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# COMMON BARRIERS TO THE INTEGRATION OF SMALL FARMS IN AGRICULTURAL DEVELOPMENT POLICIES IN BRAZIL, PORTUGAL, AND THE UNITED STATES

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## Introduction

Failure to consider the needs of families on small farms during the formulation of agricultural development policies may result in unexpected inequities that worsen the small farmers' disadvantaged circumstances. An important challenge facing policymakers is the identification and implementation of strategies which will increase agricultural production and trade (growth consideration) without disenfranchising or eliminating small scale farmers (equity consideration), especially when agricultural producers are at both extremes of the size spectrum. The question of who benefits from agricultural development has proved increasingly important in recent years. The integration and participation of small farmers in agricultural development efforts is one of the most challenging problems for agricultural economists today.

This report is a result of cooperation and interaction between Brazilian and U.S. agricultural economists and Portuguese agriculturists. It is based on observation, published reports, and primary data collected in small farm surveys in each of the three countries. We first describe the three widely separated study areas and indicate that the presence of substantial numbers of small, economically disadvantaged farms in each area suggests that they have not been fully integrated into the economy. Second, we describe three common agricultural policies and programmes and the barriers they contain to small farm participation. Data and observations from a highly developed, a recently developed, and an emerging agricultural sector are used to illustrate the lack of small farm integration into public policies for agriculture.

## Failure to Achieve Small Farm Integration

Evidence of the failure to integrate small farmers into the agricultural sector is found in each of the three study areas, in spite of their geographical dispersion and differences in stage of agricultural development. One study area is in Wisconsin, a major agricultural state which supports about 5 percent of the U.S. farm population. Although the Wisconsin agricultural sector is highly developed, about two fifths of the farms can be considered small in terms of the resources controlled, and nearly one fifth are in poverty by government standards.

The second study area is in Rio Grande do Sul, the southernmost state in Brazil. Since the early 1960s it has been an area of rapid agricultural development, fostered by federal government policies. A major Brazilian farming area, it has rural incomes that are above the national rural average. Nevertheless, nearly two fifths of the farm families receive income below the level of one legal minimum salary per adult equivalent, an indicator of absolute poverty status (Grawunder and Saupe).

Portugal is the third study area. It is the most southwestern country in continental Europe and contained 808,800 farms in 1968. Of these, some 628,600 had fewer than 4 hectares (Gallagher). Per capita income of rural people in the poorer districts averaged about \$330 in 1970, \$320 below the national average and lower than any other European country. In contrast to the policies of the United States and Brazil, Portugal's agricultural development programmes are at an early stage of development.

## **Common Barriers to Small Farms in Agricultural Policies**

The objectives of agricultural development policies are not necessarily consistent with improving the well-being of families on smaller farms. The adverse impact on small farms cannot be anticipated by policymakers because the unique characteristics of such families are not well documented or understood. The following examples illustrate these policy shortcomings in all three study areas.

### **Commodity Price Support Programmes**

Commodity price support programmes take various forms but span decades and even centuries in the three study areas. For example, the quantity, quality, and price of port wine produced in Portugal were controlled by a 1760 decree which limits production to a specific geographic area in the upper Rio Douro valley. Brazil, in the early 1960s, established a guaranteed price to its wheat farmers at a level well above the world price, to promote national self-sufficiency in the production of wheat. Farm commodity programmes in the United States have raised the mean and reduced the variance of selected commodity prices and producers' income. The methods used have included several ways of removing production from the market, cash payments, and acreage allotments that limit production to desired market clearing levels.

Regardless of method, the benefits of commodity price enhancement programmes are distributed to farmers on the basis of the quantity produced. Although the commodity price is enhanced for all producers of that commodity, the skewed benefit distribution increases the inequality of the distribution of income. Thus, while the above programmes may be effective in controlling quantity and quality of port wine in Portugal, increasing wheat production in Brazil, or raising and stabilizing producer incomes in the United States, they widen the gap in net income between large and small producers and between producers and nonproducers.

### **Agricultural Credit**

In each of our study areas, the government has developed programmes to increase the availability of agricultural credit to farmers. In the United States, this took the form of the creation in 1930 of (initially) federally funded cooperatives whose local offices made loans for real estate purchases and farm operating expenses. In the 1960s in Brazil, branches of the Bank of Brazil were established in rural communities as a new source of agricultural credit. Federal programmes were implemented in Portugal in 1980 to direct additional funds to farmers through existing rural banks and credit cooperatives as well as through a newly created financial institution. In each case the credit became available to operators of farms of all sizes who could meet the collateral and repayment criteria of the institution. Self-selection took place, however, as the more aggressive, market oriented (generally larger) farmers became the major users. In addition, economies of size on the part of the lender meant that fewer but larger loans could be made with less cost in administration and supervision than if the same total amount of credit were loaned to a larger number of small borrowers. For these reasons, there is a tendency for credit programmes, like open market lending activities, to lend a disproportionate share of the total credit to large rather than small farmers.

