio-psychological orientations

With the aid of principal components analysis, five components representing dimensions of attitudes toward life in general and farming in particular were identified (Table 1): 1) powerlessness, 2) economic security, 3) markets and policy, 4) commitment to farming, and 5) pessimism about the household's future in farming. These components (orientations) reflect traditional values associated with rural living as well as the heterogeneity and diversity of belief systems attributable to living in a complex, industrialized society. Cumulatively, the five components account for 46.3 percent of the variance among the sampled farmers with respect to the dimensions of belief systems measured.

The first component, powerlessness, measures feelings of lack of control over events affecting one's life and a sense of resignation to accept whatever happens. The second component, economic security, measures orientations toward farming as a way of life that can provide economic security

Table 1. Attitudinal items and significant loadings for each component

Item	Loading
Component 1	
7. One can't really do anything about the future.	.712
10. People always take advantage of you.	.686
9. You just have to accept things the way they are.	.636
6. Success is mostly a matter of getting good breaks.	.617
3. You just can't get ahead anymore.	.616
2. When I am in trouble, only a relative can be counted on to help me out.	.608
4. Many times I feel that it doesn't do any good to think about what to do; you might just as well flip a coin.	.573
13. Farm people cannot afford as many conveniences as city people.	.438
Component 2	
14. Farming is a safe business on which to build family economic security.	.665
16. Farming makes us self-sufficient since we produce practically everything our family needs; there is no need to be dependent on others.	.583
17. I think that about all that can be said about farming is that it furnishes a means for existence.	-.510
5. The ordinary person has very little control over what a politician does in office.	-.465
15. Since profit in farming depends on market prices, it provides too uncertain an income.	-.465
20. Do you feel that you have received the proper income from farming?	.438
Component 3	
21. Do you think that the government has an obligation to help the small farmer?	.789
22. Does the government have more of a responsibility to help small farmers than to help large-scale farmers?	.622
15. Since profit in farming depends on market prices, it provides too uncertain an income.	.460

Table 1. Continued

Component 4	
12. Even if I could make more money working off the farm, I would not give up farming altogether.	.680
23. If you had to do it again, would you choose farming as an occupation?	.568
18. I would like to give up farming altogether and just work at my off-farm job.	-.383
Component 5	
19. Do you think at least one of your children will choose farming as an occupation?	-.688
18. I would like to give up farming altogether and just work at my off-farm job.	.591
8. It makes little sense to go out and vote because the average man's vote doesn't count anyway.	.465
1. Most public officials are not really interested in the problems of the average man.	.314

for the household. It addresses the "business" nature of farming and reflects a belief that a profit can be made from farming.

The component labeled markets and policy relates to the influence of factors perceived to be beyond the immediate control of the household. These include the role of government and the effects of market conditions on the prices that farmers receive for their products. The component further suggests that the government has an obligation to help small farmers and to provide more assistance to small farmers than to large farmers.

Commitment to farming, the fourth component, indicates a strong commitment to farming as a way of life in spite of uncertain profits. The item loading highest on this component asserts that respondents engage in farming because they like it and not because of the income made from it. The last component measures negative attitudes toward farming and pessimism about the family's future in farming. The item with the highest loading on this component expresses little hope that any of the children of the respondent will choose farming as an occupation.

Having identified components of socio-psychological orientations toward life in general and farming in particular, the remainder of this section reports the results of analyses to determine the variables or categories of variables that effectively discriminate between farming systems operated by small farm households.

Farm income-dependent vs. nonfarm income-dependent

Preliminary insights regarding differences between the farming systems of farm income-dependent and nonfarm income-dependent households are gained by examination of the group means (Table 2). A comparison of group means reveals that farm income-dependent and nonfarm income-dependent households differ significantly on 11 of the 28 discriminating variables. Distinguishing household characteristics are sex of the operator, amount of money saved through home consumption and use of farm products, and the orientations of economic security and pessimism about the family's future in farming.

Household resource characteristics that distinguish between the groups are amount of total farm sales, economic farm size, and the managerial strategies of adoption of recommended farm practices, contact with and utilization of agency resources, and willingness to accept the risks associated with making changes in the operation, size, or scale of the farm. The groups are further distinguished by number of production enterprises and by patterns of off-farm employment.

As might be expected, farm income-dependent households have a higher mean on the orientation measuring desire to achieve economic security through farming. They also have higher gross receipts from the sale of farm products and larger economic farm size. They save more money by consuming or using farm products and are more likely to adopt recommended farm practices. Additionally, farm income-dependent households tend to be more willing to accept the risks associated with making changes in the operation, size, or scale of the farm, and they score higher on contact with and utilization of agency services.

