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THE LAND TENURE CENTER ANNUAL REPORT 1968

A cooperative research and training program of the American Nations, the Agency for International Development, and the University of Wisconsin.

310 KING HALL
UNIVERSITY OF WISCONSIN
MADISON, WISCONSIN

LAND TENURE CENTER

**310 King Hall
University of Wisconsin
Madison, Wisconsin 53706**

January 1969

**John M. Curran, Chief
Contract Services Division
Office of Procurement
Agency for International Development
Washington, D.C. 20523**

**Re: AID/repas-3
University of Wisconsin**

Dear Mr. Curran:

**I enclose copies of the Land Tenure Center's annual
program report for calendar year 1968. This is in accordance
with procedures outlined in Amendment No. 3 of the Wisconsin
contract.**

Sincerely yours,



**Peter Dorner
Director**

encl: 2 copies of Report

**cc: Dr. Douglas Caton, Director, Agriculture
and Rural Development Service, Office of
the War on Hunger, AID Washington**

**Dr. Robert McMillan, ARDS/WOH, Contract
Monitor (with 30 copies of Report)**

**Dr. Erven J. Long, Director, AID
Research and Institutional Grants,
Office of the War on Hunger**

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PREFACE

The Land Tenure Center's Research and Training Program is now in its seventh year of operation. In this year's Annual Report, we present a brief overview of some aspects of the program during these past six and one-half years. Major emphasis in this year's report is on the research being conducted in several Latin American countries. Here, too, we have tried to give a brief sketch of agricultural conditions and trends in recent years for each country, a resume of past Land Tenure Center research as it is related to these conditions, and a summary of research presently under way.

This report marks the beginning of a larger effort which we hope to carry out over the next eighteen months. The objective is to synthesize and interpret the various specific research findings within the broader contexts of development policy, to provide guides and hypotheses for future research, and to formulate new theoretical constructions relevant to the problems of economic development.

LAND TENURE CENTER OPERATIONS: AN OVERVIEW

LAND TENURE CENTER OPERATIONS: AN OVERVIEW

During these past six years a large number of specific research projects have been conducted in several Latin American countries. These studies were directed by staff members from the University of Wisconsin and from Latin American institutions, and were conducted jointly by these staff people and large numbers of Latin American and U.S. students. Appendix I contains a listing of Wisconsin staff and students associated with this program. It does not include staff members from Latin American institutions, nor the many Latin American students participating in the program who were never enrolled in formal course work at Wisconsin.

Appendix II lists the publications resulting from this effort.* This list will be greatly expanded in the near future, since many of our studies that have been completed are not yet in published form. Many more are nearing completion. For example, very little of our Bolivian work has been published; and a number of our studies in Central America, Colombia, Chile, and Brazil will be completed within the next six months. Therefore, we will have a large number of studies to process and publish at the end of the present contract year.

These individual studies and the publications resulting therefrom have had very wide distribution and use. For example, the mailing list for LTC Papers and Research Papers covers 126 U.S. and 97 foreign libraries, 21 U.S. AID Missions, 60 AID/Washington addresses, and 64 campus researchers. A very brief sample of the 101 U.S. researchers regularly receiving LTC papers includes individuals and departments at:

Foreign Development and Trade Division, U.S. Department
of Agriculture;

Department of Geography, Florida Atlantic University;

Rockefeller Foundation;

Department of Agricultural Economics, University of Georgia;

Antioch College;

Department of Economics, Harvard University;

*These studies were not all financed under the contract. Other sources of financing include the Midwest Universities Consortium, the Ford, Rockefeller, and other foundations, the International Legal Center, the Agricultural Development Council, the Ibero-American program at the University of Wisconsin, Country AID Missions, Latin American government agencies, and, of course, the University of Wisconsin and Latin American universities.

Inter-American Committee for Agricultural Development; and
International Bank for Reconstruction and Development.

A sample of the 110 foreign researchers on regular distribution lists includes:

Agricultural Officer, U.S. AID/Nicaragua;

Department of Economics, University of Rio Grande do Sul,
Brazil;

School of Humanities and Social Sciences, Bath University,
England;

Institute of Anthropology, University of Ceará, Brazil;

Center of Development Studies, Central University of Venezuela;

Planning Board, U.S. Foreign Service, Ecuador; and
Central Bank of Chile.

In addition, many other persons have received Land Tenure Center publications upon request. About 2,700 copies of the most recent Available Publications List were distributed, and approximately 450 requests for materials were filled in the following three months. A few examples of such requests are noted below:

The Food Research Institute of Stanford University asked for "The Nature of Shifting Cultivation in Latin America," and four other papers.

A professor at Harvard Law School requested "The Economics of the Property Tax in Rural Areas of Colombia."

The Philippines Rice and Corn Administration sought four papers, including "Economic Knowledge and Participation in Farmer Decision Making in a Developed and an Underdeveloped Country."

The United Nations Research Institute for Social Development requested three papers on campesino unions.

The Instituto de Estudos para o Desenvolvimento Social e Econômico asked for a number of papers for use in their courses and publications.

A professor of sociology at the National University of Colombia asked for many papers for his personal use.

Other requests in this three month period came from virtually every Latin American nation, from most countries of Western Europe, and from such places as Liberia and Indonesia.

While many papers are published in English, an attempt is also made to publish in Latin American languages:

Spanish monographs on three Colombian studies partly sponsored by the Land Tenure Center are still available for distribution. In addition, at least 17 Spanish papers by LTC authors have been published in Colombia in the IICA-CIRA mimeograph series.

Reforma Agraria en Chile, a monograph by William C. Thiesenhusen, has just been published in Santiago and is available through the Land Tenure Center.

A research paper by E.A. Wilkening, José Pastore, and Fernando A.S. Rocha, "Agriculture and Man in the Federal District, Brazil," was issued in Portuguese in March 1968. The authors plan Portuguese publication of a monograph on their extensive Brazilian colonization studies still in progress. Also, LTC Training and Methods No. 1 is available in Portuguese.

Preliminary reports in Spanish have been compiled on Bolivian agriculture, covering the economic, social, and political effects of the 1953 Reform; the history, organization, and function of rural educators; and the history and role of peasant sindicatos. The reports total five volumes.

Presently, Spanish translations of Guatemalan studies by Lester Schmid are completed or under way at the University of San Carlos. His thesis, "The Role of Migratory Labor in the Economic Development of Guatemala," has been translated, and a summary version published in Economía. Schmid's paper "Productivity of Agricultural Labor in the Export Crops of Guatemala: Its Relation to Wages and Living Conditions" (LTC Reprint) is in the process of translation, as is a LTC Research Paper by George Hill and Manuel Gollas, "Minifundia Economy and Society of the Guatemalan Highland Indian."

Four other LTC reprints are now being translated into Spanish at Chapingo, Mexico. The four papers concern supervised credit in Chile, informal credit in Chile, the comparative post-reform role of the peasant in Bolivia, Venezuela, and Mexico, and the nature and results of the Bolivian Revolution.

In addition to our own studies and publications, the Land Tenure Center has developed a significant collection of published and unpublished material relevant to the issues we have studied.

The Land Tenure Center Library specializes in the collection of materials dealing with agrarian reform, social change, and economic development in Latin America. (In addition to material on Latin

America, the library has 500-600 items dealing with Africa and Asia.) Nearly 5,000 items have been added in the past year. The primary sources for the material are government agencies, universities, private organizations, and commercial book dealers in Latin America. In addition, items are ordered and/or received from U.S. government agencies, international agencies, U.S. and foreign universities, individual researchers, and private organizations in the U.S. and foreign countries outside of Latin America.

The majority of the materials gathered are pamphlets, unpublished research reports, and other soft-bound items, which are classified by subject in vertical files. These non-book materials now number over 10,000 and give a unique quality to the library.

The materials designated as books are hard-bound editions or publications which are more readily available through normal channels. The library has over 4,000 books which are arranged by the Library of Congress classification system and indexed in the LTC Library's catalog, as are the file and reference items.

The reference section contains about 1,500 items including census reports (agricultural and general), agricultural and economic development plans of various governments, statistical abstracts, national bank reports, reports from the ministries of agriculture, dictionaries, atlases, bibliographies, and reports of agencies such as Pan American Union, Rockefeller Foundation, Inter-American Development Bank, International Monetary Fund, and others concerned with economic development, technical assistance, etc.

The library's microfilm collection is currently being strengthened. Approximately 100 microfilms have been purchased, primarily theses done in U.S. universities, and more recently, theses from Latin American universities. A subscription has been placed for the JPRS Translations on Latin America, on microfilm, which began in January 1969.

Approximately 200 newspapers and periodicals are currently received by subscription or on an exchange basis from other institutions. Many of these are in Spanish and Portuguese. Articles of interest are indexed, and cards for them are included in the general catalog.

Although the library has been open only 50 hours per week, the use has increased greatly. Each week over 150 items are circulated on campus alone, and an average of 125 people visit the library to study or borrow materials. In addition, 5-10 mail requests for material or information are received and answered weekly. Inter-library loan requests have recently been filled from IRI Research Institute, CUNA International, Inc., Nigerian Ministry of Lands and Housing, University of Texas, and University of Miami. The

Library has also loaned materials or supplied information to individuals at University of Nebraska, University of Copenhagen, Xavier University, Free University of Berlin, and the Food Research Institute, among others.

Other institutions interested in setting up similar libraries, such as Cornell University and Ohio State University, have sent people to inventory the holdings of the Land Tenure Center Library. The staff here have assisted them with this and with organizing a specialized subject heading list.

This library has also been widely used by the many visitors to the Madison campus. Over 80 professionals visited the Center during 1968 for consultation with Center staff. These individuals came from AID and other U.S. government agencies as well as from government agencies in Latin America, Europe, and Asia. Representatives from international agencies such as the United Nations and the Organization of American States as well as universities and research agencies from all over the world were among visitors this past year.

The number of recorded off-campus visitors from various agencies, in addition to researchers who visited the library, was as follows:

AID	2
Other U.S. government agencies	3
Foreign governments	6
U.S. universities	22
Foundations and other U.S. private agencies	16
International agencies and foreign agencies including universities	34

Although our individual publications have had wide circulation and use and our library has become a center of specialized material on land reform and rural institutional change and development, this mass of material must be analyzed and synthesized to make it most useful to the many professionals and administrators who cannot read all these materials or visit our library. There is a major professional task involved in constructing a framework of ideas around which these various research results can be synthesized so as to make them functional.

As an example of the nature of the material we have to work with, we are attaching (Appendix III) a summary of some of the

research on the issue of farm size and productivity. This summary is only a crude beginning and is still very incomplete. It was developed in a short time, only for purposes of illustration. It needs to be incorporated with a wider set of ideas and theoretical constructions. But it does provide an example of the kind of analysis and synthesis we expect to develop within the next year as we address ourselves to the mass of available material. We hope to present all the evidence now available with respect to certain very germane questions in the field of land reform and agricultural development. The resulting publication will summarize and integrate not only our own research findings over the seven years of effort under this contract, but will incorporate as well the findings of most other studies in these fields.

FIELD RESEARCH REPORTS

BOLIVIA

Ronald J. Clark
Assistant Professor, Agricultural Economics

I. Background on the Bolivian Land Reform and Economy

Before the Revolution of 1952, Bolivia's peasants lived under conditions approximating serfdom, while the society, the economy and the political system were dominated by a relative few who owned and controlled the land and other resources. Most peasants lived under a tenure system which granted them access to small plots in return for heavy--and unpaid--farm labor and personal service obligations to their landlords.

The land reform following the Revolution was the most rapid and massive undertaken anywhere in Latin America. Under the Agrarian Reform Law of 1953, all peasants became owners of the parcels they had been allotted previously in exchange for labor obligations, and unremunerated farm labor services became illegal. The redistribution of property rights quickly ended exploitation of the peasant masses. Moreover, the new government immediately incorporated the peasantry into the political system by making suffrage universal and by encouraging the formation of peasant unions through the new Ministry of Campesino Affairs. Peasant representatives were elected to Congress, giving the campesinos direct access to the President.

From 1952 until 1956, inner turmoil in Bolivia was not conducive to either foreign or local investment in the economy. However, from 1956--the year of economic stabilization--until 1959, there was a gradual restructuring of public and private institutions and a growing confidence in the now-stable government.

Since 1960, the Bolivian economy has registered impressive growth. During the period 1960-1965, an average growth rate of 5 to 6 percent in real terms was maintained. In 1966, growth exceeded 6 percent and was accompanied by monetary stability, rising domestic savings and a favorable investment climate. If these rates are maintained, they will double the domestic product in approximately 13 years and the per capita product in 24 years.

Bolivia still is a predominantly rural nation, with at least two-thirds of its estimated 4,337,000 population on the land. Using a mean family size of 5.0 or 5.5 members, this means that some 500,000 to 600,000 peasant families live in rural areas and gain their livelihood from agriculture. For many years this will continue

to be the case; since the rural population is increasing by an estimated 60,000 to 75,000 per year (or 12,000 to 15,000 peasant families).

While new employment opportunities are being created in the industrial and service sectors of the urban areas, they are not sufficient to change rapidly the over-all structure of the Bolivian economy. Perhaps as many as 90 percent of the 12,000 to 15,000 new peasant families per year must continue to earn their living in agriculture. In essence the development problem in Bolivian agriculture is to provide sufficient income earning opportunities not only for the rural population increase, but also for the entire rural population so that per capita income rises. Such an increase will, in part, create the necessary conditions for a more rapid expansion of the markets for locally-produced industrial and consumer commodities, thus giving an impetus to economic development.

II. The Land Tenure Center Program

The Land Tenure Center began work in Bolivia in 1964. Based on a first survey, a proposal was made to explore several related facets of the only massive land reform in Latin America outside Mexico and Cuba. Specifically, it was decided to investigate and document:

1. the economic, social and political changes resulting from the changes in tenure status under the 1953 Agrarian Reform Law;
2. the changes since 1953 attributable to programs other than land reform (i.e., programs initiated by various international and private agencies);
3. land tenure and rural development problems, so they may be given consideration in government planning.

To accomplish these research objectives, the Land Tenure Center joined with the Inter-American Committee for Agricultural Development (CIDA), and began work in September, 1965, with an inter-disciplinary team under the direction of Professor Ronald Clark, University of Wisconsin, and a Bolivian counterpart, Ingeniero Celso Reyes of the National Agrarian Reform Service. The team included eleven economists and sociologists drawn from the United States, Bolivia, Colombia, Argentina and Ecuador, and a geographer from England. Forty additional persons have been involved in this effort as interviewers, tabulators, secretaries and research assistants. Field work was completed in June, 1968, bringing the official LTC-CIDA project to

an end. From July 1968 to March 1969, a final report evaluating the Bolivian agrarian reform will be drawn up, involving OAS personnel in Washington and Land Tenure Center personnel in Bolivia.

During the entire period during which this study has been under way, the local U.S. Agency for International Development (AID) Mission has cooperated with the project in terms of considerable financial assistance, and findings have always been communicated to the Mission. Work has been agreed upon and carried out in close cooperation with the Ministries of Agriculture and Campesino Affairs and with the National Agrarian Reform Service, all of which have lent personnel for the study.

Methods

Studies relating to this project were carried out in ten areas located in different parts of the country. In each area, three to five pre-reform agricultural units were selected for intensive study. These were former haciendas or free-holding communities (where title to land is in the name of the community). Data have been acquired through informal interviews followed (once rapport was achieved) by questionnaires. These intensive studies of different tenure groups have been supplemented by brief visits to other properties and communities in the same and other areas.

Findings

The various changes initiated on all levels in 1952 are only now beginning to take form in newly-defined political, economic, and social structures.

Economically, the reform has affected the market structures, agricultural production, and income distribution. The peasant now is able to produce what he wants and sell it where he pleases, although time was necessary for these adjustments to take place. The studies reveal that food marketed in pre-reform Bolivia came primarily from the landlord's portion of the farm (usually managed in absentia). Thus the land reform of 1953, in combination with rapid political change, immediately disrupted both production on the landlord's portion of land and the transporting and marketing of agricultural produce. On some farms this land was idle until peasants and their local unions received assurance that they could farm this property. The full market flow to cities was resumed after several years, during which new market fairs emerged in the countryside and trucker-assemblers appeared in large enough numbers to replace the gap in the marketing system created by the elimination of landlords.

These disruptions, rather than subdivision of land among peasant families, were primarily responsible for minor declines in production and decreases in the flow of food to the cities in the years immediately following the reform.

The reforms also have had dramatic effects on agricultural production. In many areas, peasants--working within the structure of new incentives and nearer to markets--began to farm lands more intensively than they ever were worked under landlords. Preliminary findings indicate that agricultural production on at least 30 percent of the holdings has multiplied severalfold as a result of a shift from the traditional crops of corn, potatoes, and alfalfa to labor-intensive vegetable crops. In about 40 to 50 percent of the cases analyzed, production has remained approximately constant; in 20 to 30 percent of the cases traditional crops continue to be grown but production has increased as a result of the peasant acceptance of fertilizer and improved seed. In a few cases crop production has decreased because peasants have less animal manure available than did landlords.

The fact that peasants could devote all their energies to the cultivation of their own lands--and that they had access to land--effectively redistributed incomes on a massive scale from the landholding class to the peasants. These changes are reflected in the increased income levels of peasant families. One sees today many new houses and schools, and peasants are purchasing a variety of consumer goods, including manufactured goods and agricultural products traded from other sections of the country. It is easy to document a distinct increase in the level of living of peasant families generally, but especially in those areas where opportunities for change were not precluded by isolation and lack of markets for agricultural produce.

Social relations also have been affected by the tenure changes. In pre-reform Bolivia, the Indian families on the large landholdings were tied to the land and the sale price of large farms included the value of their services. Socially, they were markedly inferior to the landholding class. Generally, landlords saw no reason for educating their farm labor and many reasons for not doing so. With the reform, the basis of the distinction between landlord and peasant was abolished. While class differences still persist, the Bolivian peasant now is an integral part of his society, albeit of the lower strata; more importantly, he is accepted as such by peasant and nonpeasant alike. Gradually the values of both groups have changed and now education and individual achievement rather

than ethnic origins are the more important criteria for judging one's place on the social scale.¹

As a result of these changes in the social structure, peasants have gained access to wider opportunities. Education in rural areas now is much more widely available than prior to reform and this, together with the changes in land tenure and their increased political power, has contributed to the social mobility of the peasants.

The economic and social changes outlined above have occurred in concert with political changes. In the course of revolution and land reform, strong peasant unions emerged. These sindicatos initiated and carried out the land reform in their local areas, filled the organizational vacuum created when the landlords and farm managers fled the rural areas, and became the political and legal representatives of their communities. Gradually the peasant union movement in most areas has been institutionalized into a national organization which has direct access to the government through the Ministry of Campesino Affairs, as well as directly to the President.

The mass of rural peasants now vote for the Bolivian President, elect their own representatives and through their network of rural organizations come together to resolve common problems, pressure elected officials, and map out development objectives. Today the Bolivian peasants are an integrated, functioning part of the political process from which they previously were completely excluded.