### **Agricultural Research**

Agricultural research has been supported by the U.S. government for more than a century, and in Brazil for many decades. In Portugal, agricultural research has been of limited scope.

Most public sector agricultural research is scale neutral with new knowledge being equally useful to farmers of all sizes. Exceptions occur primarily in mechanization research which results in size economies for the larger farmers for whom the new equipment is economically feasible. In addition, new technology that facilitates the substitution of capital for labour also works to the disadvantage of the small farmers who have relatively ample labour but limited capital. Proponents of appropriate technology for small farmers look primarily for labour intensive practices and enterprises that are not amenable to mechanization. The ultimate beneficiaries of agricultural research are consumers who gain a larger, more stable, better quality, and lower cost food supply. The primary agricultural beneficiaries tend to be the innovators.

### **Small Farm Research**

The preceding examples show that agricultural policy objectives and methods are not always consistent with small farmers' needs. The low visibility of small farmers may serve as a stumbling block to their integration into national policy because undesirable impacts may not be anticipated, and may even go unnoticed. The low visibility of small farmers is reinforced by the self-selection process which brings the more aggressive (usually larger) farmers to the attention of the rural leadership (agricultural lenders, extension workers, managers of cooperatives, and merchants). The members of farmers' organization are often those with the income and available time to afford such off-farm activity. Farm lobbyists represent only those with the income and wealth to finance their activities. Small farmers are thus readily overlooked.

To correct this problem, descriptive and analytical small farm research can form the basis for understanding the distributional impacts of agricultural policies, and for developing public policies with the objective of increasing the well-being of families on small farms. The small farm data reported in table 1 are from such surveys and are suggestive of the kinds of information that can be obtained. The relevance of the information to public policymakers and programme managers will be emphasized in the following section, but first some comments about the surveys.

In each study area, the farms were considered small by local standards, based on assets or income. Absolute levels differ, however. For example, mean net cash farm operating income ranged from \$2,782 to \$8,653 among the three study groups, but in all cases the farms were considered economically disadvantaged by local criteria. Compared to the other research sites, the Portuguese farms are the smallest in size, averaging 8.7 hectares, scattered among 7.4 parcels per farm. Small farm areas in Rio Grande do Sul have a larger labour supply than the other study areas. The Wisconsin farmers were participants in an intensive extension programme for small farmers in selected areas, and are believed to be typical of small, low income farmers in that state. The Wisconsin farms support the most animal units, particularly dairy cattle, and the most crop acres of the three groups of farms.

### **Small Farm Characteristics Affecting Public Policy**

A selection of the many family and farm characteristics which influence how families on small farms are affected by agricultural development policies are illustrated by the data in table 1. Although a direct measure of productivity is not included, low productivity was evident in all study areas.

**Table 1. Characteristics of Selected Small Farmers From Countries With Differing Agricultural Development Circumstances**

	Unit	Portugal	Brazil	United States
Number of farms	no.	40	87	165
Age of head	years	47	51	34
Education level:				
Cannot read or write	pct.	10	4	0
Can read and write, but no schooling	pct.	18	0	0
1-4 years of schooling	pct.	56	68	0
More than 4 years of schooling	pct.	16	28	100
Household labour (manyear equivalents):				
Available	m.e.	2.8	3.8	2.1
Employed on the farm	m.e.	1.9	3.1	1.5
Employed off the farm	m.e.	0.5	0.1	0.1
Land tenure:				
Own	ha.	4.9	16.7	68.4
Rent	ha.	3.8	1.1	22.7
Parcels owned	no.	5.5	1.0	1.0
Parcels rented	no.	1.9	0.4	0.4
Own no land	pct.	15	4	7
Agricultural enterprises per farm:				
Cattle (beef and dairy)	head	3.5	8.6	55.6
Sheep or goats	head	0.3	0	3.6
Swine	head	3.2	17.5	8.8
Grain and other crops	ha.	2.5	12.5	52.3
Grapes and fruit	ha.	2.2	0.8	--
Horticultural food crops	ha.	1.1	0.4	0.1
Forest and woodland	ha.	--	1.6	22.5
Financial				
Gross sales per farm	U.S.\$	8,467	5,286	43,868
Net cash farm income	U.S.\$	3,674	2,782	8,653

### Low Productivity

Low productivity prevents small farmers from reaping the maximum benefits of policies based on output. Understanding the causes of low productivity should precede the creation of programmes or policies for improvement.