Nonfarm income-dependent households, on the other hand, are more likely to have female heads of households and to be engaged in off-farm employment. While the farming systems of nonfarm income-dependent households have lower solvency ratios (that is, are more solvent) than farm income-dependent households, the differences between the solvency ratios of farm income-dependent and nonfarm income-dependent households are not statistically significant. Neither is there a statistically significant difference in the economic well-being of the two groups as measured by their poverty status.

An understanding of the internal composition of the function that distinguishes between the two groups can be obtained by examining the standardized discriminant coefficients in Table 3. The large coefficient associated with the sales variable (.946) shows that the amount of gross farm sales is clearly the most important discriminating variable. The coefficients for economic farm size (.452), agency contact (.210), and total assets (.185) show that these variables make moderate-to-low positive contributions in discriminating between farm income-dependent and nonfarm income-dependent households. Negative contributions are made by level of education

Table 2. Means and standard deviation of discriminating variables: Farm-income dependent and nonfarm-income dependent households compared.

Variable	Farm-income dependent N = 78)		Nonfarm-income Dependent (N = 132)		Uni- variate F
	Mean	SD	Mean	SD	
Race	0.462	0.502	0.364	0.483	1.958
Sex	0.974	0.159	0.894	0.309	4.560 ^C
Age	58.974	13.133	59.057	15.006	.4135D
Education	4.564	1.799	4.874	1.832	1.134
Household size	3.231	4.115	3.157	3.879	.4272D-01
Years farming	33.718	17.274	32.303	19.373	.283
Farm history	0.923	0.628	0.902	0.299	.247
Amount saved	889.641	1282.824	515.326	781.678	6.911 ^b
Power- lessness	-0.017	0.940	0.010	1.037	.372D-01
Economic security	0.228	1.011	-0.135	0.972	6.643 ^b
Markets and policy	0.085	0.935	-0.050	1.037	.898
Commit- ment	-0.0332	0.865	0.0196	1.074	.136
Pessimism	-0.187	1.093	0.110	1.093	4.389 ^b
Acres owned	101.949	116.165	460.727	2344.322	1.821
Acres rented	38.423	107.643	20.561	111.243	1.295
Acres operated	149.167	147.888	473.114	4356.735	.430
Farm assets	120514.141	156998.781	73749.379	89327.958	7.577 ^b
Economic farm size	12423.808	11679.521	4740.432	19314.162	10.05 ^b
Farm sales	15391.179	10483.927	2351.311	3821.678	167.1 ^a
Adoption	3.141	1.665	1.947	1.691	24.72 ^a
Risk	2.359	1.611	1.758	1.199	9.501 ^a
Agency contact	6.205	3.965	4.380	3.761	12.33 ^a
Partici- pation	0.359	1.006	0.515	1.395	.7472
Co-op member	0.359	0.483	0.311	0.465	.5163
Off-farm employment	3.500	6.187	5.098	5.148	4.059
No. of enter- prises	7.205	5.054	4.477	4.789	15.26 ^a
Solvency	5.924	16.315	2.617	8.336	3.769
Poverty status	0.820	0.386	0.841	0.367	.1456

a = p < .001; b = p < .01; c = p < .05

Table 3. Discriminant function coefficients: Farm-income dependent and nonfarm-income dependent households

Variable	Unstandardized	Standardized	Within-
	discriminant	discriminant	structure
	coefficients	coefficients	coefficients
	Function 1	Function 1	Function 1
Race	.340	0.166	0.084
Sex	.270	0.071	0.129
Age	-.1045D-01	-0.150	-0.004
Education	-.198	-0.360	-0.064
Household size	-.360D-02	-0.014	0.012
Years farming	.183D-02	0.034	0.032
Farm history	.258	0.074	0.031
Amount saved	-.489D-04	-0.049	0.158*
Powerlessness	-.131	-0.132	-0.012*
Economic security	.109	0.107	0.155
Markets and policy	.903D-01	0.090	0.057
Commitment	-.689D-02	-0.007	-0.022
Pessimism	-.158	-0.156	-0.126
Acres owned	.132D-04	0.024	-0.081
Acres rented	-.666D-03	-0.073	0.068
Acres operated	-.738D-05	-0.027	-0.039
Farm assets	.155D-05	0.185	0.166*
Economic farm size	.267D-05	0.452	0.191*
Farm Sales	.134D-03	0.946	0.778*
Adoption	.305D-01	0.051	0.299*
Risk	-.931D-01	-0.127	0.186*
Agency	.548D-01	.0210	0.211*
Participation	-.150	-0.190	-0.052
Co-op member	-.245	-0.115	0.043
Off-farm employment	-.590D-01	-0.327	-0.121
Number of enterprises	.349D-01	0.171	0.235*
Solvency	-.410D-02	-0.049	0.117
Poverty status	-.745	-0.279	-0.023
(Constant)	.124		

Canonical correlation: 0.755

Wilks' lambda = 0.430 $\chi^2 = 162.39$ with 28 df, $p < .001$

(-.360), off-farm employment (-.327), and participation in farm and extension organizations (-.190).