¹Richard W. Patch notes that "the campesino class is not a mass of individuals eager to leave their relatively poor agricultural lands and to ape the manners and mores of mestizos, as in a process of simple social mobility. Particularly in the Cochabamba Valleys, the campesinos are undergoing a genuine process of acculturation in the sense that entire communities are beginning to display behavior characteristic of the dominant Spanish-speaking culture. This is more unusual than it sounds, because a normal pattern of change in the Andes is for the individual to become a mestizo by leaving his highland community of birth, rejecting his Indian background, and assuming all possible mestizo status symbols. The individual who becomes a mestizo by this route, however, finds himself part of a despised 'cholo' minority in a world dominated by urban upper classes to which he cannot aspire. This is properly described as a process of social mobility--an individual affair in which neither the Indian nor the mestizo communities are importantly affected.

"In the formerly Indian communities of Bolivia, on the other hand, the group itself is the agency regulating the adoption of mestizo traits. The individuals within the group proceed at the same pace, with few persons standing out as 'more mestizo' than the others." ("Bolivia: The Restrained Revolution," The Annals of the American Academy of Political and Social Sciences, Vol. 334, 1961, pp. 120-30.)

Recommendations

Many of the economic gains realized over the past 15 years in the rural section--especially the increase in per capita income which resulted from increased access to land or other economic opportunities--may be foregone if more emphasis is not placed on rural development programs: agricultural research, extension, and agricultural credit in the traditional areas (highlands and valleys), as well as provision for services such as health, education, and community development. The present subsistence and employment opportunities created by colonization programs in the tropical areas--as well as new urban employment opportunities--are not sufficient for the increasing urban and rural population. There must be greater emphasis than in the past on creating subsistence and employment opportunities in the traditional sections by intensifying agriculture. If not, these areas will not be able to maintain, let alone increase, the peasants' present level of per capita income.

Closely related to the problem of agricultural investment and more intensive land use is the question of creating a greater degree of security of expectations by establishing clear land titles. Besides mitigating conflicts over land among peasants and between peasants and former landlords, titles give peasant-owners the security necessary for risking capital to improve their properties and thereby increase productivity. Titles also are crucial to the peasant for obtaining credit from the Agricultural Credit Bank and other financial institutions, and for stabilizing the rural economy through such measures as institution of a land tax, development of local government institutions and fostering of peasant identification with the national government.

As a result of early identification of the problem by the Land Tenure Center team and subsequent recommendations, a government commission studied the importance of titles to peasants, the expropriation procedures and how they might be shortened, and the reorganization necessary in the National Agrarian Reform Service to distribute titles more rapidly. The principal recommendation of the commission, which included Bolivian personnel from the LTC research group, was a plea for the creation of mobile teams of topographers and agrarian judges to speed up title distribution. How this recommendation is being implemented is described in the next section.

Present Work of the Land Tenure Center in Bolivia

According to the Agrarian Reform Law of 1953, rural property ownership is recognized only through possession of a land title issued by the National Agrarian Reform Service. Over the past 14

years, land has been expropriated and some 307,645 individual and collective titles have been distributed to 201,196 peasant families, involving 4,090,389 hectares of cultivable and 3,734,670 hectares of pasture lands. To date not more than 40 to 45 percent of the rural families affected by land reform have received titles.

Title distribution has not progressed more rapidly because of unnecessarily long expropriation procedures and shortage of administrative funds. As a result the local USAID Mission to Bolivia has initiated a project in cooperation with the National Agrarian Reform Service of partially funding the recommended mobile units. The object of the project is to accelerate the process of distribution and ratification of land titles to approximately 200,000-225,000 peasant families who have claims to the lands they presently occupy; to 6,000-8,000 landowners who retain as yet unconfirmed rights to some of their pre-reform holdings, and to an estimated 100,000 peasant families with land in freeholding communities.

The schedule of the project has developed as follows: on April 1, 1968, three mobile units began work in the department of La Paz. Later, an additional unit financed by the Bolivian government was added.² In seven months, these four units have done the topographic work necessary for distributing more titles than were distributed by the National Agrarian Reform Service in the preceding five years. At least four and possibly six units will continue work on an experimental basis through March 31, 1969, when it is planned to launch a three-year program of title distribution and registry. Within these three years, the program will complete title distribution to nearly all Bolivia's rural peasant families and landlords.

Because of the interest of USAID in land titling, the local Mission has contracted with the University of Wisconsin to retain the services of the LTC representative. He will advise and monitor the title program through April 30, 1969, when it is anticipated that the Mission will contract with the University for continued advisory assistance to the titling program as well as for evaluation and research services.

Specific Land Tenure Center objectives in Bolivia between September 1, 1968 and June 30, 1969, funded under the regional contract, are:

²This does not represent the Bolivian government's only contribution to this program. Besides financing the central Agrarian Reform Service office in La Paz, the government supports eight departmental offices without which the mobile unit titling program could not be carried out.

1. to complete the final joint report of the LTC and CIDA;
2. to continue studies already under way in freeholding peasant communities to determine how the tenure structure and agricultural systems of these communities differ from the present systems functioning on ex-haciendas;
3. to amplify and edit a study of peasant unions now in rough draft form;
4. to rewrite case studies already in rough draft form; and
5. to research and write articles on:
 - a. the growth of new peasant urban centers;
 - b. the social functions performed by marketing centers (tambos) in attracting peasants to the urban centers of La Paz.

III. Staff and Collaborators on LTC/CIDA Staff in Bolivia, 1968

Note: Continuing staff as of January 1969, appear with asterisk preceding name; personnel at beginning of the year are unstarred. Staff is diminishing as project nears completion.

- | | |
|----------------------|--|
| 1. *Ronald J. Clark | Assistant Professor of Agricultural Economics and Co-Director LTC/CIDA |
| 2. *Celso Reyes | Engineer, National Agrarian Reform Service and Co-Director LTC/CIDA |
| 3. *Roberto Gumucio | Coordinator |
| 4. Oscar Delgado | CIDA/Sociologist |
| 5. Gonzalo Gonzales | BID/Sociologist |
| 6. Marcelo Sangines | Sociologist |
| 7. Eduardo Ballester | Economist |
| 8. Carlos Camacho | BID/Economist |
| 9. Marcelo Peinado | Economist (Student) |

10. Guillermo Gallo Mendoza Crop and Livestock Specialist
11. René Gonzales Crop and Livestock Specialist
12. *Katherine Barnes Anthropologist
13. Evelyn Clark Anthropologist
14. *Luis Antezana Social Scientist
15. *Hugo Romero Social Scientist
16. Cristobal Días Lawyer
17. Alejandro Gumiel Lawyer
18. Yolanda Kallmannsohn Bilingual Secretary/Administrative Assistant
19. Gloria de Reyes Bilingual Secretary
20. Gabriela de Villarroel Bilingual Secretary
21. Lucha Chaly C. Secretary
22. Carmen Iriarte Secretary
23. *Sonia de Parada Secretary
24. *Mirna Zambrana Secretary
25. Rosario de Zeballos Secretary
26. Graciela de Cáceres Typist
27. Zaida García Typist
28. Abraham Guzmán Topography Specialist
29. *Carlos Hochmann Photographer
30. Luis Jordan Draftsman
31. *Clemente Quispe Office Clerk
32. *Manuel de Lucca Researcher
33. *Ricardo Luján Researcher
34. *Mauricio Mamani Researcher

35. *Victor Miranda	Researcher
36. *Francisco Sanchez	Researcher
37. Hernan Torres	Researcher
38. *Genaro Flores	Interpreter
39. *Juan Torrico	Interpreter
40. Fortunato Yupanqui	Interpreter
41. Amadeo Montecinos	Head of Statistics Department
42. *Gonzalo Zabaleta	IBM Supervisor
43. *Jaime Martinez	IBM Operator
44. Carlos Añe	Coder
45. Alberto Ergueta	Coder
46. *Francisco Fabré	Coder
47. Armando Lara	Coder
48. *René Miranda	Coder
49. Carlos Salgueiro	Coder
50. *Alfredo Santacruz	Coder
51. Ruben Terrazas	Coder
52. *Melquiades Heredia	Chauffeur
53. *José Paredes	Chauffeur
54. *Felix Monroy Y.	Messenger and Assistant to Co-Directors

Cooperating Agencies

National Agrarian Reform Service
Ministry of Agriculture, Government of Bolivia
Ministry of Campesino Affairs, Government of Bolivia
Inter-American Committee for Agricultural Development (CIDA)
U.S. Agency for International Development (AID)

IV. Publications

(The following titles represent materials prepared or published as a result of LTC-Bolivia efforts in 1968.)

Ronald J. Clark. "Land Reform and Peasant Market Participation on the Northern Highlands of Bolivia." Land Economics, XLIV (May 1968); LTC Reprint No. 42.

_____. "Problems and Conflicts over Land Ownership in Bolivia," Inter-American Economic Affairs, Vol. 22:3 (Winter 1968).

Marcelo Peinado Sotomayor. "Land Reform in Three Communities of Cochabamba, Bolivia." Unpublished Ph.D. dissertation, University of Wisconsin, 1968.

Marcelo Sanjinéz Uriarte. Educación Rural y Desarrollo en Bolivia. La Paz: Editorial Don Bosco, 1968.

LTC/CIDA Staff. "Estudio de la Estructura Agraria en Bolivia." Various volumes in draft form; final version in preparation.

CHILE

John Strasma*

Associate Professor;
Agricultural Economics and Economics

I. Trends in Chilean Agriculture

Chile's agricultural sector has for years been blamed for many of that nation's problems. Despite numerous showplace farms and the efforts of several hundred farm operators who are commercial farmers in the modern sense, the over-all picture in the Central Valley as late as 1965 was dominated by the traditional fundo and the equally traditional minifundia nearby. Substantial acreage was left idle or used extensively by absentee owners who blamed government price, labor or credit policies, while unemployed rural workers moved to swell the urban fringe population.

On the eve of land reform in 1965, some 60 percent of the total number of farm units contained less than 1.5 percent of the tillable land, while the 1,800 largest farms--0.7 percent of the total--occupied 65 percent of the tillable land in properties of 2,000 or more hectares.

These land arrangements in their essentials date from the first period of Spanish settlement, and through the years have led to all the classic problems associated with such tenure systems: absentee ownership, exploitation of the peasant, and deep class differences; under-use and low productivity of the land; chronic domestic food shortages especially since the 1930's, with Chile becoming a net importer of food products. Imports in some years have reached \$200 million in agricultural commodities, while exports have averaged about \$30 million worth of agricultural products, mostly lumber and newsprint.

Agriculture early became and has remained the most important source of employment in Chile, although mining figured as the leading economic activity from the turn of the century until the Great Depression. Today copper alone accounts for about 70 percent of the value of all exports and for 14 percent of government tax revenues. Agriculture employs about 30 percent of the labor force, but contributes only 9 percent to the gross national product of Chile. Yet Chile possesses enough land and water resources to be self-sufficient in most agricultural commodities (outside tropical fruits, coffee, cotton, and the like), and the unfavorable trade balance and contribution to the national economy reflect the poor performance of this sector.

*Professor Strasma was LTC Country Director for Chile, 1966-1968.
Professor Joseph R. Thome succeeded him in this position in June 1968.

Agricultural output in the farm year 1967-68 rose 3.1 percent over the previous year, but a setback is expected for 1968-69 because of the drought. The gain of 1967-68 was largely achieved by the 4.2 percent increase in the animal products part of the index; this in turn reflected a 10 percent increase in poultry products and 4.8 percent in dairy products. Beef remained at the level of the previous year, while grains and crops were up about 1.5 percent. (There were substantial variations among crops, however--for instance, corn down 17.5 percent, wheat constant, and oats up 38 percent.)

As of September 1968, the drought was expected to reduce the area under irrigation in 1968-69 by 44 percent, or about 500,000 hectares. Drastic reductions have been ordered in the area sown to grains and forage; dryland grazing is virtually nil for lack of rainfall to germinate seeds. About 37 percent of the existing livestock will have to be slaughtered quickly for lack of feed. At the same time, the reduction in plantings and herds means a reduction of some 12 million man-days of employment; the government is attempting to maintain some employment by easy credit to landowners who hire men to work on roads, canals, etc. Public works are also being pushed in the same zones.

Agricultural imports continue to outrun exports, at about U.S. \$150 million for the present year, or \$5 million more than a year ago. The principal imports continue to be wheat, dairy products, and beef. Fruit and vegetable exports were steady at some \$9 million yearly.

The new agrarian reform law passed in August 1967 attempts to confront the problems arising from the latifundia, providing for the expropriation of large fundos with the landowner retaining 80 hectares (200 acres) of irrigated bottomland or its productive equivalent (or in cases of the most efficient and progressive farmers, 320 hectares). The law provides for indemnization (partly in cash, partly in bonds), establishes a 30-year term in which the beneficiaries pay for the land, and establishes the asentamiento (group farming on a cooperative basis) as the transitional phase of land tenure. The definitive farm organization is left pretty much to the beneficiaries. After the three-year transition period, the law provides for the beneficiaries to choose, in town-meeting style, among individual parcels, shares in a production cooperative which would hold title to the land (an arrangement particularly appropriate for fruit, livestock, and lumber operations), or a combination of family parcels with some land held individually and the rest farmed in common.

Before the new law was passed, the Frei government moved to implement the 1962 agrarian reform law which provided a legal basis for the expropriation of abandoned or notoriously badly-farmed lands. Studies by various economists agree that output has risen sharply on most farms on which the asentamientos have been active for one or two years, although few have yet attained levels of the hundred or so best-run private farms. In the meantime, important measures also are being taken to assist the small farmers, as well as the tenant farmers on fundos not subject to expropriation, and other rural workers. The campesino "syndicalization" law passed in April 1967 permits organization of farm workers into unions, smallholders committees, cooperatives, etc., which gives the peasants more bargaining power with landowners and enables them to deal more effectively with relevant government agencies and other institutions.

Since 1965 the government Institute for Agricultural-Livestock Development--INDAP--has aggressively pursued its part in agrarian reform: services to rural laborers and smallholders. It has given credit to more than 60,000 smallholders who otherwise would have no access to cheap institutional credit. INDAP also has moved dramatically on behalf of farm workers toward equality before the law: promoting farm unions and helping workers sue employers who refuse to pay legal minimum wages or otherwise infringe existing laws favoring workers. In late 1968 the executive vice president of INDAP, Jacques Chonchol, resigned to protest what he considered the weak official support for the agrarian reform program. While some observers expect a return toward traditional social relations in the countryside, this seems unlikely. Many workers now know something of their rights and have had a taste of dignity; many employers have adopted modern forms of personnel practices and have become convinced of their advantages.

Meanwhile, the Agrarian Reform Agency (CORA) had, by mid-1968, named 640 farms in expropriation proceedings, but only 260 of them had formally-established asentamientos, with only 9,050 families. The expropriated farms include 1.2 million hectares, of which 160,000 are irrigated; those actually in CORA hands and operating as asentamientos by May 1 had 810,000 hectares, of which 90,000 are irrigated.

The first titles were distributed in the Choapa Valley asentamientos, to 333 families in October of 1968.

Before the election campaign of 1964, the Christian Democrats and other parties in the opposition generally agreed on a goal of 100,000 families by 1970 as the appropriate target for land reform. The previous government had promised 12,000 by 1964, and attained 1,040 or 9 percent of its announced goal (counting the assignee of a dwelling and a tiny garden as a beneficiary, though he was forced to work for his neighbors to earn a living). By the end of 1968 some 12,000 families may actually be established in asentamientos.

While this is substantially more reform and redistribution than has occurred in many Latin American countries, it is keenly disappointing to the Chilean government and to all parties of the Left to Center. Various factors have been blamed: lack of trained staff, defects of a procedural sort in the Alessandri law, resistance by functionaries of other agencies who refuse to cooperate wholeheartedly with land reform agencies, etc. There are also theories that attribute slow progress to a "sell-out" by the government to the "economic Right," to the National Party (Rightist), or to anti-reform elements within the governing party.

Actually, however, various factors seem to be involved, related to the policies set by the land reform agencies and the rest of the Chilean government. I submit these as hypotheses worth testing:

- 1) The 100,000-families goal presupposed an absolute primacy to land reform which the government did not in fact grant; schools and programs for the 'marginal' urban population got more attention and far more funds.
- 2) A high degree of technical perfection, compared to other historic reforms, has been pursued. Beneficiaries get a full range of services from the start, including credit, coops, technical assistance, home economists, etc.
- 3) Against the advice of every economist involved, CORA has invested heavily in housing and is largely committed to providing or improving a dwelling for each beneficiary family; CORA's staff is heavy on engineers and architects and has only a handful of marketing men. Yet marketing the increased production will be crucial in determining whether the beneficiaries will be able to pay for the houses being pressed upon them.
- 4) While staff was a constraint at the outset, there is now a financial constraint if the reform is to give this high standard of service to a much larger number of families. Land reform receives about 3 percent of the total national budget, current and capital, compared to 13 percent for education and 11 percent for defense. Even the state railways receive a subsidy to cover operating deficits about as large as the annual fiscal contribution to land reform.

The classic choice of guns or butter is, happily for Chile, rather one of many families modestly improved or some families with substantial improvement from the start; it is of more urban housing or more rural housing; it is subsidizing redundant railroad workers or giving opportunity to more underemployed farm workers. It is also, of course, the continuing effort to halt or water down social reform by those who expect to lose thereby.

II. The Land Tenure Center in Chile: Objectives and Results, 1963-68

The research conducted or assisted by the Land Tenure Center in Chile since 1963 covers many aspects of agrarian reform, agricultural development, and rural modernization in Chile. However, the precise order in which subjects were tackled and the specific research objectives were determined in almost all cases by the priorities and interests of cooperating Chilean scholars and organizations. The rather substantial body of knowledge described below is thus not the exclusive contribution of the Land Tenure Center, but in each case the LTC had some major part in its design and execution, and responsibility for the scientific rigor of the research.

A. "Establish a comprehensive body of knowledge on ownership, tenure, and agrarian structure."

The basic compilation and analysis of all previous published and unpublished studies on Chile's land tenure and agrarian structure was issued in 1966 by the Comité Interamericano de Desarrollo Agrícola (CIDA).¹ The LTC/Chile team shared office space and facilities with the CIDA team and conducted field studies that filled gaps in existing knowledge. LTC team members, for instance, did the work on profit-sharing plans, on the results of the Catholic Church experimental land reforms, and on the work of the Caja de Colonización Agrícola.

The Land Tenure Center continues to sponsor research on aspects not completely covered in the CIDA report, and any revised edition will lean even more heavily on LTC work than did the first. For example, there are new studies of migrant laborers, sharecropping arrangements, water law, taxation, informal credit, and contract farming. The LTC/Chile team is currently deepening knowledge of water problems, the situation of smallholders, and marketing problems, including exports, that face the beneficiaries of land reform.

B. "Analyze alternative methods of achieving land reform goals."

One of the first studies made by the Land Tenure Center team in Chile was a survey of all non-traditional tenure or farm organization arrangements that could be found in the Central Valley. Several varieties of profit sharing were identified, and a detailed study was made of how they worked and of landowners' and workers' attitudes toward the new tenure forms.