In Portugal, the extreme parcelization of an already small land base increases labour travel time to and from tracts and constrains mechanization because of small field size and footpath access. In other cases, the effectiveness of fertilizer and pesticides may be limited because available small scale machines or tools inadequately distribute or incorporate the material. For example, farmers in Rio Grande do Sul who adopted the new chemical technology but incorporated the chemicals with oxen or human powered equipment incurred the added costs but failed to reap the expected additional benefits of the practices.

## **Age of Head of Farm Household**

Effectiveness of public programmes and policies is also influenced by the age of the clientele. Younger farmers tend to be more responsive to changes, more willing to accept financial risk, and more open to scientific versus traditional agriculture. Small farmers near age 50 (e.g., in Portugal and Rio Grande do Sul) were often less responsive than their younger counterparts to innovative public programmes or policies.

## **Education**

Even when education levels are high, as in Wisconsin, existing extension programmes based on statewide printed brochures, news releases, radio programmes, or mass meetings are not effective when small farmers feel that this information does not cover small farm problems. Solutions include printed material identified as small farmer information, one-to-one on-farm extension programmes directed at low income farmers, and group meetings held specifically for small farmers.

Mass media are potentially effective in rural southern Brazil as there is more than 90 percent readership by farm families of weekly newspapers which contain relevant, seasonal farm information. Farmers reported spending nearly 2 hours per week on this activity (Fett). However, in Portugal, a substantial percentage of farmers are unable to read, which reduces the potential for any public programme that seeks coverage by mass media.

## **Labour Supply**

Farm household labour supply is important both as a farm production input and in other ways. In Wisconsin, most farm households have one or more adults who work off the farm at least part of the year, and off-farm income can be an important determinant of total family well-being. While farms included in this study were far below the state mean in that regard, public programmes that enhance off-farm work opportunities can directly benefit small farm families.

In Portugal, substantial numbers of male household heads spend 10 or 11 months per year in employment in a foreign country for much of their adult life. This generates a higher level of family income than otherwise available, but the head's continual absence restricts farm enterprises to those requiring only labour of the spouse and children. Output stimulating farm programmes in Portugal need to recognize the composition of the labour supply.<sup>2</sup> In contrast, small farms in southern Brazil have on average nearly four manyear equivalents of labour supply. Research on appropriate technology and agricultural programmes to assist small farmers there should consider the abundance of labour relative to capital.

## **Land Tenure and Control**

The amount of land owned affects the farmer's ability to finance operating loans and realize the returns from long term investments. Also, smaller farmers cannot take advantage of the economies of size associated with reduced costs per unit of capacity of larger mechanical devices.

## Credit and Risk Aversion

Public policy could assist small farmers to expand their use of credit if current problems were recognized. Even when the smaller operator fully recognizes the low risk and rapid payoff from the use of certain inputs, he may lack the internal cash flow or the needed credit to buy the input. Credit use may be inhibited by the lack of productive alternatives for its use, as in Portugal where a government programme provides funds for fertilizer and lime use in maize production but research to identify the expected yield increase is incomplete or inconclusive from the farmers' viewpoint.

A solution to small farmer credit programmes has been achieved in the United States through federal agencies that make loans to economically disadvantaged farmers who cannot obtain credit elsewhere. In late 1981, this subsidized credit programme provided 17 percent of all farm credit in the country.

Farmers in all countries display wide variation in their willingness to incur financial risk. Risk aversion is more pronounced among decisionmakers near the subsistence income level where a mistake affects survival, and generally among older farmers who have fewer years remaining to recover potential losses. Also, cultural barriers sometimes impose serious constraints in terms of farmers' willingness to borrow, as in the case of Portugal.

## Summary and Conclusions

Agricultural policy objectives may have unintended conflicts with the improved well-being of families on small farms. The impact of policies on small farms may be unexpected because little is known of their unique characteristics. Special studies of small farms in three areas at different stages of agricultural development were used to demonstrate the new knowledge created and insights gained into expected small farmer response.

## Notes

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<sup>2</sup>The family head was present on all Portuguese farms included in the study.

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