A different perspective on the function can be attained by examining the structure coefficients. As bivariate correlations, the within-structure coefficients reflect how individual variables are related to the function. Thus, it is apparent that variables that differentiate between farm income-dependent and nonfarm income-dependent households are those that affect the amount of gross farm sales (a within-structure coefficient of .778). Elements of the farming system that are most significantly related to amount of farm sales are the resource and enterprise characteristics of adoption or recommended farm practices, number of production enterprises, and contact with agency personnel. Resource characteristics of farm size and the management strategy of risk are also significantly related to farm sales. Generally, household characteristics, including sex and educational level of the operator, amount of money saved, socio-psychological orientation toward economic security, and farming enterprises as indicated by patterns of off-farm employment are not as important as the household's resources in accounting for differences in amount of gross farm sales.

The summary statistics for the model (Wilks' lambda of .430), $p < .001$) indicate that the discriminating variables are very effective in distinguishing between the farming systems of farm income-dependent and nonfarm income-dependent households.

Summary and discussion

The findings of this study indicate that there are significant differences among the farming systems and patterns of farming of small-farm households. Many of the differences seem to be attributable to the relative importance of agriculture in providing total household income. The dimension of the farming system that accounts for the most differences in the processes and outcomes associated with farming is that of resource characteristics, particularly those associated with managerial strategies--adoption of recommended farm practices, willingness to accept the risks associated with making changes in the operation, size, and scale of the farm, and contact with and utilization of agency resource--all of which are positively related to the amount of gross farm sales. In addition to scoring higher on each of these indicators of managerial strategies, farm income-dependent households also tend to have greater control over more farm assets, as indicated by the value of land and equipment owned (an expected association).

Farm income-dependent households are also involved in a statistically significantly larger number of production enterprises than nonfarm income-dependent households. Households that are more dependent upon farm income are much more likely than nonfarm income-dependent households to

diversify their enterprises by producing a variety of crops in addition to livestock. Nonfarm income-dependent households, on the other hand, tend to restrict their enterprises almost solely to field crops.

In addition to being significantly different in the amount of farm income and in the processes associated with its production, farm income-dependent and nonfarm income-dependent households differ in their socio-psychological orientations and patterns of off-farm employment. Farm income-dependent households have a higher positive score on the orientation of economic security (they seek economic security from farming) and a low negative score on pessimism (they tend not to be pessimistic about the family's future in farming). Among farm income-dependent households, both the operator and the spouse are likely to work part time off the farm, whereas nonfarm income-dependent households are often characterized by an operator who works full time off the farm and a spouse who works part time. The finding of no significant differences between farm income-dependent and nonfarm income-dependent households for either of the two measures of economic well-being, solvency ratio and poverty status, confirms the hypothesis that small-farm households employ different strategies to achieve the same degree of economic well-being.

Implications

In order to better accommodate the different needs of small-farm households, numerous efforts have been devoted to the development of small-farm typologies. The typologies are often related to the complex diversity of resource combinations and outcomes (e.g., size of holdings, amount of gross farm sales) that characterize small-farm production systems. While various configurations of resources provide a basis for classifying small-farm populations into fairly homogeneous groups representing similarity in the control of resources, they are less efficient in analyzing decision-making processes or economic outcomes associated with alternative strategies of resource utilization. A realistic appraisal of the status of small-farm households must consider not only resource utilization, but interactions among resource availability, resource utilization, the effects of decision-making processes on the organization of resources, perceived and real social and economic constraints, and family farm and nonfarm goals. Only through simultaneous consideration of, and sensitivity to, variations in all of these dimensions can policy makers and program developers reach any degree of precision in understanding how small-farm households organize their resources to respond to the pressures and opportunities within their environments. Inasmuch as small farm(er)s have been identified as a key group for agricultural development strategies, an understanding of the process is a prerequisite to solving the problems of small-farm

households. The explicit articulation of differences among farm households as affected by relative dependence upon farm income is one step toward the formulation of programs and policies appropriate to the needs of a heterogeneous small-farm population.

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