¹CIDA, Tenencia de la Tierra y Desarrollo Socio-Económico del Sector Agrícola (Washington: 1966).

When two bishops of the Catholic Church in Chile decided to distribute several of their farms to those who worked them, the Land Tenure Center collaborated with the church agency set up to administer and oversee the reforms (INPROA) on studies of the different farming arrangements on these projects and the economic results for the beneficiaries. Land Tenure Center researchers also studied in detail the process and results of the land tax reassessment based on potential production.

Finally, the LTC/Chile team sponsored two different studies of the results of private partition and sale of large farms, sometimes urged as another complement or alternative to reform. Negative factors discovered in the first study contributed to enactment of a prohibition of such private divisions without CORA controls. A year later, the second study uncovered two ways in which the prohibition was being evaded, as well as further evidence that uncontrolled private division has high social costs.

Land Tenure Center research, in Chile as elsewhere, has been problem-centered and policy-oriented. Researchers are expected to analyze alternatives to current policies and to help communicate these alternatives to policy makers and all other interested parties.

C. 'Document all significant aspects of agrarian reform programs.'

Both Chilean and North American members of the LTC/Chile team have followed closely the ongoing reform programs. They have written several "popular" articles for the U.S. and Latin press, and foreign and Chilean newsmen have been given background information and frequently have been taken along on trips to the field in order that their reporting be better informed. Excellent photos and movies were prepared and have been shown widely in Chile and abroad.

Nonetheless, no systematic, diary-type log has been kept on the reform. FAO's regional office in Santiago keeps newspaper clippings from the Chilean press, and Chilean weeklies give fairly good coverage to current issues of a polemical sort. We did try, but failed, to convince several high-level CORA people to keep a diary or write an autobiographical essay on the problems they faced, the decisions they made, and conclusions they drew that might be of benefit to policy makers of other countries trying to carry out land reform.

In one area, however, we perhaps have accomplished something. LTC/Chile has sponsored one field study of beneficiary incomes before and after reform. The only such study to date made by a scholar not connected with the land reform agencies was cited by the Chilean delegation to the Second World Land Tenure Conference in Rome in 1966 as impartial proof of the success of one aspect of the reform.

We are now trying to obtain detailed income and cost data on various other reform projects, despite great problems (except in one case) in obtaining reliable data on pre-expropriation output, costs, profits, and wages to compare with our data on operation of the same farm as an asentamiento. Most of the projects were expropriated for under-utilization of the land; if the quality of records kept by the ex-owners is any indication, expropriation was certainly warranted.

- D. "Identify political forces concerned with reform, analyze their methods of influencing policies and procedures, measure their impact on the program and the impact of the program on politics."

Outside the United States, political science is the least known of the social sciences; no researcher, national or foreign, can engage in political research in Latin America without national political groups raising questions about his motivation and intentions. But studies can be done successfully if the serious and scholarly intent of the research is established at the outset. The Land Tenure Center has sponsored two major studies and thus shed light into an area very little researched by scholars in Chile. Professors Marion Brown and Maurice Zeitlin of Wisconsin have looked at campesino labor organizations, and Professor Terry L. McCoy, LTC fellow now at Ohio State University, studied the evolution of agrarian policy from the beginning of Alessandri's presidential term through the enactment of Frei's new reform law in mid-1967, with particular attention to the persons and power groups that promoted or resisted each alternative policy, and the changing pattern of their effectiveness.

Among the hypotheses McCoy tested was the theory that incremental reform is more effective than massive, drastic reform in a pluralistic political system such as Chile's. A second hypothesis explored the reasons Chile was able to carry on a land reform in the second half of this decade, just when most Latin American governments no longer even give lip service to the reforms they grudgingly promised at Punta del Este. McCoy also spent considerable time in the field evaluating and describing the mechanisms by which both beneficiaries and staff of the reform agencies fed back their experiences and ideas to the political forces, and the extent to which this enhanced the effectiveness of the reform programs. As a dramatic contrast, he concluded with a case in which workers seized the farm they tilled.

- E. "Evaluate the social and economic results of agrarian reform."

While such evaluations are impossible in many countries because no reform at all has taken place, the groundwork for such studies is being carefully laid in Chile. The Land Tenure Center has made several case studies, as noted before, and has helped Chilean

universities and the Institute for Agrarian Reform Research and Training (ICIRA)² train the staff that will be able to make a definitive evaluation after the reform program has been going for several years. Several Chilean scholars have been invited to continue graduate study at Wisconsin, and many more have received practical training in field research methods on LTC projects in Chile.

The Land Tenure Center helped ICIRA carry out a "baseline" study of a 10 percent random sample of the large farms of Chile's Central Valley in 1965 and 1966. A number of studies were made and reports published by ICIRA on the basis of this field work, but the LTC objective was to obtain a reliable and extensive picture of the situation in 1965, before massive expropriation began. By 1971, many of these farms will have been expropriated, passed through the asentamiento phase, and turned over as property of the beneficiaries. Others will have been expropriated in part, and beneficiaries will be farming alongside their former patrón. Still others will not have been expropriated at all. Thus a future survey will permit a scientifically valid estimation of many economic and social results of land reform.

F. "Develop a national research capability with trained national researchers; establish channels so that research will help in policy formation."

One basic tenet of Land Tenure Center policy is that of strengthening national research capabilities and competence. In Santiago, this strengthening has been aided by a variety of Chilean and international programs, including this one. Faculties of economics at the two universities are now much stronger in agricultural economics than in 1963, and well-trained nuclei of sociologists and political scientists are beginning to appear.

The first LTC studies were largely individual efforts by a U.S. scholar with one or two Chilean assistants. These assistants then went abroad for graduate study and have since returned to major research and teaching responsibilities.

²ICIRA is a semi-autonomous agency of the Chilean government charged with training staff for the reform agencies and responsible for continuing research on methods and goals of the reform. ICIRA receives substantial assistance from FAO and the UN Development Program and seeks collaborative efforts with university scholars. Its main effort, however, has necessarily gone into training.

In a second phase, 1965 and 1966, U.S. scholars directed survey research projects in which relatively large numbers of Chilean students gained field experience in surveying, coding, tabulating, and analyzing data. In the third phase, beginning in 1966 and coinciding with budget reductions, there was a return to emphasis on the individual study of a specific problem in depth. This time, however, most of the studies were conducted by young Chilean scholars who by now were able to conceive and execute field research with much less direction than five years earlier. And by 1968, work in agricultural economics and rural sociology is generally being carried on and directed entirely by Chileans at the universities, while the bulk of the LTC effort (now partly financed by Ford Foundation funds through the International Law Program) is aimed at helping Chilean law schools create capabilities for social sciences research in subjects pertinent to modern law.

Through a series of directors, the LTC/Chile effort has followed a policy of assistance, with the result that many of its studies are known locally as student theses or as projects published by Chilean institutions. This, of course, helps those scholars and institutions get launched in the field and enhances their ability to carry on without further help. Although our hosts and closest associates are at the Institute of Economic Research of the University of Chile, we have joined in scholarly work with faculty and students of at least five university schools and two international institutes.

G. "Suggestions for the future."

Two major tasks for the future are research to assist policy makers in matters of water law and redistribution, and a thorough multidisciplinary evaluation of change in the Central Valley by comparing the situation a year or two hence with the "baseline" study made in 1965.

The water problems area is one of the main foci of present LTC work in Chile, in cooperation with Chilean government agencies and with two Chilean law schools that have requested Ford Foundation help in creating some competence for research in the social sciences. And, as stated above, the comparative study to determine rigorously the impact of land reform should be organized and carried out in 1970 or 1971, by which time enough of the sample group will have completed the reform process to permit the drawing of definitive conclusions.

The preceding overview refers to LTC research in Chile as it fits into over-all LTC objectives; most of the individual projects named have been summarized in earlier annual reports. Projects not heretofore reported are described below.

One undergraduate thesis, by Campos and Iglesias, concerns the extent to which output and incomes may rise from joint efforts to a level greater than the sum of the fruit of individualistic production. This thesis, which has only been published in Spanish, includes a test of the basic hypotheses on a large farm in the Central Valley, where initiative and group spirit have been encouraged by a profit-sharing scheme that will end with worker ownership of the farm.

Professor Joseph R. Thome of the Law School, University of Wisconsin, and a staff member of LTC, was appointed director of the Land Tenure Center/Chile in June 1968. Under his leadership efforts are being centered on encouraging, assisting, and directing research in the area of legal institutions related to agriculture and agrarian reform. The purpose of this new focus is to afford a wider scope for the analysis of the various problems and institutions under study and to encourage a 'problem research orientation' among local legal scholars.

Emphasis on the importance of law as an instrument of social control will enrich the studies of socio-economic institutions. For example, accomplishment of the goals set forth in the agrarian reform statute may, to a considerable extent, be a function of the quantity and quality of the mechanisms the law provides for application and enforcement of the various provisions.

So far as orientation of legal scholars is concerned, the idea is to encourage law schools, faculty, and students to extend their academic interests beyond the limits of abstract theories so that the living aspects of law--the law in action, in the court rooms, and in the lives of the people--will be included in their approach.

The assignment of an LTC legal researcher, Rubens Medina, to the Escuela de Derecho of the Universidad Católica de Valparaíso was one of the first ventures along these lines and may be considered successful if measured by the degree of receptiveness and response. A brief seminar on research techniques was given and at least three field research projects are in progress now.

Contacts and close cooperation are maintained in Santiago with the Escuela de Derecho of the Universidad de Chile (Cátedra de Derecho Agrario), with ICIRA's legal divisions, and with the International Legal Center team in the joint effort to create competence for research in the social sciences.

The preceding sections covered LTC research in Chile as it fits into over-all LTC objectives; most of the individual projects

cited have been summarized in earlier annual reports. Projects presently in progress include the following:

- 1) A sharecropper study, also a thesis, already has been approved by the adviser of the author, Arturo Urrutia, and consequently is now in its final polishing stage. This study will be available for distribution shortly.
- 2) Carlos Fletschner has investigated (for his thesis) marketing problems in potatoes, rice, and tomatoes. This work is in the final stages of editing and typing.
- 3) Water law problems:
 - a) A report on the functions of the emergency water allocation commission for the Aconcagua Valley was published in November 1968, the work of Rubens Medina.
 - b) A Ph.D. thesis (by Rubens Medina) on the legal, administrative, and functional problems of canal associations in the Aconcagua Valley now is in its writing stage. The final project should be ready early in 1969. Several studies on water rights allocation and use in the Putaendo Valley, both projects of Felix Lagreze and Ramiro Riobo, are under way.
 - I) Legal aspects: in the writing stage, completion early in 1969.
 - II) Agronomy aspects: at the field interview stage, with completion date difficult to predict.
- 4) Legal aspects of land reform:
 - a) Property law antecedents: this stage is almost complete and a report should be available shortly.
 - b) Legal institutions and procedures of the agrarian reform process: this aspect still is in the primary research stage and it is not possible to indicate completion date at this time. A brief report on the Santa Marta de Longotoma case, however, will be ready soon.

Thome, in addition to directing the over-all program of research, is dedicating himself particularly to these studies.

During July through September, the LTC/Chile cooperated in the organization of a Land Tenure Research center at the Catholic University in Valparaiso and is supporting its initial effort: a research project which consists of a compilation of all the legislation, decrees, regulations, etc., which affect the present land reform process in Chile.

III. Research Projects During 1968

A. WATER REFORM: A STUDY OF LAW IN ACTION

Rubens Medina

Focus

Chile's land reform law of 1967 includes a long section which restructures all existing irrigation agencies and provides authority and guidelines for the reform of water rights, vital to full use of the agricultural land in the Central Valley. The law proved timely, as Chile was stricken by a moderate drought in the Aconcagua Valley in 1967, and a disastrous drought throughout Central Chile in 1968. Rubens Medina, candidate for the Ph.D. in law and sociology at the University of Wisconsin and trained and experienced in law in his native Paraguay, followed the reform of water rights in the Aconcagua Valley during 1967 and continued there in a teaching, research, and advisory role during 1968.

Methods and Findings

Medina's first published report treats the steps taken by the government in the Aconcagua Valley in the agricultural year (May 1, 1967 through April 30, 1968), describes the problems that arose and the results, and suggests alternative solutions.

The land reform law of 1967 provides that private water rights are extinguished as of the law's promulgation, that farmers may continue using water according to previous rights until and unless their canal is intervened, and that compensation will be paid only when and if landowners can prove actual losses from reductions in their future water rights below previous legal rights. In other words, those with more water rights than they were using, or than they need for efficient irrigation, get no compensation.

Over-irrigation is a problem in parts of the valley, Medina found, and one proof that water reform was badly needed lies in the fact that in a year when total water available was only 42 percent of the average, rights were distributed according to actual needs of crops rather than according to legal water rights--and no claims at all were made against this legal measure although it was only of temporary application. Under the emergency powers provided by the land reform law for drought-stricken areas, the government was actually able to give some water to poor smallholders who had previously been unable to obtain any rights at all from adjacent

landholders. The government agency allocated them small amounts solely on the grounds that they had gardens and fruit trees and needed water.

Medina's report suggests clarification (by decree or law) of several ambiguities in the reform law as well as more adequate legal advice to the administrative agencies charged with application and enforcement. This will help avoid future litigation or delays as the national drought forces massive application of the same reform legislation that was used in Aconcagua in 1967-68.

Future legal studies will concern procedural difficulties in land expropriation, administration of asentamientos, legal systems for the producer cooperatives organized by reform beneficiaries after the asentamiento phase, etc.

B. FINANCING OF AGRARIAN REFORM

John D. Strasma

Focus

The FAO and Inter-American Development Bank are conducting a joint study of land reform finance in Latin America; Professor Strasma is participating. All figures presented here, however, are available in public records.

In Chile, as in most countries that have carried out land reform, the resources employed are largely domestic. Land, labor, and construction materials are the main inputs; certain types of machinery and fertilizers are the only inputs that must necessarily be imported in large quantities.

The required land and labor represent relatively low opportunity costs to the nation; most farms are expropriated in whole or part precisely because they are underutilized. To the country, however, there are real costs in the form of the administrative and other skilled staff, travel, and general operating expenses of the reform program. Particularly in the Chilean case, in the long run the "cost of land reform should be precisely this administrative cost, plus whatever subsidy occurs through failure to collect the full debt from beneficiaries for land, improvements, and working capital (animals, machinery, etc.).

Findings

During the first four years of the Frei government, CORA will mobilize about E° 850 million (in 1968 money; exchange rate about 8 escudos/dollar). However, much of this has been turned over two or three times in annual production credit extended and collected from harvests. During this period, about E° 175 million has gone

into administration. Since 1964, some 12,000 families have become beneficiaries, many of them during more than one year. The total of 26,200 beneficiary-family-years has cost E° 177 million (1968), or about E° 7,000 per family per year. However, it is important to note that there are strong scale economies as numbers rise. The cost per family fell from E° 13,000 in 1965 to E° 4,500 in 1968 (in 1968 purchasing power).

Where have these resources come from? Table II indicates the origin of resources used, whether for administrative costs, land purchase, or credit extended (both short- and long-term). The item "internal sources" refers principally to the amounts collected at harvest time on production loans extended to the asentamientos; CORA also receives a small share in asentamiento profits, in lieu of interest on credits and rent on the land. In 1967 and 1968, faced with a rigid ceiling on further fiscal contributions, the Corporation helped many asentamientos obtain their working capital from suppliers and the Banco del Estado; this is the "domestic credit" item. In this way, CORA's own resources go further, beneficiaries are accustomed to paying bank interest rates, but of course CORA does not have a return flow of "recoveries" the following year from these loans.

In INDAP the picture is similar, although amounts are smaller and beneficiaries much more numerous. The fiscal contribution covers operating costs but most loans are extended from amounts recovered from earlier loans and from amounts borrowed from the Banco del Estado, by INDAP or by campesinos with INDAP's guarantee of payment.

All institutional lenders in Chile, including CORA, INDAP, and the Banco del Estado, charge interest rates below the rate of inflation for loans repayable in less than five years. This subsidy means, of course, that the real value of their loanable funds decreases even with perfect repayment record, so that substantial fiscal contributions to capital are needed every year if the programs are not to be reduced steadily by inflation.¹

¹One Santiago tabloid claimed that the resignation of Jacques Chonchol as executive vice president of INDAP was forced when the Minister of the Interior announced that the "INDAP agitators" would have their wings clipped because the budget would be cut so they had no more funds with which to make loans to campesinos. Clarín, November 1968.

Table I. Uses of Funds by CORA, 1965-68 (Millions of 1968 Escudos)

	1965		1966		1967		1968 ^a	
	Amt.	%	Amt.	%	Amt.	%	Amt.	%
Administration	26.0	33	39.7	28	56.6	23	54.5	14
Land	8.3	11	13.5	10	26.1	11	40.0	10
Infrastructure	10.6	13	20.4	14	31.4	13	60.0	16
Working Capital	23.6	30	59.9	42	115.2	47	223.0	58
Miscellaneous	9.9	13	7.9	6	16.4	6	9.3	2
Total Uses	<u>78.4</u>	<u>100</u>	<u>141.4</u>	<u>100</u>	<u>245.7</u>	<u>100</u>	<u>386.8</u>	<u>100</u>

^a Budget.

Table II. Sources of Funds Employed by CORA, 1965-68 (Millions of 1968 Escudos)

	1965		1966		1967		1968 ^b	
	Amt.	%	Amt.	%	Amt.	%	Amt.	%
Fiscal Budget	64.2	82	112.4	80	168.4	68	188.0	49
Internal Sources	9.4	12	22.4	16	43.7	18	90.7	23
Domestic Credits	-	-	-	-	26.1	11	61.7	16
External Credits	<u>4.9</u>	<u>6</u>	<u>6.6</u>	<u>4</u>	<u>7.5</u>	<u>3</u>	<u>46.4</u>	<u>12</u>
Total Resources	<u>78.5</u>	<u>100</u>	<u>141.4</u>	<u>100</u>	<u>245.7</u>	<u>100</u>	<u>386.8</u>	<u>100</u>

^b Budget.

Table III. Unit Cost, Chilean Land Reform, 1965-68 (In Escudos of 1968 Purchasing Power)

	1965	1966	1967	1968
Administrative Cost (millions)	26.0	39.7	56.6	54.5 ^c
Families (cumulative)	2,000	4,000	8,200	12,000 ^c
Cost Per Family (Per Year)	13,000	10,000	6,900	4,500 ^c

^cEstimated.

IV. Staff and Collaborators in Chile, 1968

1. Joseph R. Thome Associate Professor of Law and Director, LTC/Chile
2. Arturo Urrutia Economist, Research Assistant
3. Patricio Gastelo Lawyer, Research Assistant
4. Rubens Medina Graduate Student, Law and Sociology Research Assistant
5. Silvia de Cabezas Administrative Assistant, Secretary to Director
6. Sonia de Fernández Secretary
7. Orfa Nova Secretary and Typist
8. Sybila de Torres Typist (part-time)
9. Victoria de Palacios Bilingual Secretary

The following research personnel, directly involved in LTC research but not receiving any salary support from LTC:

10. Raul Bertheben Lawyer, Research Associate
11. Hernán Fuenzalida Lawyer, Research Associate

12. Germán Lührs: Lawyer, Research Associate
13. Daniel Stewart: Lawyer-Economist, Research Associate

The following students received thesis support but no salary from LTC:

1. Fernando Campos: Economist
2. Mario Costa: Agronomist
3. Carlos Fletschner: Graduate Student, Economics, University of Wisconsin
4. Carlos Iglesias: Economist
5. Jeffrey Jacobs: Graduate Student, Law, University of Wisconsin
6. Felix Lagreze: Lawyer
7. Jaime Peña: Agronomist
8. Ramiro Riobo: Lawyer

V. Publications

Marion R. Brown. "Agricultural 'Extension' in Chile: A Study of Institutional Transplantation." Land Tenure Center Paper No. 54, September 1968.

Don Kanel. "Tamaño de las explotaciones agrícolas en el desarrollo económico." Publicaciones Docentes No. 26, Santiago de Chile: Instituto de Economía, 1968.

Terry McCoy. "Agrarian Reform in Chile 1962-68: A Study of Politics and the Development Process." Unpublished Ph.D. dissertation, University of Wisconsin, 1968. Mimeographed, Land Tenure Center, 1968.

Rubens Medina. "La comisión repartidora de las aguas del Río Aconcagua." Informe No. 1, Serie Instituciones Legales Para el Desarrollo. Santiago de Chile: Land Tenure Center, 1968.

Charles Nisbet. "Interest Rates and Imperfect Competition in the Informal Credit Market of Rural Chile." Economic Development and Cultural Change, Vol. 16, No. 1 (October 1967), pp. 73-90.

Arturo Urrutia. "La mediería en el Valle Central de Chile." Thesis, Escuela de Economía, Universidad de Chile, 1968. Santiago de Chile: Land Tenure Center, 1968.

COLOMBIA

Herman Felstehausen
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I. Colombian Agricultural Development in Perspective

Although agricultural production increases in Colombia appear to be keeping pace with the country's unprecedented annual population growth rate of 3.2 percent, a number of economic and demographic indicators suggest the possibility of a worsening situation.

During the past two decades, most of the gains in agricultural production have come from an expansion of mechanized crops on large farms and from the opening up of new land areas by peasants rather than from yield improvements. The vast majority of Colombia's two million farms are peasant units which are oriented toward a subsistence level of production and do not begin to absorb the potential labor resources of their occupants. One-third of the nation's farm families are landless agricultural workers, administrators, renters, and sharecroppers who do not own the land they cultivate, and another one-third own "sub-family" size farm units.¹

The relative size of Colombia's farm population is diminishing at a fairly rapid rate. By 1964, only 48 percent of Colombia's 17.5 million inhabitants were living in non-urban areas (i.e., outside municipio seats). But the significant figure is the absolute number of rural people which increased by one-quarter million adults (persons 15 years and older) in the 13-year period between the 1938 and 1951 censuses. During the following 13-year period from 1951 to 1964, the rural areas had a net gain of one-half million adults. The Agrarian Reform Institute of Colombia (INCORA) estimates that at least 1,000 new farm families are being added weekly to the agricultural sector of the economy despite an annual flow of 200,000 rural people to the cities. The Institute projects a net increase of one-half million rural families during the next decade while an estimated 300,000 rural families are expected to migrate to the cities.

The fact is that neither the productive segment of the Colombian agricultural sector nor the incipient industrial sector is providing sufficient income-earning opportunities to absorb the natural increase in the rural labor force. Indeed, a substantial portion of the additional rural laborers is being absorbed

¹Comité Interamericano de Desarrollo Agrícola (CIDA), Tenencia de la Tierra y Desarrollo Socio-Económico del Sector Agrícola: Colombia (Washington: 1966), p. 135.

Into the nearly saturated service sector of the cities and into peasant agriculture in already densely populated rural areas. And while areas of new land settlement have been important in expanding the total agricultural acreage, the capacity of these areas to add people has been somewhat limited. Only about 69,000 of the one-half million adults added to the rural population during the last intercensal period were absorbed into the extensive eastern frontier--the country's principal region of colonization. Most of the increased rural population is being incorporated into the mountainous minifundia regions by means of land fragmentation, informal tenancy arrangements, land use intensification, and even a reduction in levels of living.

The age dimension is another sobering aspect of the rural population dilemma. Since 1950, improved health programs have led to a decline in the infant mortality rate from 124 per 1,000 live births to 82 in 1965. This has created a new lobe of population in the younger ages. There are now one million more children under 10 years of age in the countryside than there were 20 years ago. Since these people will probably not migrate to the cities in large numbers until they are at least 15 years of age, rural communities are left with a tremendous burden to provide education and other services to this group. While the illiteracy rate among adults has dropped to a relatively low 15 percent in the urban areas, it is now 41 percent in the countryside.

These figures dramatize the plight of Colombian peasants and suggest questions about the kinds of structural changes and investments that are needed in the agricultural sector. The Land Tenure Center has oriented its research in Colombia around these developmental issues which arise from a burgeoning peasant population with minimal opportunities for economic and political participation.

II. The Land Tenure Center Program

Since 1962, the Land Tenure Center has completed analytical and descriptive studies on a wide range of issues which have bearing upon the performance of the agricultural sector in Colombia. The initial research efforts under the direction of Professor A. Eugene Havens were oriented primarily toward an analysis of land tenure and related institutions which affect the control and use of resources in rural areas. This phase of the research program included community studies in each of the country's major cultural-physiographical regions as well as a number of related studies on agricultural innovation, migration patterns, and colonization.

Under the directorship of Professor Dale W Adams, the LTC research program concentrated on land ownership and land use patterns and out-migration in several distinct ecological regions of the country, along with detailed analyses of supervised credit programs and parcelization projects. Professor Joseph Thome completed a historical analysis of the country's water laws and studied land titling and expropriation procedures during this phase of the research.

The present research program under the direction of Professor Herman Felstehausen has given special attention to an analysis of those institutions through which improved agricultural inputs and social services are provided to rural people. Besides the organization and performance of the rural service structure, the research during the past year also focused on the entrepreneurial characteristics of latifundistas and minifundistas. A number of projects related to these central themes were carried out; they are summarized in Section III of this report. The 1968 program represents a continuing effort by the LTC to document impediments to change in the agricultural sector and to suggest ways of accelerating the developmental process. In 1968 research projects were carried out in the departments of Antioquia, Boyacá, Cundinamarca, Meta, and Valle.

Office space and equipment for the country program is provided by the Interamerican Center for Agrarian Reform (CIRA) located on the National University campus in Bogotá. The LTC staff works closely with CIRA personnel in planning and conducting research projects, training technical personnel, and publishing and distributing research results. In addition, LTC field projects are planned and carried out in cooperation with regional and national agencies that are interested in ongoing LTC studies. During the past year, the LTC participated in a joint study with the Departmental (State) Government of Antioquia and cooperated with the agricultural producers' associations of Valle and Meta, the National Geographical Institute, land registrar offices, and the Peace Corps.

The technical offices of the USAID Mission are regularly informed of the progress and results of LTC research, and occasional briefings are offered to staff and advisors of the Colombian Ministry of Agriculture, the National Planning Office, the National Agricultural Institute (ICA), the National Agrarian Reform Institute (INCORA), and other agencies.

In conjunction with the research program, training is provided to U.S. and Colombian students through consultation and assistance on individual projects as well as teaching short courses and seminars.

During the past year, Felstehausen served as thesis advisor for two student research projects at the Agricultural College of the National University-Medellín Branch. These projects are included in the publication list appended to this report. A third project with similar arrangement is now under way. Felstehausen and Professor James Grunig of Wisconsin taught in a two-month short course for agricultural technicians at CIRA. In addition, Felstehausen presented two workshop series for agricultural extension workers and Grunig presented a third. The staff has also received and consulted with dozens of foreign and national research workers seeking information and briefings.

The local LTC office serves as a distribution point for regular Center publications produced at the University of Wisconsin. Results of research from other Latin American countries as well as local reports are distributed on a regular basis in Colombia through an established mailing list.

III. Research Projects During 1968

A. LOCAL GOVERNMENT AND RURAL SERVICE BARRIERS TO ECONOMIC DEVELOPMENT IN COLOMBIA

Herman Felstehausen

Focus

Agricultural development research in rural communities usually is directed towards production problems and new technology. Yet studies in rural Colombia indicate that farmers often express as much or more concern about social services as they do about agricultural services. This study was designed to examine the lack of social inputs (for clarity, called infrastructural inputs) rather than physical inputs as impediments to economic growth. (Plans for a follow-up study on physical inputs are described below.)

The two main purposes of the study were to determine:

- 1) the availability of six community services--education, health facilities, roads, public utilities, administrative and tax systems, and agricultural technical assistance--in rural Colombia, and
- 2) the capacity to expand these services to meet the demands of the growing agricultural population. A related objective was to improve definitions of infrastructural inputs for future agricultural development studies.

Some available information shows that restrictions on infrastructural inputs constrain production in a manner similar to limitations on physical inputs. For example, construction of a new road to a farm can be viewed as a new input just as the introduction of an improved fertilizer. In Colombia, farms without road access move supplies and products by pack animals with the load capacity and trip time fixing the upper limit on product movement and thus on production. The implications are that infrastructural services probably are as important as production services in the solution of development problems.

Methods

This study was conducted in collaboration with the Departmental Government of Antioquia. A large contiguous region was chosen to include zones both near and distant to a major city (Medellín); and distinct patterns of agricultural production and land occupancy. The region consisted of 31 municipios (counties) with some old settled areas as well as frontier zones.

Each municipio was visited to gather information about the six infrastructural services, to inventory public investments, and to examine current management problems. A combination inventory form and research schedule was used to gather information from municipal officials, public service agency managers, businessmen, and farmers. The legal, administrative, and financial structure of each service also was studied with data gathered from central offices in Medellín and Bogotá.

Findings

Some of the six local services studied were available but none at a very high level. For the entire region, 20 percent of school-age children complete primary schooling and less than 3 percent of farm children complete primary grades. About 80 percent of the inhabitants of the region are not reached by medical services; only 12 percent of farm parcels and 20 percent of farms are accessible by road, and public utilities like electricity and water serve only 25 percent of the homes, most of them in towns and villages. Local governments depend heavily on higher levels of government for their revenue. They are inefficient in fiscal management and spend most of their total annual budgets on administrative overhead. Agricultural service agencies reach about 20 percent of the farms. They tend to serve only the most accessible areas and to offer new or additional services where some services already are available.

As serious as the lack of these services is the fact that local and regional political and fiscal units responsible for infrastructural planning and support lack legal, administrative, and financial capacity to perform effectively. The archaic form of local government and community decision units does not have growth potential. In order for rural development to proceed and for infrastructural services to keep up with farm production demands, much of the apparatus of local government must be replaced by more viable forms. This replacement is not likely to occur without changes in the political representation of rural and small-town residents, since there are few signs that central authorities, on their own initiative, will grant adequate resources to rural communities. Changes in the community decision-making structure also imply a challenge to the established political party system--a further reason why changes will be resisted.

Recommendations

1. Departmental governments should be encouraged through pressure from the central government to begin moving staff and resources into rural areas to speed investment in local projects. Experimentation with regional units within the departments might further this objective since the municipio is too small and lacks adequate qualified personnel and resources for planning and executing infrastructural improvements. Without additional infrastructural investment in rural areas, the large rural peasant sector of the population is blocked from production advances. This probably means that the whole agricultural sector is blocked in a change-over to an efficient modern system.

2. To help finance local projects, the tax structure of local and regional units needs to be overhauled so that rural communities can tax themselves more efficiently. Many minor taxes on consumption could be eliminated, use taxes changed to licenses, and the land tax system modified and strengthened to increase its yield and local control.

3. Large cities like Medellín need to be zoned out of rural departments to simplify the application of reforms to low-population, low-income rural regions. These regions should be given special treatment in planning, and flexibility in fiscal management should be the rule.

4. The most active and representative community decision groups now in existence are voluntarily-formed local Juntas de Acción Comunal (Community Action Boards). These boards at present do not have much role in local government, even though by recent law they were allocated positions on local municipal councils. The Juntas

must be allowed to increase their representation and control until they replace present municipal government.

5. Public utilities are now most successfully operated by decentralized departmental agencies. Municipally-operated public utilities should gradually be turned over to the departmental companies with constant rate increases permitted in order to place the services on a pay-as-you-go basis. If subsidies are necessary, they should be in the form of direct subsidies to the company and not the forgiveness of delinquent users.

Plans for Continued Work

Work already is under way to supplement the rural service study with additional research on the farm level impact of service scarcity and the problems of obtaining and using physical agricultural inputs. This study will include sample areas near a large city as well as isolated frontier zones and distinct cropping regions. The analysis of the input market is being made at three levels: 1) general supply and availability of the input in the country; 2) the village level commercial or public distribution and cost structure; and 3) farmer access and on-farm use of the inputs.

B. ECONOMIC AND SOCIOLOGICAL ASPECTS OF MINIFUNDIA AGRICULTURE IN A HIGHLAND REGION OF COLOMBIA

Emil and Wava Haney

Focus

This study was designed to document the major socio-economic adjustments occurring in a minifundia community and to consider ways in which peasant families can improve their employment opportunities and levels of living. In particular, the study attempted to:

- 1) describe the present economic organization of the minifundia;
- 2) determine the various types and combinations of new inputs needed to improve farm production and family incomes;
- 3) consider the alternatives available to peasant families for acquiring these new inputs in high pay-off combinations adapted to local conditions;

- 4) analyze the existing community infrastructure and its limitations in meeting the felt needs of peasant families;
- 5) examine the opportunities of peasant families for obtaining more gainful employment and improving their levels of living within the community and in other areas of the country;
- 6) suggest ways in which peasant families can participate more fully in shaping the institutions that influence their lives.

Methods

The field work for the study was carried out in the densely-populated eastern part of Cundinamarca during 1966 and 1967. The Haneys lived with a family in the village of Fόμεque for six months while they conducted informal and structured interviews with peasant families and community leaders in Fόμεque and five neighboring municipios. Questionnaires were administered to the students enrolled in Fόμεque's secondary and vocational schools and inventories of agricultural and social services were completed for each of the six municipios.

Besides a review of local historical documents and other records, market data and other observations were recorded throughout the study period. The study also included an adoption experiment through giving small samples of improved seed corn to each of the peasant families in the rural sample. Finally, informal interviews were conducted in the Llanos Orientales and Bogotá with migrants from Fόμεque and neighboring municipios. Extensive analysis of the data has been completed and two Ph.D. theses are being prepared at the University of Wisconsin.

Findings

By and large, Colombia's minifundia may be characterized as small, capital-scarce, labor-intensive, family agricultural units providing subsistence levels of living. Generally these units are located on the poorest agricultural land of a community; they tend to be highly fragmented through inheritance patterns and informal tenancy contracts. Often information about new technology is lacking or relevant new inputs in high pay-off combinations are simply not available to peasants. For the most part, these constraints appear to be related to deficient local agricultural and social services over which the peasants have virtually no control. To acquire these scarce complements for their relatively abundant labor peasant families enter into asymmetrical relationships with village landlords, storekeepers, middlemen, religious leaders, and professionals.

Through these vertical alliances, economic surpluses are transferred from the peasantry to the dominant groups of society who, in turn, use these goods and services to underwrite their levels of living and positions of power. Peasants also enter into horizontal alliances which demand such heavy economic and social obligations that they are often forced into a temporary curtailment of consumption or into extended indebtedness.

While numerous examples of change among rural families demonstrate their responsiveness to new income-earning opportunities, their behavior is nevertheless marked by extreme caution, thus reflecting their precarious position vis-à-vis informal contractual relationships, the ceremonial-religious system, price fluctuations, and natural calamities. Such economic conservatism is manifest in the tendency to make traditional "insurance" types of investments in land and livestock, ceremonial funds and, to some extent, the education of their children.

In the past, most peasant communities have had a number of "escape valves" which served to equilibrate imbalances between the human and physical resources of a community. Through such phenomena as land fragmentation, land use intensification, reduction in levels of living, high mortality, and seasonal and permanent migration to other parts of the country, peasants have adjusted to shortages in local physical resources. However, present-day indications in many minifundia communities suggest that these traditional stabilizing mechanisms no longer provide the same degree of flexibility as they did in the past. Declining mortality rates have not merely increased the absolute number of peasants on the land, but perhaps more importantly, they have swelled the ranks of economically-dependent persons in the rural areas.

At the same time, migration opportunities seem to be drying up as accessible colonization areas become densely settled and seasonal agricultural labor requirements are met with growing local labor supplies and increasing mechanization. Rural-urban migration (especially from the 15-30 age group) continues at unprecedented rates, but for the majority of rural people the threats of unemployment or menial employment and personal insecurity in the cities outweigh the disadvantages of a deteriorating peasant agriculture. As a result of this increasing demographic pressure, fragmentation in many rural communities has advanced to the point where further property divisions are not possible without declining levels of living or irreversible damage to the natural resource base.

Yield-increasing technology such as new crop varieties, chemical fertilizers and pesticides continues to provide some slack in the delicate balance between the population and the natural resource base.

And present levels of production could be increased substantially by extending the technology currently used on the better organized farms of a community to the other agricultural production units. But there are serious limitations to increases in employment through more intensive land usage. Without a simultaneous adoption of improved soil and water conservation practices, intensive cropping practices deplete the highly erodible soils at a much faster rate than the traditional systems of cultivation.

Under the existing institutional structure in minifundia communities the possibilities for augmenting the productivity of the human and physical resources are not bright. On the one hand, the effective demand for new inputs is reduced by traditional claims against the peasants' production, a high degree of uncertainty and risk, and restricted opportunities for acquiring new knowledge and skills. But, the development and supply of new technology and managerial skills are dependent upon a grossly inadequate and outmoded agricultural and social service structure which is manipulated by village elites. Unlike the more progressive farmers of a community who have access to the country's major agricultural research stations, supply agencies, financial institutions, and other services, peasants must rely almost entirely upon local sources of information, physical inputs, credit, etc. In the absence of effective organization through which the peasants can formulate collective goals and devise plans for achieving them, there is little inclination on the part of the dominant groups to improve community infrastructure.

At the same time, there is little reason to anticipate massive commitments from the national government for peasant communities. Under the present national political system, it seems likely that priorities will be given to projects in the urban areas and to the larger farm segment of the agricultural sector. However, if a larger portion of local resources presently used to support local bureaucracies and conspicuous projects in the villages were channelled into such investments as roads, schools, health facilities, markets and technical information systems for which the rural masses express a need, the employment and production capacities of the minifundia and their operators could be increased substantially.

Recommendations

1. In order to increase the productivity of minifundia agriculture and improve the lot of the burgeoning peasant population, impetus should be given to the creation of effective grass-roots organization through which the peasants gain control of their communities and make political demands on the larger society. These local action groups must attain sufficient power to undermine the present economic and political monopolies of the traditional elites and devise new forms of social organization designed to fulfill their own felt needs.

2. Peasant groups should be assisted in their demands for fuller use of existing local infrastructure such as educational plants, medical centers, agricultural research facilities, marketing and credit institutions, agricultural processing installations, and heavy equipment. Most existing infrastructure in peasant communities is utilized primarily by local elites and outsiders at a level far below its capacity. A case in point is the village school system from which most peasant children are presently blocked by the high costs of tuition, room and board, and by matriculation requirements which cannot be met after attending only the two or three grades offered in most rural schools. Relevant work-study programs could be implemented to provide peasant children with opportunities to tackle local problems and further their education in the village schools, and the underutilized physical facilities could be used for adult literacy and vocational classes as well.

3. Instead of operating agricultural experiment plots and nurseries with paid laborers, such entities could be set up as work-training centers in which peasants contribute labor towards maintaining the facilities while they, in turn, learn new agricultural techniques and receive improved nursery stock. A similar program could be established for the construction and maintenance of farm-to-market access roads.

4. An all-out effort should be made to assist peasants in setting up their own cooperative institutions designed to replace the traditional systems and expand the functions of credit, marketing, processing, and transportation. Experimentation with various types of cooperative arrangements should be encouraged in order to learn what kinds of instruments best serve the interests of the peasants in achieving greater agricultural productivity and improved levels of living.

5. Low-cost, effective means of communication should be developed to provide peasants with relevant information on technology, prices, interest rates, legal matters, employment opportunities, and the availability of agricultural and social services.

6. All land held by absentee owners in peasant communities should be expropriated. Land suitable for cultivation should be distributed to the peasant families who operate it. The other land--especially the cloud forest and alpine zones in the highland communities--should be placed under a community or regional authority with broad local representation for the purpose of watershed improvement and management. The authority could set up work-training programs for the peasants to develop water distribution and hydroelectric power systems as well as reforestation and range improvement projects for the general benefit of the community.

**C. LEVEL OF ENTREPRENEURSHIP AMONG LATIFUNDISTAS
IN THE VALLE DEL CAUCA AND META**

James E. Grunia

Focus

This study was concerned with the level of entrepreneurship and the nature of decision-making processes among Colombian latifundistas. The latifundia sub-sector was selected for study because it controls the bulk of Colombian agricultural resources, and because it has been notoriously inefficient from the standpoint of land productivity. This segment also has important interaction effects with the minifundia sub-sector. Therefore it was argued that in order to characterize the performance of Colombian agriculture and formulate agricultural development policies a complete understanding of the functioning of the latifundia was necessary.

Specifically, the study asked:

- 1) Why are large agricultural holdings in Colombia often unproductive?
- 2) What are the stimulants to entrepreneurship on the large holdings?
- 3) How does modernization of the latifundia sub-sector affect the minifundia sub-sector?
- 4) What is the appropriate government development policy towards Colombian latifundistas?

Methods

The study was conducted in two regions--the Cauca Valley (Department of Valle), one of the country's most developed agricultural regions, and the Eastern Plains (Department of Meta), a frontier region largely devoted to extensive livestock production but where more intensive agriculture is being developed.

The investigation utilizes comparative case studies and case groupings based on factor analysis. Six typologies of latifundistas emerged from the study. The typologies in order from the least to the most entrepreneurial are:

- 1) Traditionals--Valle who are primarily older, absentee, extensive livestock, and sugar cane producers;
- 2) Traditional Resident Farmers--Meta who produce cash crops as well as cattle and devote a high percentage of their time and capital to their agricultural operations;
- 3) Part-time Livestock Producers--Meta who derive high incomes from extensive cattle operations, but devote little time to their farms;
- 4) New Entrepreneurs--Meta who combine intensive crop production with business and professional activities in Bogotá or Villavicencio;
- 5) Unsuccessful Entrepreneurs--Valle who are innovative crop and livestock producers with low profit margins and who possess business interests in Cali;
- 6) Successful Entrepreneurs--Valle who are primarily intensive crop producers with high profit margins and a high level of active management in spite of their outside business interests.

Findings

Comparison of these typologies leads to the following conclusions:

1. Traditional latifundistas who engage in extensive livestock production would make much higher profits if they devoted their land to more intensive crop production. However, there is little incentive for them to do so. When the opportunity cost of land is discounted, their total income is as high as the most productive crop producers, and their risks and responsibilities are much lower. They generally have the largest landholdings among the latifundista types and can discount the cost of land because appreciation equals the opportunity cost. The mere holding of land is one of the best investment opportunities available to a traditional.
2. Successful entrepreneurs made high profits for the following reasons: a moderate level of productivity; personal managerial ability and experience in agriculture which compensates for lack of practical technical assistance and information; adequate control of product markets (often by contracts); mechanization and low labor inputs; levels of absenteeism and outside business interests that do not seriously limit their strategic management time; adequate advance planning and activity to obtain scarce inputs; rental rather than ownership of land, and only moderate use of credit.

3. There is no inherent unprofitability in large farms in Colombia. The most entrepreneurial type of landowner had an average income of U.S.\$60,000 over total costs (including land) with a return of 35 percent of the commercial value of their land each year. The most traditional type earned U.S.\$56,000 yearly in net income over variable costs when the opportunity costs of land were eliminated. Extensive livestock producers in the plains averaged a 43 percent yearly return to their commercial land value.

4. Very high productivity is not profitable for latifundistas because of the high cost, the scarcity, and the inappropriateness of inputs and technology. High income entrepreneurs are selective adopters. High productivity per land unit is especially unprofitable in livestock production.

5. A feudalistic pattern of latifundia holdings based largely on the exploitation of a tied labor force does not exist to any great extent on the farms studied. The most profitable latifundia are those which use a minimal amount of labor, either through extensive livestock production or mechanized crop production. Most latifundistas use transitory laborers whom they contract through a third person (contratista).

6. Most latifundistas have ample personal capital for intensive production if they wish to use it for this purpose. Large-scale credit programs--especially to livestock producers--essentially replace this capital and allow the latifundista to invest in urban real estate, stocks in sugar mills, etc.

Recommendations

Based on this study, it is possible to make the following policy recommendations to agencies concerned with agricultural development:

1. The most unproductive latifundistas are generally those with the most land, primarily because cheap land (considering annual accretions in value) allows them to earn an income adequate for their needs through extensive land use. Land reform legislation could require large landowners to sell land above a specified size limit, and the penalty for non-compliance could be expropriation without compensation.

2. Substantially higher land taxes would possibly reduce the incomes of traditional latifundistas below a minimum level and force either rental, sale, or more intensive use of the land. Taxes are now too low to have any effect. In addition, higher tax revenues are essential to provide needed social services in rural areas.

3. Less emphasis should be put on credit programs for large owners. Until certain changes are made (limitations of farm size, better technical assistance, better distribution of inputs, more effective market controls), this credit does little more than substitute for personal capital which is then invested outside the rural sector.

4. A more rational program of importation of key inputs such as fertilizer, insecticides, and machinery should be followed, based on agricultural production rather than foreign exchange needs. Machinery imports should be carefully limited in order not to replace labor.

5. Attention should be given to more practical agricultural education which would provide practical technical assistance to all types of farmers.

6. Structural market changes should be emphasized which would institute stable prices through contract farming, quality incentives, bulk handling, less personal control of the marketing process, and possibly a package program of credit, assistance, and inputs provided along with a market contract.

7. Investment in the large farm sector does not seem to offer any help to campesinos through "trickle-down" effects. Intensive latifundistas use only a minimal amount of labor and tend to search for vocationally-trained laborers, such as tractor drivers, managers, etc. In addition, effective demand for both agricultural and industrial products is limited because of the low income and purchasing power of a large peasant population. Thus, it seems that development capital could be directed largely to the small-farm rather than large-farm subsector with only minimal amounts devoted to stimulating changes in the large-farm subsector.

D. A STUDY OF THE ECONOMIC DECISION MAKING
SITUATIONS OF COLOMBIAN MINIFUNDISTAS

James E. Grunig

Focus

This study is the second phase in a larger project to examine economic decision making, its antecedents and consequences, in the agricultural sector of the Colombian economy. The first part of the project, now completed, dealt with the latifundia subsector. This study will be concerned with the minifundia subsector.

There are important social, economic, and political consequences depending on whether development funds are invested in the latifundia or the minifundia subsector. The latifundia phase of this project has shown that latifundistas are capable of becoming more productive. However, contrary to the arguments of many development specialists modernizing the large-farm subsector does not seem to offer more employment opportunities for minifundistas. Furthermore, one of the major deterrents to a more rapid growth of the Colombian economy is the shortage of income and effective demand for both agricultural and industrial products among the mass of consumers represented largely by campesinos.

The specific purpose of this study, then, will be to search for possible economic and social incentives and adjustments which might yield higher incomes and levels of living for campesinos. As in the latifundia study, this research will concern the way decisions are made and the effect of various services and economic incentives on these decisions. Specifically, the objectives of the study are:

- 1) To compare the individual characteristics, structural conditions, and decision making processes of minifundistas who achieve higher levels of productivity and living with the same factors associated with less successful campesinos.
- 2) To determine what services, institutional reforms, management adjustments or economic incentives might be able to relieve the problems of the minifundistas.
- 3) To study the role of communications in the decision making processes of campesinos.

Methods

In order to cover a variety of minifundia situations, the study will be conducted in four departments--Valle del Cauca, Meta, Caldas, and Boyacá.

Valle and Meta were the two regions of the latifundia study and thus are useful for comparison. Valle is also a region of "dependent" minifundia: many campesinos derive most of their income from employment on large farms. In Valle, it will also be possible to study a contract marketing program, an irrigation district, and the activity of the tobacco federation. Meta includes extensive areas of recent settlement where spontaneous colonization can be studied. The activity of the cotton and rice federations will also be included in the interviews of this region.

Caldas is the heart of the Colombian coffee region and is chosen to represent "commercial" minifundia. The activity of the coffee federation is also important in the region. Boyacá is included as an example of "independent" or subsistence minifundia. It is one of the departments with the largest concentrations of small farms and in which little off-farm employment is available.

The basic methodology of the research will be comparative case studies. The end result will be a series of case groupings or typologies of minifundistas developed through use of factor analysis. The sample will be selected according to a purposive scheme with the cases chosen by region and according to the special considerations in each region mentioned above. In addition, about 20 percent of the cases in each region will be medium-sized farms to allow a study of the farm size variable.

The study will be conducted in cooperation with CIRA as well as a number of Colombian federations and institutions working in the four project areas.

**E. LEGAL PROCESSES IN TITLING,
REGISTERING, AND TRANSFERRING AGRICULTURAL LAND IN COLOMBIA**

Luis Arévalo S.

Focus

The definition of agricultural land ownership in Colombia is hampered by complicated and slow land recording and titling systems, by the lack of land surveys and measures, and by archaic legal systems and record keeping. These factors result in disputes, delays, unnecessary costs, withheld investments in farm improvements, and inefficient performance in the agricultural sector.

This study was designed to:

- 1) Outline the legal and technical procedures used in:
 - a) transferring and titling land;
 - b) registering titles;
 - c) measuring land;
 - d) establishing land rights under special conditions.
- 2) Recommend changes in the legal and administrative systems of land titling and registration.

Methods

Cases representing each of the legal and administrative problems under study were selected, analyzed and documented. Procedural steps, record keeping methods, time delays and money costs were recorded and analyzed for shortcuts and efficiency. Legislative history and legal requirements were summarized.

Findings

Most agricultural properties in Colombia have not been technically measured, yet most properties are crudely titled. Titles often contain very general descriptions of a property--descriptions which cannot be technically reproduced. A technical system of land measurement would be required to establish a modern titling program.

Title preparation, transfer and registration procedures often function poorly. Drawn out "ceremonial procedures," rubber stamping, special papers, numerous signatures, special witnessing, and meaningless style rules are often required. In the case of dispute or lack of definition, property owners are burdened with costly legal proceedings and long time delays (up to five years or more) which tend to encourage evasion of a permanent settlement or the use of informal procedures.

Recommendations

The following recommendations are made as a result of the study:

1. Notary and registry offices should be distributed on the basis of geographic rather than political criteria in order to make them more accessible to users.
2. Officials in notary and registry offices should be required to meet minimum training standards and be given the opportunity to participate in improvement courses. Law schools and schools of public administration should create training programs for middle-level specialized public officials.
3. Notary and registry office procedures should be streamlined in accordance with modern office management systems, filing, and record keeping.
4. A system of provisional documentation should be permitted until permanent mapping and documentation can be prepared. Responsibility for the disorderly and slow processing of public documents should be shifted from the citizen to the public agency.

5. Improvements in land title and transfer procedures need to be accompanied by similar improvements in the land survey and mapping systems. As part of the reorganization, effort should be made to integrate the agencies working in the various fields in order to improve coordination. All maps and technical measurements of properties along with the names of owners should be published and distributed to rural people and local officials.

6. Many titles are out of date because they have never been revised in the process of land inheritance. Title up-dating in inheritance proceedings should be performed automatically as a local procedure after an appropriate publication and waiting period.

F. RELATED RESEARCH PROJECTS

1. THE ORIGIN, DEVELOPMENT, AND PRESENT ROLE OF THE HACIENDA SYSTEM IN THE BOGOTA SABANA - Juan and Judith Villamarín

This project aims at learning more about the hacienda system of land ownership on the Bogotá plateau. The first part of the study now complete, traces the historical formation and development of hacienda holdings in the area. The second part will attempt to describe the role and position of present day hacienda owners in the social, economic and political life of Bogotá and the surrounding area. The study will be presented as two Ph.D. theses in anthropology at Brandeis University.

2. FACTORS INFLUENCING THE ORGANIZATION AND SUCCESS OF RURAL LAND INVASIONS IN COLOMBIA - Roger E. Soles

This study proposes to examine one form of peasant response to his restricted access to land--rural invasions onto privately-owned agricultural property. Field work will be carried out among two types of land invaders: one group whose claims have been given some form of government recognition; a second group of invaders who still are in conflict over land rights. The study will attempt to show why land invasions occur and the results of such actions.

3. AN EVALUATION OF THE APPROPRIATENESS OF TRAINING RECEIVED BY AGRICULTURAL COLLEGE GRADUATES IN COLOMBIA - Luis Acuña M.

This study will analyze the training of Colombian agricultural college graduates and recommend ways to make them more effective technicians in increasing agricultural production. Colombia's ten

colleges of agriculture had graduated 2,138 agronomists through 1968. Most of these appear to be trained for a few very specialized research fields such as entomology, zoology, soils, or for university teaching. Very few work in applied fields such as farm management, industry, or government assistance agencies. This study will focus on the types of technical assistance needed by farmers to increase production; the effectiveness of agronomists who work in fields other than research, and the training needed by agronomists to make them effective under farm conditions.

4. **POTENTIALS FOR INCREASING THE PROFITABILITY AND PRODUCTIVITY OF SUGAR CANE GROWING IN THE COLOMBIAN CAUCA VALLEY - Jaime Mira V.**

This study was designed to determine whether production intensification by sugar processor-growers and contracted growers would improve the income picture for the sugar industry, the most important agricultural crop in the Cauca Valley. A related objective was to explore whether intensification would free sugar land for other uses. Using control fields, the study found that fertilizers, irrigation, improved varieties, and controlled cutting times can double the production of sugar on some soils.

IV. Staff and Collaborators in Colombia, 1968

- | | |
|------------------------|---|
| 1. Herman Felstehausen | Assistant Professor and Country Director, LTC-Colombia (full-time) |
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| 3. Jaime Mira | Local Research Assistant, LTC-Colombia (full-time) |
| 4. Luis Acuña | Local Research Assistant, LTC-Colombia (6 months, July-December 1968) |
| 5. Luis Arévalo S. | Research Assistant, LTC-Colombia (6 months, January-July 1968) |
| 6. José María Franco | Research Assistant, Caracas, Venezuela (Colombian work, March 1968) |

7. Vicente Flórez D. Local Research Assistant, LTC-Colombia (2 months, January-February 1968)
8. Roger Soles Research Assistant, LTC-Colombia (6 months, July-December 1968)
9. Reid Reading Graduate Student, Political Science, University of Wisconsin (collaboration January-February 1968)
10. Juan and Judith Villamarín Graduate Students, Anthropology, Brandeis University (collaboration and partial support, full year)
11. Eric Abbott Graduate Student, Agricultural Journalism, University of Wisconsin (collaboration June-August 1968)
12. John Powell LTC Advisory Committee Member, Harvard University (collaboration July 1968)
13. Olga de Muñoz Executive Secretary, LTC-Colombia (full-time)
14. Helena Barrios Local Typist, LTC-Colombia (4 months, January-April 1968)
15. Mary Watson Secretary-Typist, LTC-Colombia (3 months, June-August 1968)
16. Doris de Lesmez Local Secretary-Typist, LTC-Colombia (4 months, September-December 1968)

V. Publications

(The following titles represent materials prepared or published as a result of LTC-Colombia efforts in 1968.)

Luis Arévalo S. "Legal Processes in Titling, Registering and Transferring Agricultural Land in Colombia." Unpublished Ph.D. dissertation, University of Wisconsin, in process.

L. Harlan Davis. "Economics of the Property Tax in Rural Areas of Colombia." Unpublished Ph.D. dissertation, University of Wisconsin, 1968.

_____. "Economía del Impuesto predial en áreas rurales de Colombia." Mimeografiado No. 105, Bogotá: Centro Interamericano de Desarrollo Rural y Reforma Agraria, Julio 1968.

Herman Felstehausen. "Economic Knowledge, Participation and Farmer Decision Making in a Developed and an Underdeveloped Country." International Journal of Agrarian Affairs, Vol. 5:4, in process.

_____. "El equilibrio en el contenido de prensa en función de la importancia de problemas agrícolas." Memoria del Primer Seminario de Periodismo Agrícola, Bogotá: Ministerio de Agricultura y Centro Interamericano de Desarrollo Rural y Reforma Agraria, 1968.

_____. "Fitting Agricultural Extension to Colombia's Development Needs." Land Tenure Center Research Paper No. 39, Madison, Wisconsin: University of Wisconsin, August 1968.

_____. "Improving Access to Latin American Agricultural Information through Modern Documentation Centers." Quarterly Bulletin: International Association of Agricultural Librarians and Documentalists, in press.

_____. "Local Government and Rural Service Barriers to Economic Development in Colombia." Mimeographed, University of Wisconsin: Land Tenure Center, June 1968.

José María Franco G. "Land Registration and Survey in Venezuela and Colombia." Unpublished Ph.D. dissertation, University of Wisconsin, in process.

James E. Grunig. "Economic Decision Making and Entrepreneurship among Colombian Latifundistas." Article submitted for publication, August 1968.

_____. "Information and Decision Making in Economic Development: Some Evidence from Colombia." Article to be submitted for publication, 1968.

_____. "Information, Entrepreneurship, and Economic Development: A Study of the Decision Making Processes of Colombian Latifundistas." Unpublished Ph.D. dissertation, University of Wisconsin, 1968.

Emil B. Haney. "The Possibilities for an Economic Reorganization of Minifundia in a Highland Region of Colombia." Unpublished Ph.D. dissertation, University of Wisconsin, in process.

- Emil B. Haney. "The Minifundia Dilemma: a Colombian Case Study." In Proceedings of the Conference on Population Problems and Latin American Development, University of Wisconsin, May 3,4, 1968. In press.
- _____. "The Nature of Shifting Cultivation in Latin America." Land Tenure Center Research Paper No. 45, Madison, Wisconsin: University of Wisconsin, June 1968.
- Wava G. Haney. "The Migration Process in a Colombia Minifundia Community." Unpublished Ph.D. dissertation, University of Wisconsin, in process.
- Diego Jaramillo S. and Francisco Jairo Yepes E. "Justificación económica de la construcción de tres carreteras veredales en Antioquia." Unpublished undergraduate thesis, College of Agriculture, Medellín, 1968; study under the supervision of Herman Felstehausen.
- Jaime Mira V. "Potentials for Increasing the Profitability and Productivity of Sugar Cane Production in the Cauca Valley of Colombia." Paper in preparation, 1968.
- Fernando Monge. "Reading Habits of Scientists in a Colombian Institution." Unpublished Ph.D. dissertation, University of Wisconsin, 1968.
- Bernardo Mora C. and Jesús M. Sierra M. "Organización, actividades y costo de tres servicios de extensión agrícola en Antioquia." Unpublished undergraduate thesis, College of Agriculture, Medellín, 1968; study under the supervision of Herman Felstehausen.
- Garland P. Wood. "Gobierno Local: La cuerda al cuello o piedra clave." Temas Administrativos, Vol. 4:8, April 1968.

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BRAZIL

E. A. Wilkening
Professor, Rural Sociology

I. Population and Land Tenure Problems in Brazil

The population and land tenure problems in Brazil vary from region to region. The land tenure patterns range from the latifundia type with its two-class system of landowner and farm laborer in the Northeast to the small, family-owned minifundia type in the South. Hence, while few generalizations about the nature of land tenure patterns and their consequences are possible, the patron-worker relationship provides an underlying structure to rural life everywhere. The form of this relationship and its consequences not only for land tenure, but for credit, access to technical assistance and social amenities require much more study in Brazil.

The population of the coastal regions and of certain areas of southern Brazil continues to grow more rapidly than it can be absorbed into industrial opportunities. Agricultural opportunities in these regions also are limited under present type of tenure and exploitation. The latifundia of the Northeast perpetuate the pattern of landowner and shifting agricultural working class, and the minifundia in some southern areas prevent the full or efficient use of labor. At the same time, food products for home consumption are in short supply. Brazil has had to import beans from Mexico and wheat and corn from other countries in recent years. Sugar and coffee, the two crops of great historical significance in Brazilian agriculture, are under close international regulation; hence alternative products for market and for home use need to be expanded.

These conditions have given rise to the search for better opportunities in the interior where land is only sparsely settled. The building of the new capital of Brasilia has made more attractive this largely underdeveloped part of Brazil, while improved access has accelerated expansion into the interior from the more densely settled areas of the Northeast, the East, and the South. Both government and private interests look to the vast interior to provide an outlet for the excess population and at the same time increase agricultural output. Private interests have begun to clear and develop large areas for cattle and crop production in the Amazon region, and public and private colonization schemes are being attempted in Goiás, Mato Grosso and Maranhão. A few of these appear to be succeeding while others have been abandoned.

An extensive survey of the agricultural, economic, and social characteristics of the Central Plateau was made with the support of AID and the American International Association to determine the capabilities and the problems related to the development of this area. While views differed, there was general agreement that economic exploitation of the region would require large investments in clearing and fertilization together with extensive cultivation methods.

Proposals also have been made for the massive relocation and settlement of families in the interior of Brazil. These proposals are in keeping with the belief of some that the interior provides a solution to the problem of the over-populated areas of the coastal and southern regions and for increasing the much needed supply of agricultural products for consumption and for export.

Aside from the planned colonization schemes, the unequal rates of growth and development among the regions of Brazil have given rise to extensive spontaneous migration between regions. This long distance migration is combined with shorter distance moves in search of better land and jobs. More knowledge is needed about the extent and nature of the migration process and its consequences for individual migrants. Such knowledge also is needed for policy-making concerned with the utilization of both man and land resources as they contribute to economic development at the national as well as the regional level.

11. The Land Tenure Center Program

The first major research effort by the Land Tenure Center began in 1963 through support of the CIDA study of the land tenure situation in Brazil. In cooperation with the Interamerican Center for Social Science Research, the Land Tenure Center assisted in making several intensive studies of the nature of land tenure and its relation to social and economic functions in selected areas. These studies, together with the more systematic studies of the relationships of farm size to income and productivity by Norman Rask in Rio Grande do Sul and of the relationship of land tenure to economic performance by Michael Sund in the Northeast, provided the first solid evidence of how farm size and tenure patterns affect the income, status, and opportunities of the people depending upon agriculture.

At about the same time, Professor Belden Paulson conducted a study in the Northeast to determine how the local and state political structures affect the opportunities for economic development. He was able to show how political and social ties control the allocation of resources to local areas and how programs for the improvement of

conditions in the region frequently are stifled when changes are unlikely to affect the elite and the non-elite differently. Professor Sidney Greenfield also contributed to the understanding of power and control systems in Brazil through his study in the State of Minas Gerais. He developed the thesis that Brazilian society can be understood as a system of interconnected dyadic relationships in which control and influence over other people is the central focus. Using this concept we can understand the patron-worker relationship and the relationship of politician to the electorate, and how "brokers" in power play an important role in the distribution of resources, services, and power in Brazilian society.

John Steele followed the leads of Rask and Sund to do a study of the inheritance and transfer of property among farmers in an area near Viçosa. He was able to show how minifundia are a product of inheritance patterns and lack of non-farm opportunities. He also showed that the sons of the large owners move directly into farm ownership while the sons of small owners must work on other farms and sharecrop before becoming owners.

Luis Fonseca studied information and practice adoption among farmers in a município of Minas Gerais. He found that practice adoption was highly associated with size of farm and income despite the fact that the agricultural extension program was directed primarily toward medium-sized farmers.

Focussing upon the importance of migration and the unequal distribution of population in Brazil, Professor E. A. Wilkening embarked upon a study of migration and settlement in newly-developed areas of the state of Goiás including the federal district of Brasília. Another phase of the study dealt with the characteristics of the colonists and factors affecting their success in three planned colonies in Brazil (in Santa Catarina, the state of Rio de Janeiro, and Bahia). These studies were aimed at an understanding of the spontaneous migration to sparsely settled areas, the reasons for migration, the problems encountered, and the likelihood of successful settlement with a minimum of government assistance. The study in Central Brazil included three samples: one from a rural area near a paved highway about 300 miles from Brasília, one from the rural area in the federal district, and one from the urban area of Brasília.

Through a comparison of previous and present tenure characteristics of early and late settlers in the rural areas, these studies were able to show the extent to which migration affects change in tenure at different stages in the settlement of an area. It was also shown how the sources of information and assistance, the reasons for migration, the relative satisfaction of the settlers, and other characteristics relate to the attraction of migrants to rural and to urban areas, and to their adaptation. By comparing aspirations for their

children's education and future occupation and by comparing interest in settling in planned colonies, an assessment was made of the drawing power of such colonies and their likelihood of attracting persons committed to agriculture.

The analysis of the characteristics of settlers in the three different colonies and of the factors associated with their success as measured by income, agricultural practices adopted, and level of living also provides a basis for determining the feasibility of such colonies, for the selection of colonists, and for policies which will aid in more successful planned settlement.

The study of communications behavior of agricultural agents in Rio Grande do Sul by Theodore Hyman has added to our knowledge of how technical information is communicated by various agencies in Brazil. The study shows how the organization and goals of the agencies affect the methods and the techniques used in reaching farm people.

III. Research Projects During 1968

A. COMPARISON OF MIGRANTS IN TWO RURAL AND IN AN URBAN AREA OF CENTRAL BRAZIL

E. A. Wilkening

Focus

The comparison of the characteristics of settlers in two rural and in one urban area of Central Brazil was designed to tell something about the migration process and its consequences in this part of the country. It tells us about the kind of migrants who choose rural over urban areas, and vice versa, and the problems and factors affecting their adaptation. From the data we can also make inferences about the role of both rural and urban areas in the absorption of surplus population and about the nature of the contribution of migration to regional development in Brazil.

Findings

Data on the birthplace of the respondents and their parents and on the place of last residence suggest that the developing areas of the interior draw from the streams of migrants who have moved from the more densely settled Northeast where economic opportunities have been lacking, to the southern industrialized regions. While the parents of about two-fifths of the migrants to both rural and urban areas were born in the Northeast, only about one-fifth gave

the Northeast as the place of last residence. On the other hand, while only a few of the parents of the respondents were born in the South (primarily the states of São Paulo, Rio de Janeiro, Guanabara and Paraná), about one-third of the urban and one-fifth of the rural respondents gave the South as their place of last residence.

Migrants to the areas studied are of three major types: (1) those who come from nearby areas in the interior, having moved there from other regions earlier; (2) those coming directly from the areas of low opportunity as in the Northeast; and (3) those coming from the industrialized region of the South, most of whom have moved there from places of lesser opportunity such as the Northeast.

The major shift between rural and urban areas is from rural to urban as indicated by the fact that about half of those in urban areas had been reared mostly on farms. Only one-tenth of those in rural areas had been reared mostly in urban areas. Relatives and friends are the main source of information about new settlement areas for most migrants. The early migrants are attracted by the accounts of strangers, newspapers, and the radio. Once established, the newcomers attract their friends and relatives. This suggests that migration channels are formed through a "seeding effect" of the first migrants who then act as magnets drawing others through personal contact.

Whether they have come to a rural or urban area, most migrants say they left their last place of residence for economic rather than for social reasons. Despite the problems of moving, many--particularly those in rural areas--plan to move again in the near future to improve their economic circumstances; of these, a smaller proportion hopes a move will improve their access to health, education, and living conveniences.

Migrants to the rural area of Brasilia are most satisfied, the urban Brasilia migrants next, and the rural Itumbiara migrants least satisfied with their last move. While 83.3 percent of the rural Brasilia migrants feel they are better off as a result of their move, this is true for only half of the rural Itumbiara migrants. The proportion of rural Brasilia migrants indicating an improvement in education and health facilities over those who migrated to the rural area of Itumbiara is most striking: the number of Brasilia migrants so indicating is twice that for Itumbiara. This reflects the greater access to these services in the federal district even though they still are not easily accessible because of transportation problems for the rural areas of the district.

Urban residents of Brasilia show no great desire to move back to the land even if they could buy farm property. Only one-sixth indicate an interest in returning to farming under this condition, and half of this group feel they would need more technical knowledge about farming if they returned.

The attempt to provide land for the rural residents in the federal district so far has not been highly successful. The acquisition of the land on a long-term rental basis is regarded as too costly by many. Of those not living in a núcleo (the name given to the small, planned settlements in Brasilia) but who knew about them, less than half indicate they would like to live in one.

Responses to questions about rural life and people who work on the land reveal wide differences between rural and urban settlers in Brasilia. Despite their imprecision, the responses indicate the ambiguous reaction of urban-oriented people to rural life. While they see the advantages of rural life, urban settlers do not esteem those who work the land. This helps explain the tendency of those on the land to become owners and hire someone else to do the work as a wage laborer or sharecropper.

That educational opportunities in the area affect educational aspirations for the sons is dramatically revealed by data for rural Brasilia and rural Itumbiara. About two-fifths of the Itumbiara respondents say they expect only a primary education for their sons, and only one-fifth want university education for them. In contrast, only 10 percent of the rural Brasilia respondents would settle for primary education for their sons and 53 percent want university education. Since only a small proportion give education as the main or secondary reason for coming to Brasilia, the main influence upon educational aspirations seems to be the presence and the relative accessibility of all levels of education in rural Brasilia in contrast to more isolated rural areas where even secondary school is inaccessible and costly.

Occupational aspirations for sons among the three samples are similar to educational aspirations. Most rural and urban residents of Brasilia want their sons to have professional or entrepreneurial positions, while this is true for only one-sixth of the rural Itumbiara respondents. But the striking fact is that only 5.5 percent of the Itumbiara and fewer of the rural Brasilia respondents want their sons to farm. These figures reflect again the low value given to agriculture even in this newly-settled area of the interior of Brazil. Unless agriculture is given considerably more support and made more economically attractive, it is not likely to interest many progressive or entrepreneurial types.

The comparison of the three samples of migrants in this study indicates the influence of social, economic, ecological, and cultural factors upon the settlement of migrants and their adaptation. The differential densities of the population, the lack of economic opportunities, and the limited means of communication influence the type and size of the migrant populations moving into the interior. The lack of public or private institutional services for the migrants makes them heavily dependent upon family and friends in the initial stage of adaptation. The limited educational and economic resources of many make their chances of successful adaptation unlikely, meaning that most will continue to live at a low social and economic level; when opportunities are limited many will move to other locations in a constant search for something better.

**B. FACTORS AFFECTING THE SUCCESS OF COLONISTS IN
THREE COLONIES IN BRAZIL--PAPUCAIA, UNA, AND CURITIBANOS**

Sugiyama Iutaka and E. A. Wilkening

Focus

A survey of about one hundred colonists in each of three colonies was made to determine the factors influencing their relative success. Success was measured by the colonists' use of technology, income from the plot, level of living, social participation, and level of satisfaction with their life in the colony.

Findings

Based upon the measures used, Curitibanos in Santa Catarina has the most successful colonists followed by Papucaia in the state of Rio de Janeiro and, finally, Una in Bahia. This suggests that colonies in the South are likely to have a higher proportion of successful colonists than are those in other regions.

An analysis of the factors affecting success within the colonies produces somewhat different results for each one. This indicates that the critical factors affecting success vary according to the region. For example, income is most highly associated with education in Curitibanos and with radio listening in Una. In Papucaia, it is mutual assistance among the colonists that is most highly associated with radio listening, while in Una, mutual assistance is most highly associated with the use of credit and in Curitibanos with the number of cities visited. The latter finding suggests that social integration at the local level is associated with contact with the larger society whether by radio or by personal interchange.

Satisfaction with life in the colony is most highly associated with the amount of goods brought to the colony at the time of becoming a colonist for Papucaia, with the number of cities visited for Una, and with the number of persons working on the lot for Curitibaanos. This suggests that social and economic variables affect satisfaction in different ways depending upon the colony.

While education and contacts with the larger society appear to have the greatest effect upon the success of colonists in Brazil, the relative importance of these and other factors varies by region. In one region the educational level may be most important while in another it might be access to credit or technical assistance. The study suggests that attention needs to be given to the specific set of factors crucial for success in different regional settings.

A monograph is being prepared in Portuguese based upon the results of this study of success in the three colonies.

C. DETERMINANTS OF OCCUPATIONAL ACHIEVEMENT, INCOME, AND LEVEL OF LIVING IN BRASILIA, BRAZIL

Fernando A. S. Rocha

Focus

The objective of this study was to show how the occupational level, income, and level of living of an urban sample are affected by father's occupation and by educational level. A causal model using path coefficients (standardized regression coefficients) was used to determine the nature of the relationships.

The results show that the father's occupation has the greatest effect upon the respondent's education which in turn affects the latter's occupational level. The direct effect of father's occupation upon occupation of the respondent is not great. This pattern tends to hold for both young and older age groups.

The effect of father's occupation upon education and upon occupation of the respondent is less for those with a rural background than for those with an urban background. Also, there is a lower relationship between education and occupation among respondents having a rural background. This means that those with a rural background attain occupational levels which are less consistent with their educational level and with the occupation of their fathers. Perhaps those with rural backgrounds are not likely to be as severely limited by their family and educational background in a new and developing urban area such as Brasilia as in older established areas.

As expected, education has a greater effect upon occupational level for the younger age group than for the middle or older age groups. Either education is becoming more relevant for occupational attainment or it becomes less relevant with greater occupational experience. The fact that father's occupation has less effect upon respondent's occupation suggests that the effect of occupational status of father upon that of son has declined while the influence of education has increased.

This study is one of the few attempts to apply a causal model to the analysis of the relationship between education, occupation, and other socio-economic variables using data from a Latin American country. Such studies determine the independent effect of family background and education upon occupational attainment among those of different residential and social class categories. They also show that the determinants of occupational attainment are changing with the younger generation being influenced more by education than by father's occupational status.

**D. THE COMMUNICATIONS BEHAVIOR OF AGRICULTURAL AGENTS
IN RELATION TO THE ORGANIZATIONAL AND CLIENTELE SYSTEM STRUCTURE
OF SELECTED AGENCIES IN RIO GRANDE DO SUL, BRAZIL**

Theodore M. Hyman

Focus

This study deals with the way in which organizational factors facilitate performance of agricultural change agents in their dissemination of technical information. Data were gathered through mail questionnaires and personal interviews with personnel of three agencies in 1967 in the state of Rio Grande do Sul, Brazil.

Of the three agricultural agencies studied, one, the state extension service, was organized to effectively stimulate the use of modern communication such as meetings, demonstrations, radio, and circular letters. The other two agencies (the Secretary of Agriculture and the Ministry of Agriculture) more commonly used the traditional means of communication--personal visits in office or on farms.

In the extension service three-fourths of the change agents make frequent use of mass media channels, but a small proportion of technicians in the agencies normally using traditional media also use mass media.

The more effective internal communications pattern of the extension service influences the way in which its change agents perceive their goals and organizational norms. Effective internal communications also appear to account for the agents' use of extensive group and mass communications and to reduce the number of office visits.

Findings

Some tentative findings are:

1. An agricultural agency with well-defined professional role expectations is more likely to be effective as a disseminator of information, especially if the role performance of its local field personnel requires high levels of communication with its clientele.

2. An agricultural agency whose goals and objectives are directed toward education and implemented by frequent communication between supervisors and field personnel is more likely to influence its field personnel to make wider use of group and mass communication in disseminating technical information to its clientele.

3. Change agents in traditional, service-oriented agencies are more likely to make use of group and mass communication methods when they perceive their role as requiring an educational approach rather than a service approach.

4. Change agents in traditional development agencies are more likely to increase their use of group and mass communication methods when they perceive adequate resources for conducting their work and orient themselves toward their clientele rather than their subject matter.

5. Change agents who concentrate their efforts on farmers who work small farms and who give less attention to the largest farmers are more likely to be high users of group and mass communications methods.

6. Change agents who believe their clientele attach high importance to group and mass communications as sources of technical information are more likely to make greater use of these methods.

E. RELIABILITY AND COMPARABILITY OF
MEASURES RELATING TO CHANGE IN A RURAL AREA OF BRAZIL

John C. van Es and E. A. Wilkening

Focus and Method

A survey of 291 rural families in a municipio of Central Brazil provided an opportunity to test the reliability of interview data obtained from a sample having a low level of income and education. About six months after the initial survey a second interview was completed with 108 sharecroppers. A total of 94 questions were repeated in the second interview ranging from factual data about the respondent and his family to attitudinal type questions. The purpose of the reliability study was to determine the degree of response stability of different types of questions and to compare the reliability of data obtained from respondents of relatively low socio-economic status and low educational levels with reliability of data obtained in other studies.

Findings

It was found that reliability differs according to the type of variable. Reliability is highest for demographic characteristics of the respondent and his family, next highest for factual information on current behavior, then for factual information on past behavior, and least for evaluation of conditions. On the latter type of items 75 to 85 percent have reliabilities of less than .80, depending upon the type of measure of reliability used. The items pertain to an evaluation by the respondents of their present conditions as compared with the past, their intentions for moving, etc., and are not the type of items ordinarily used in attitude or value scales. The implication is that the reliability of the more abstract attitude items would be even lower.

An attempt made to construct one or more indexes of reliability using factor analysis failed. It was expected that response errors of certain types would be more common for certain people, for example, the illiterates, but this is not the case. Errors between interviews by respondents do not fit any particular pattern but are random in nature, making it difficult to predict reliability from any particular observation. This is a significant finding since it means that response errors are not likely to affect the aggregate measure of an item, although they do affect the reliability of individual measures.

There are several conclusions to be drawn from the study:

1. First, the range and the median amount of response error for this rural Brazilian sample does not greatly differ from studies of reliability in the United States. However, there is some indication that when response error is measured by the coefficient of correlation the values are lower for the Brazilian study, reflecting a wider random fluctuation in the measures between the two time periods.

2. Since response error is largely random in nature, it does not greatly affect comparisons between groups of respondents within or between cultures. But, where relationships between variables are the object of study the random error in responses is considerable and has the effect of reducing relationships which actually are present. This suppression of relationships is particularly important when variables which involve recall or evaluations are used.

3. Finally, this study adds to the rather limited knowledge about the nature and extent of the reliability of data collected by personal interview. It confirms the results of previous studies to the extent that response error is probably much greater than is ordinarily believed and that little provision is usually made for assessing the extent of such error.

IV. Staff and Collaborators in Brazil, 1968

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| 5. Fernando A. S. Rocha | Assistant Professor of Rural Sociology, Rural University of Minas Gerais; Research Assistant |
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Graduate Student, University of Florida; Project Assistant

V. Publications

(The following titles represent materials prepared or published as a result of LTC-Brazil efforts in 1968.)

Kenneth T. Cann. "Inter-Governmental Revenue Transfers in Brazilian Municipal Finance." Land Tenure Center Research Paper No. 31, Madison, Wisconsin: University of Wisconsin, August 1968.

John C. van Es and Robert L. Whittenbarger. "Farm Ownership, Political Participation, and Other Social Participation in Central Brazil." Article submitted for publication, July 1968.

_____ and Eugene A. Wilkening. "Reliability and Comparability of Measures Relating to Change in a Rural Area of Brazil." Two articles to be submitted for publication, in preparation.

_____, Eugene A. Wilkening and João Bosco Guedes Pinto. "Rural Migrants in Central Brazil: A Study of Itumbiara, Goiás." Land Tenure Center Research Paper No. 29, Madison, Wisconsin: University of Wisconsin, June 1968.

Sugiyama Iutaka and Eugene A. Wilkening. "Factors Affecting the Success of Colonists in Three Colonies of Brazil--Papucaia, Una and Curitibaanos." Monograph in Portuguese to be submitted for publication.

Orson Eugene Jensen. "Communication and Adoption of Farm Practices in Central Brazil." Unpublished M.A. thesis, University of Wisconsin, 1968.

José Pastore. Satisfação de Migrantes de Brasília: Uma Interpretação Sociológica. São Paulo: Companhia Editora Nacional, in press. (Translation of Ph.D. dissertation, "Satisfaction Among Migrants to Brasília, Brazil: A Sociological Interpretation")

_____, Fernando A. S. Rocha and Eugene A. Wilkening. "A Agricultura e o Homem no Distrito Federal, Brasil: Relatório Preliminar de uma Investigação Sociológica." Land Tenure Center Research Paper No. 28-P, Madison, Wisconsin: University of Wisconsin, March 1968.

Fernando A. S. Rocha. "Determinants of Occupational Achievement, Income and Level of Living in Brasilia, Brazil." Unpublished Ph.D. dissertation, University of Wisconsin, 1968. (Translation in Portuguese being prepared for Brazilian audience.)

Norma Jean Stolz Chinchilla. "Values and Stratification in Brasilia." Unpublished M.A. thesis, University of Wisconsin, 1968.

Eugene A. Wilkening. "Comparison of Migrants in Two Rural and an Urban Area of Central Brazil." Preliminary draft of article to be submitted for publication, November 1968.

_____. "Some Problems of Development in the Central Plateau of Brazil." Article submitted for publication.

_____, João Bosco Guedes Pinto and José Pastore. "The Role of Kinship in Migration and Settlement in Brazil." Journal of Marriage and Family, Vol. XXX (November 1968).

CENTRAL AMERICA

Agriculture In the Economies of Central America

Some 14 million people, multiplying at one of the world's fastest rates, live in the six republics occupying the narrow strip of land between Mexico and Colombia that we call Central America. Illiteracy in the region runs to more than 55 percent, and 70 percent of the people still live in the rural areas.

The development of agriculture in the 227,000 rugged square miles of Central America confronts a number of similar problems at national levels. First of all, because there has been no single comprehensive and consistent land policy, there is no one functional system of land tenure in relation to which the agricultural production economy can be analyzed and compared.

One line of land policy dates to the first land grants of colonial times and has all the official sanctions of formal titles and recognized property rights, systematized by codes of law. The other policy, also as old as the first agricultural settlements of the region, is based on recognition of customary claims to ownership--the "squatter rights" of those who settle under- or unutilized land, clear and use it, who "mix their labor with the soil."

Both practices continue into the modern era, resulting in virtually dual systems of agriculture. The uncertainty of occupancy rights in land outside the modern sector is further complicated by the diverse ways of acquiring rightful ownership claims and leads to tensions and conflicts over title--especially since there are no systematic land records or cadastral surveys.

Interwoven and overlapping the dual tenure system is the dual agricultural economy, with modernization limited very largely to export crops and the food supply coming principally from traditional agriculture. Patterns of settlement, too, tend to contribute to the confused duality. Until recent years, agriculture was concentrated in the temperate zones, mainly the highland plateaus and the Pacific slopes. Now, except for El Salvador, there are substantial areas of recently settled lands. Most of these new lands, however, either are rough terrain or are on the tropical Atlantic coast. The difficulty arises in that there is no tested or stabilized system of traditional agriculture adapted to the new tropical conditions. And in general, where the traditional sector could undertake the process of production typical of the humid tropics, the process itself is predominantly carried out by a few large scale corporate export units.

During the past two decades, agricultural development in Central America--particularly opening up of new export markets in cotton and livestock, and the introduction of yield-increasing inputs such as fertilizers, insecticides, herbicides, etc., linked to the use of agricultural machinery--has brought with it a wrenching in the traditional tenure structures and agricultural economies.

First, as traditional areas of agricultural settlement have been converted to export production, there has been an increase in productivity per unit of land in terms of export crops, but a disruption in staple food production and a displacement of unskilled agricultural labor.

This means that over the past years there has been a decrease in per capita production of food commodities and that many smallholders have been pushed off the land. At the same time, the three percent increase in population per year in the Central American countries and their inability to create sufficient non-agricultural employment opportunities for the increasing labor force, have sent many families to seek subsistence opportunities in the unfamiliar humid tropical areas within their own or in neighboring countries, or to the cities. The rural to rural movement of agricultural populations has taken place from the meseta central to the western and eastern lowlands in Costa Rica; from the central region to the eastern lowlands in Nicaragua, and--to some extent--to the Petén area in Guatemala, but more to Izabal and Escuintla. There also has been movement to non-humid tropical areas; to the northeastern coast area in Honduras and from the central region to the recently-developed south coast area of Guatemala.

In the humid tropics, peasant families encounter conditions which dictate a lower per capita agricultural production. For one thing, the ecological conditions--given current techniques of production--will not support the production of food crops on a continuing basis after more than three, four, or at most five years. Nor are these areas of more recent settlement serviced by credit, roads, education, etc., which are concentrated in the older settlement areas.

The break in the mutually-dependent systems of subsistence and export-oriented agriculture has had several socio-political manifestations. Organization of peasant unions and land invasions, with reprisals, are more frequent now than ever before in the histories of these countries. Movement across borders by peasants to settle in other countries now occurs regularly (Salvador to Honduras, Salvador to Guatemala, Nicaragua to northern Costa Rica), while the surplus rural population also is beginning to drift to

the cities. Distribution of income from agriculture has changed in all countries, with a higher percentage of income going to the small landholding group--with all the implications this had for reduced purchasing power for the peasants and for the development of mass markets.

In terms of historical fact, it may well be that the total agriculture of any one country cannot be modernized and integrated into the national economic system because of limited national markets. It is this limitation which the common market program may be able to lift. Clearly, however, unless great numbers of people now principally engaged in a mere survival agriculture in Central America are somehow brought to higher levels of productivity and income, there can be only a very limited demand for the products of the new industries which the common market is intended to stimulate. Although an export agriculture can thrive if set amidst a rural poverty economy of low incomes, new industries of the common market cannot thrive amid poverty.

The Land Tenure Center Program in Central America

From the beginning, the Land Tenure Center's work in Central America has developed in close collaboration with the universities of that region, both individually and through their participation in the Institute for Social and Economic Research of the Central American Universities. Selection of specific projects had been decided jointly by Wisconsin and the university in the country involved, with the aim of providing a potentially unifying and systematic framework through which studies could be related and synchronized. The resulting program has been focused on such fundamental research and public policy issues as the nature of the traditional agricultural economies, squatter settlement and lack of legal occupancy, the large-scale farm and its relation to subsistence agriculture, the mobility and status of surplus agricultural labor.

One of the first studies, by George Hill, Manuel Gollás, and Gregorio Alfaro, focused on the tenancy rights of squatters in the Coto Brus area of southern Costa Rica. Carlos Quirós investigated comparative progress in agricultural development under three different public policies for land occupancy (also in Costa Rica), and Carlos Sáenz studied the extent to which surplus population had been absorbed on unoccupied land and whether a policy of "permissive settlement" provides a partial solution to population growth. James Taylor in Nicaragua looked into spontaneous agricultural settlement along a recently extended highway in the tropical jungle near Rama. In Guatemala, Hill and Gollás studied the highland Indian in relation to the problem of minifundia, and Lester

Schmid explored the role of migrant labor in agricultural development. Meanwhile, Rodolfo Quirós focused on the common market in relation to agriculture. Benjamín Villanueva made an analysis of the process of institutional innovations in Honduras, in the search for strategic areas of public policy, especially within the shirt of emphasis in the country towards national planning and the role of the modern corporation in the agricultural sector.

Now there is concern about the possibility of unifying some of the tested hypotheses and conceptions into useful principles or ideas for social action. Consequently, Benjamín Villanueva is reviewing relevant literature on Central America--both the Land Tenure Center research publications as well as other information-- in an effort to explore the implications of research findings for Central American policy. It is expected that some theoretical formulations would be complemented and/or modified in relation to the empirical findings, in order to provide some common ground for the formation of a Central American strategy for agricultural development.

It appears likely that some generalizations from particular situations in a particular Central American country can be made for the region as a whole. Such a process could be highly productive in terms of possible advice and/or political action which could result from these generalizations, provided that they are stated in such a form that adaptation to particular situations is helped rather than hindered. In this regard, Lester Schmid's studies on migratory labor in Guatemala and his suggestions of ways in which the present system of recruitment and employment of the migratory workers can be improved to the benefit of the workers themselves, their employers, and the economy of Guatemala, might be extended to other areas with similar characteristics. Similarly, Carlos Sáenz' study of the problem of providing employment opportunities for a rapidly growing labor force through the organization of local governmental units for tax administration, appears applicable to similar situations in the rest of Central America. James Taylor's research on the agricultural economy that has developed in an area of recent and spontaneous settlement, located in the eastern (Atlantic) region of Nicaragua, provides some grounds for predicting and examining the type of farm units established and how farm type is related to income levels, to the nature of the migration process toward previously uninhabited areas, and to general problems of land tenancy and occupation.

Manuel Gollás' study on minifundia units in Guatemala should be extremely useful. Another idea to be explored is the influence of the Central American Common Market on the structure of agriculture and the possibilities of an expansion of the market for the formation of common agricultural development policies. Rodolfo Quirós' study on this latter problem could prove highly useful in this regard.

The basic analytical framework of Villanueva's study is essentially a theoretical and empirical investigation of the process and significance of capital accumulation in the economic development of Central America. This study focuses on the role of private foreign investments in the export sector, its significance in terms of domestic capital formation and the implications of these relationships for alternative efforts of international cooperation. In contrast to the export sector, the relative importance of the transformation and modernization of the traditional-subsistence sector and the role this could play for the process of regional integration, is emphasized. The research findings of the Land Tenure Center in Central America play here a decisive role in complementing our understanding of different systems of economic institutions and their role in the development process. Generally, the creation of productive employment opportunities within the economic structures in the region is one of the most important issues which public policy must face at the present stages of Central American development.

GUATEMALA

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Transformation of Subsistence Agriculture in Guatemala

Background Issues

Guatemalan efforts in agricultural development have taken place in three areas: 1) the large farm export-oriented sector; 2) "agrarian reform," mainly the colonization of government lands; 3) increasing production on lands already occupied in the traditional subsistence sector.

Within the past 10 to 15 years the production of cotton has increased greatly in Guatemala, as a result of plowing pasture lands, putting new land into production, and displacing some corn production. Coffee and sugar production have increased moderately, with lack of world demand and resulting quotas slowing down increases in production. In the last few years, the profitability of cotton production has declined somewhat, so the government and other agencies have turned to the production of beef for export in order to compensate for lowered foreign exchange earnings. Breeding animals have been imported and the Petén has been opened up to large scale cattle farming. The planting of rubber trees has likewise been promoted by the government of Guatemala and by AID.

None of these activities has resulted in much increased employment for the rural workers. Cotton production in Guatemala has resulted in year-round employment for several thousand workers and seasonal employment for some 100,000 workers for periods of 30 to 60 days. The production of beef offers even less employment than that of cotton, while the production of rubber offers only seasonal employment to a limited number of workers. It is clear that the activities of the export sector are not likely to regularly employ the vast number of unemployed or underemployed rural workers. On the contrary, the present export structure does tend to increase the unequal distribution of wealth by affording opportunities chiefly to the already wealthy.

The great majority of the farmers of the region possess very small plots of land which are farmed with primitive tools and without the use of modern inputs. The production of corn, almost universally grown to provide food for the family, averages less than 15 bushels to the acre. In Guatemala these farmers are able to exist only by working for a portion of the year on large farms which produce cotton, sugar cane, coffee, or lemon grass. Efforts on behalf of these subsistence farmers have been concentrated in two directions: 1) to move them to other regions, and 2) to increase production in their home communities. In Guatemala, the Agrarian Reform Agency (INTA) has been preoccupied with the national farms since the Montenegro government decided to return them to the workers. Though the agency in control of the national farms owns some 30,000 hectares, the national agrarian bank owns another 135,000 hectares, and other government agencies own 5,000 to 10,000 hectares, in two years INTA has managed to turn over to workers' cooperatives only two farms involving 370 families. Even these farms are still largely controlled by the government. While the return of these farms has been heralded as an agrarian reform, there is little hope of affording relief to other crowded areas, since the farms are mostly in the mountains of Alta Verapaz and are already occupied by enough families to exploit them.

INTA has also settled some 960 families on approximately 1,200 hectares of land principally in the north of Huehuetenango and Quiché and the Seból region of Alta Verapaz. About 19 cooperatives have been organized by FYDEP, the agency in charge of the development of the Petén. These involve some 760 families who have been settled in the River Passion region of the Petén, partly to occupy the area in opposition to the plans of Mexico to flood this part of the Petén by the construction of a power dam.

In 1968 INTA had tried to settle campesinos on national lands, but they were driven off by armed force on the part of large landowners. This land was already claimed in large tracts by liberationists -- that is, people given land for their support of Armas--

who claimed that the dispossessed campesinos had been Arbenz supporters, or in other words, Communists. It is not known if INTA has been able to resolve this conflict.

In total, therefore, little progress has been made in colonization of new areas by INTA or FYDEP. The budget of INTA was cut drastically at the start of 1968 when government tax reforms were rescinded about one week after they were put in force, resulting in the resignation of the president of INTA and the firing of many employees. There has been spontaneous settlement of sparsely settled regions near the altiplano in recent years, and in the department of Izabal and the south coast region. This movement apparently has not been investigated systematically.

Efforts to improve agricultural production, and to increase handicraft activities have been undertaken by several agencies of the government and by private agencies as well. FAO experiments indicate that average returns of \$3 per dollar invested can be obtained from the application of fertilizer to corn and wheat in the highlands. This ratio is considerably higher than in the lowlands, probably because insect and disease problems are fewer in the highlands. Evidence indicates that storekeepers and others selling fertilizers are increasing their sales, even in the most traditional areas where there are no governmental promotional agencies. Yet even though there appears to be a potential for increasing the production of traditional crops and despite local success, the over-all effect has been small.

A second means of developing traditional agriculture is to increase the production of more lucrative crops on the small farms. The United Nations has proposed a program for increasing the production of vegetables and cool climate fruits in the highlands of Guatemala, an area in which these crops are thought to have a comparative advantage. The production of vegetables has increased considerably in recent years, partly because growing markets in neighboring countries have resulted in larger acreages planted, and partly because producers have increasingly used commercial fertilizers in addition to organic fertilizers. Much of the production of vegetables and fruit now takes place on the farms of the indigenous population. The high income per land unit and the high labor requirements make these crops potential sources of improved income on the extremely small farms in the highlands. However, the land suitable for vegetables is probably quite limited in the highlands. Markets are also limited for both vegetables and fruit, as evidenced by the dumping of surplus vegetables at times.

Better animal husbandry would appear to be a third source of improved income on the small farms. At present, death rates are high among all farm animals and chronic animal ill health due to uncontrolled parasites and diseases appears to restrict production

greatly. A change in chicken breeds would likely increase production, but the majority of the campesinos and some city residents are convinced that criollo eggs are the best, probably because imported breeds are generally raised in confinement and so produce light colored yolks. Better disease control methods (not the present indiscriminate and costly injection of antibiotics) could make a substantial contribution to real income on many small farms.

Alternative employment in non-agricultural or urban activities does not appear to be developing very rapidly. Plastics production in factories, for example, continues to displace more people in the home production of water vessels and baskets than are being employed in these factories. On the whole, manufacturing employed 11.5 percent of the economically active population in Guatemala in 1950, but only 11.3 percent in 1964, according to the censuses. Employment in construction dropped from 2.7 percent to 2.6 percent of the work force. Even though employment in agriculture had dropped from 68.2 percent of the economically employed in 1950 to 65.3 percent in 1964, almost 60 percent of the increased employment took place in agriculture.

The foregoing discussion indicates that the solution to the unemployment and underemployment problems of Guatemala will not be easy, in the face of a rate of population increase in excess of three percent. The export agricultural sector appears to offer little in increased employment. There is little agreement concerning the quality of the undeveloped national lands and even less on how they can be utilized profitably and relatively permanently by the campesinos. There are possibilities of increasing production on the small farms of the campesinos, especially through the use of fertilizers and a change to more intensive crops, but the problems of how to get the necessary inputs to the campesinos and how to develop markets for vegetables and fruit have not been resolved. Employment in non-farm activities is not expanding rapidly enough to absorb the population increase.

The Land Tenure Center Studies

An earlier study by Lester Schmid focused upon the role of migratory workers in the economic development of Guatemala. These workers represent the poorest segment of the subsistence agricultural sector. They receive so little income from farming or other employment within their home communities that they are forced to seek employment on large cotton, coffee, and sugar cane farms. This early study concluded that, in order to raise the wages and improve the lot of these workers, it is necessary to raise the productivity of the subsistence sector from which they came.

Therefore, the present study was initiated to research the process by which the unproductive subsistence sector could be transformed into a highly productive part of the commercial sector, at least in certain regions of the country. The subjects of this new study had shown ability to maintain standards of living at least somewhat above those generally prevailing in the subsistence sector; hopefully, their experience and characteristics will shed some light on the transformation process. The study includes the characteristics of the people involved, the history of how these farms developed, the type of farming, the techniques used, the size of farm, and many other factors.

One-hundred-eighteen (118) farmers were interviewed in 18 municipios located in about 12 regions, each distinctive in regard to ethnic background of the people and type of crops grown. The information obtained from these farmers has been supplemented by interviews with mayors, teachers, extension agents, and promotores (persons trained at the Catholic University to teach Spanish or promote better farming or organize non-farming activities in the home communities).

The study was begun in July 1967. Preparations, field work, and data tabulation were completed by August 1968, and writing is now in progress.

Tentative Conclusions

The following tentative conclusions have been indicated by the available information. More research as well as further analysis of the data is needed to substantiate or to disprove them.

One of the findings, contrary to most studies of the traditional areas, was that much of the land owned by the interviewed farmers had been purchased. In a majority of cases the first land owned had been purchased rather than inherited.

It is suspected that the more enterprising and successful farmers were able to purchase the land of the less successful. It would appear that the use of fertilizer and other yield increasing techniques by some farmers and not by others would increase the economic distance between these groups. The economic position of the latter would actually deteriorate as product prices went down due to increased production. Therefore, the farmers who had increased production would be able to purchase land from those who had not done so. The distribution of land may thus be becoming even more unequal as the transformation of the traditional agriculture occurs.

Another finding was that with irrigation and year-round production, the farmers' labor was needed nearly all year. With intensive cultivation of vegetables under irrigation, incomes were quite high with income per land unit being extremely high. However, among the regions studied, only on a few farms in Montufar and Monjas was the ideal of the family farm approached; that is, only in these regions with some mechanization were incomes reasonably high, with most of the work being done by the farm family.

Rents are high where the land is farmed intensively. In San Juan Sacatepéquez a renter stated that he was able to make about as much working rented land as he could as a day worker--about \$0.50 per day. This seems to agree with Ricardo's statement that rents would adjust to productivity, leaving the renter with either a subsistence level of income or a conventional level of income.

The sharecropping institution known as medianía has generally not provided much income for the cultivator of the soil. However, new sharecropping arrangements which are taking place in the intensive tomato growing region of Teculután appear to provide an income for the mediante somewhat above that of the wage worker, though not as high as claimed by the landowners. It might be possible to persuade the landowners, who generally constitute an economic class higher than the mediante and are better educated, to invest in inputs which increase production per land unit, and so increase incomes both for himself and the mediante.

Where the more labor intensive crops are grown the proportion of rural people who migrate to the coast to work is lower, as compared to communities where only corn and beans are grown by hand methods. However, even in these communities the majority of the people remain very poor.

The medium-sized farm is an important source of employment in many communities. If the goal of independence from outside labor were to be realized on these farms (through mechanization, for example), the incidence of unemployment or sub-employment would be increased in these areas.

Increases in production in the subsistence agriculture sector, as in the export sector, require and cause increases in imports. The inputs necessary to increase production--fertilizer, insecticides, fungicides, and to some extent improved seed--must be imported. Increases in production, if they are accompanied by increases in income (that is, if prices are not reduced enough to more than offset the production increases), likewise cause increases in imports since the farmers' demand increases more rapidly for radios, motorcycles, autos, etc., than it does for domestically produced products such as better foods, homes, or domestically produced clothing.

The Common Market offers opportunities to export certain vegetables and fruits to the other Central American countries. However, not all of the results of the Common Market appear to be beneficial. Where tariffs protect industries within the Common Market, rising prices of inputs for the farmers (apparently the case with fertilizer) have the result of decreasing profits of the small producers as well as the large, restricting production, and causing higher prices to the consumer of the farm-produced items. The chief beneficiaries appear to be the foreign investors in this industry.

Production in excess of market demands is a phenomenon not restricted to the countries with highly developed agriculture. There are also times in Guatemala when producers cannot sell their produce. For example, a vegetable producer dumped a large quantity of onions because he could not sell them. Likewise, much sugar cane produced on medium-sized as well as on large farms goes uncut because of lack of sufficiently large quotas. Present processing facilities are not adequate to absorb all of the production, while on the other hand these facilities are capable of processing more sugar than can be sold in the domestic market or under U.S. quotas.

In many communities there are farmers who are using modern inputs to increase their production. The children of these producers would appear to be among the best candidates for receiving land in new areas. This procedure would not satisfy the social desire to give or sell the land in new areas to the rural people with the lowest incomes, but it would probably result in greater increases in production. The removal of these young people would indirectly benefit those remaining by decreasing the labor supply and increasing wages. If some of the young men of Almolonga were transferred to other potential vegetable producing areas, they could serve as demonstrations for farmers from other areas. Some training in why the methods used in Almolonga work well in that community would be desirable so that they could adapt the practices used to a new environment.

Apparently independent small farmers and sons of independent small farmers would be better candidates to receive land than colonos, unless the latter were given considerable training by their employer before being given land. Evidence gathered in this study indicates that where the recipients of land have been colonos, the effort has been unsuccessful. However, it is generally true in these cases that the amount of land received has been small and the quality poor.

In many areas the producers must pay an arbitrio municipal which absorbs a large share of profit. The municipios are generally restricted in their sources of income, and understandably they tax produce leaving the municipio. Such taxes do, however, discourage production.

Transportation costs are also generally high; together with arbitrios these constitute major costs. These high costs restrict the movement of products and restrict the adjustment of production to those areas in which it is most efficient. Reduction in these costs should cause more specialization of production, a greater interdependence of the various sectors, and a reduction in the present inefficient production of corn in many areas. It must be recognized that non-economic forces are present in the desire of most small farmers to grow their own corn, but economic forces are also important.

Vertical integration in tobacco growing appears beneficial to the growers. Those growers in Ovejero felt that the tobacco company had solved all of their problems, while those interviewed in Monjas shared a tendency to regret the lack of independence which the contracts with the tobacco company entailed. The successful formation of a cooperative, which was being attempted, may overcome some of the problems of bargaining with the tobacco companies, while at the same time retaining the advantages.

The production of meat, milk, and eggs appeared very inefficient on most of the farms where interviewing was done, mainly because of the large proportion of illnesses and deaths among all classes of livestock. In many cases, however, animal production provided a surprisingly large proportion of the farm income, illustrating its possibilities even under somewhat indifferent management. Increases in production through better feeding, breeding, and control of illnesses and parasites would appear to offer increased incomes to small farmers without increasing land area. Artificial breeding of dairy and all-purpose cattle could do much to help the small farmer make better use of uncultivable land or marginal land in many highland areas. Some type of feed storage is needed in most areas, however, as pastures are not sufficient in the dry season unless irrigated.

In communities close to Guatemala City, the land available to the local people is being reduced by purchases on the part of city residents for residential or "pleasure farming." Since there is no municipal tax on either the land or the improvements, the net result is a reduction in income and levels of living for local residents.

Though the emphasis of this study has been upon production, it is evident that some type of homemaking training for the women would be desirable, especially in the preparation of vegetables grown in several of these communities and in health and sanitation. This training would allow income increases to be used more efficiently in raising levels of living.

Progress on Previous Schmid Studies

Much time was spent working with the translators of the thesis, "The Role of Migratory Labor in the Economic Development of Guatemala," the summary with the same title, and the paper entitled, "The Productivity of Agricultural Labor in the Export Crops in Guatemala: Its Relation to Wages and Living Conditions." The summary has been published as a Land Tenure Center Paper in English and in the Revista Economía of the Instituto de Investigaciones Económicas y Sociales of the Universidad de San Carlos. The thesis has been translated and will be published by the Universidad de San Carlos. The paper on productivity has been published in the Journal of Inter-American Economic Affairs and is to be published in the Revista Economía and distributed to the employers of rural labor in Guatemala. Another article, "The Role of Seasonal Labor in the Economic Development of Guatemala," has been published by the Land Tenure Center and has been submitted to Land Economics.

Other LTC Research

The first LTC research in Guatemala, by George Hill and Manuel Gollás, was a study of the heavily populated (largely Indian) western highlands region. A research paper was published by LTC in 1968 summarizing this project. A dissertation by Manuel Gollás based upon this research will be completed in January 1969.

HONDURAS

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Institutional Innovations and Economic Development

Background Issues

Honduras is the poorest country in Central America in terms of per capita income, and the country with the slowest rate of growth during the latter years of the 1960s. With an estimated population above two million inhabitants, of which roughly 70 percent are rural, Honduras faces one of the most difficult problems of economic development in the Latin American continent. The extreme dependence of the country on a few export crops, mainly bananas, coffee, and wood, has aggravated the general fiscal crisis produced by fluctuations in export prices. However, the main reasons for the relative

stagnation of the country are found not within these exogenous factors but rather in the way in which the production system functions. Most of the export earnings of the country have been absorbed either by external factor payments--a direct consequence of the high proportion of foreign investments in the country--or by additional imports. Agricultural production for domestic consumption, except for the case of beans and maize--which were primarily responsible for the increased response to the incentives provided by demand from El Salvador and other Central American countries--has just kept pace with population growth or lagged behind it. In the livestock sector the situation is even more critical: the over-all growth rate in the period 1960-66 was only 0.5 percent. And although the supply of manufactured goods has increased at more or less satisfactory rates, there are still shortages which are reflected in high import coefficients for consumer as well as intermediate and capital goods.

The greatest single problem of the Honduran economy, however, can be found in the extreme inequalities in land distribution and the obsolete land tenure systems which still remain as an inheritance of the colonial period. Adding to these problems--or at least not helping to solve them--is the generalized laissez-faire attitude of the Honduran government which, until recent years, has been the predominant characteristic of Honduras' development policies. Public expenditures are extremely low in both absolute and relative terms, even in comparison with that of other countries in the area or at similar stages of development, and this, together with its slow growth over the last few years, has greatly limited its usefulness as a source of employment and income. Regarding public investments in infrastructure and social services, the government and the autonomous agencies were handicapped by deficiencies in administrative or project-execution capacity, lack of properly trained personnel, and the lack of an effective civil service or some system which would offer sufficient security to top-level technical cadres to ensure the continuity of studies and programs.

Within this background, the creation of central government institutions primarily designed to accelerate the rate of economic development in the country, was speeded up in the 1950s. In that year, the Central Bank of Honduras and the National Development Bank were created to concentrate the legal tender power into the hands of the state--since up to 1950 there were only private banks, mostly foreign-owned, which had the legal-tender power--and to control through qualitative controls on credit, the flow of capital to the perceived strategic sectors of the economy. As a result of the multinational decisions in Punta del Este in August 1961--and partly due to an increasing awareness of land tenure problems in the country--the National Agrarian Institute was created by the governmental decree of March 6, 1961. This institution would come to supplement the works of the Technical Interamerican Service of Agricultural

Cooperation, which was established in Honduras by a bilateral agreement with the United States in 1951. And to "coordinate" these governmental institutions in their economic development activities, the National Economic Council, which was created in February 1955, was changed to a "National Superior Planning Council" in October 1965, with the functions of advisor and consultant to the Executive and Legislative powers of the state and the formation of the "integral plans of social and economic development of the country."

Since the creation of new governmental agencies to deal with the problems of economic development is a common experience in the developing world, particularly in Central America, it seemed to us that an analysis of the role and significance of these institutional innovations in the development process was warranted. In an attempt to isolate strategic economic and political factors in the process of arriving at meaningful development policies, this study was undertaken in Honduras, as a pilot project for subsequent extension to the Central American area. As the research effort was begun it became increasingly clear that in order to understand the processes of institutional innovations for the country as a whole, information would have to be collected in relation to both the historical activities of the Honduran government as well as in relation to some of the most significant problems which the country is actually facing.

The Historical Context

A careful analysis of the laws and decrees which were enacted in Honduras from the colonial times in the sixteenth century to the present period, convinced us that these enactments were mainly designed to consolidate existent property rights in land, regardless of the actual distribution of these rights. The non-compliance on the part of the administrative bureaucracy with the minimum substantive requirements of these laws, could not but produce a system of concentrated land ownership in a few hands and the growth in absolute numbers of traditional subsistence cultivators.

In terms of capital accumulation within the country, the type of corporate arrangement which was expressed within the encomienda system had undesirable consequences for economic development. The extraction of a capitalist surplus to be sent abroad and the pursuance of a cheap labor policy, if not labor exploitation, were contributing factors in the general stagnation of the country.

Governmental efforts during the nineteenth and twentieth centuries were basically designed to provide concessionary contracts to foreign corporations, or to large landholders, in an effort to secure the capital and managerial resources so much needed within

the Honduran economy. Such a policy has come to complicate and to aggravate the general problems of development of the present time. The dependence on the foreign-owned banana business is one of the distinguishing consequences of the laissez-faire policies of the nineteenth and twentieth centuries.

Within this context, the creation of the Central Bank of Honduras, the National Development Bank, the National Agrarian Institute, and the National Superior Planning Council, seems to represent--at least superficially--a break with the past and a shift of emphasis in development policy.

The Central Bank of Honduras and The National Development Bank

Anglo-American collaboration in the reconstruction of multi-lateral trade after the Second World War resulted in the creation of the International Monetary Fund and the International Bank for Reconstruction and Development, institutions which played a decisive role in the general design and structuring of the Central Bank of Honduras and The National Development Bank, in 1950.

The needs for the creation of these two institutions were clearly apparent and generally the result of the increasing dependence of Honduras on international trade as a source of revenues. Agricultural exports were becoming increasingly important within the priorities of public action; therefore, the stimulation of agricultural exports through the easy availability of credit became one of the most important policy issues of the last 18 years. The stimulation of the capitalistic sector of agriculture--formed by medium and large size farming units--was therefore conceived to be the main strategic activity for the development of the national economy. The results of this policy have been outstanding: the production of an increasing agricultural surplus in cotton, coffee, and livestock has been highly significant.

On the other hand, the monetary policies of the Central Bank--which in fact include the quantitative controls of credit to the National Development Bank--can be classified under the term "orthodox monetary policies," in contrast to another position in Latin America which is called "structuralist" and is mainly represented by the Economic Commission for Latin America. "Orthodox" monetary policy has to do with the maintenance of a stable price level, free convertibility of currencies, and the provision of an adequate monetary supply for the attainment of these ends. These are in fact policies designed to assure security of expectations regarding the legal tender power of the state; and from almost any angle from which we wish to explore them, they seem to be sound economic policies.

However, orthodox monetary policy has also resulted in an orthodox development strategy, i.e., provide all the necessary technical and financial resources to the service of the capitalist sector. In this sense, the largest number of individuals surviving in the traditional subsistence sector do not get any stimulation from these strategic institutions. Credit Assistance Programs for the small farmer have not been very successful.

The National Agrarian Institute and the Extension Service

The creation of the National Agrarian Institute as another administrative agency of the state was not too different from earlier attempts at correcting deficiencies in the market structures of the country. It was basically designed to comply with newly acquired international responsibilities and it was also the result of an increasing awareness of structural bottlenecks in the agricultural sector for the achievement of economic development objectives. The accomplishments of this institution in terms of the Agrarian Reform Law objectives have been up to the present time insignificant. It has just been in 1969 that a new effort in the direction of colonization activities and probable expropriation procedures has been accelerated, mainly due to the willingness of the government to authorize the issuance of agrarian bonds in the amount of \$15 million and an authorized loan from the Interamerican Development Bank, for \$7.5 million. This is the institution on which "the hopes of the peasant class" in Honduras mainly depend.

In contrast, the Extension Service ("Desarrural") has been reorganized to service the capitalistic sector of agriculture as a complement to the National Development Bank, with highly productive results in terms of accomplishments. This shift in policy became necessary after the evaluation of the agency's accomplishments in serving the traditional sector since 1951, and deeply felt needs in the national economy to increase the production of basic grains as rapidly as possible and to make the most efficient utilization of scarce economic and technical resources in the production of agricultural products.

The National Superior Planning Council

It seems that this is one of the most strategic institutions within the Honduran economy. Even though up to now its main activities have been restricted to the preparation of development plans with no enforcement authority, and to the coordination of all the governmental agencies, it has played a decisive role in making economic planning a recognized instrument of public policy in the country. It is probably from this institution that the main impact on development could be expected in the near future.

Findings

Generally this study has shed light on the particular strategies of development which appear more appropriate at the present stage of Honduras' economic development. In our judgment, this basically resides within the National Superior Planning Council and within the modern corporations in the agricultural sector. It is within these institutions that a combined and cooperative effort at economic development could fruitfully originate. The basic issue in the strategy of development for Honduras appears to reside in the accumulation of capital and its direction to productive purposes. In the creation of effective institutions to accelerate the pace of capital formation, a great deal could be learned from the modern corporation. This, we are doing now in our work in Central America.

This is not to imply that the activities of the National Agrarian Institute and the other institutions mentioned in this study are not important for the future development of the country. Clearly they are; but the disappointing accomplishment of the Agrarian Institute also clearly pointstoward the search for more dynamic institutional innovations designed to serve the agricultural sector, particularly the traditional subsistence one. In this search, what we have learned from the private corporations, both in the export and domestic sectors in Honduras, could be extremely useful.

In particular, it is necessary to emphasize the importance of foreign investments within the agricultural sector of Honduras, mainly in the form of large scale corporations, and the institutional aspects of ownership. More specifically, it becomes necessary to recognize the great significance which foreign investment has had in the development process of Honduras, especially in regard to the cumulative net total factor payments on investment income made abroad. The efficiency of foreign investments in large scale plantation agriculture can only be judged by relating it to alternative agricultural systems within the country. A computation on net total factor payments on investment income made abroad from 1946 to 1966, revealed that they amounted to \$208 million, which can be compared with the gross national product of Honduras in 1966, which amounted to \$524 million.

The theoretical relationships which seem to account for this degree of efficiency and productivity within the Honduran agricultural sector--from which most of these payments on investment income originate--are directly related to the type of institution operating in the sector, i.e., modern large-scale agricultural or agro-industrial corporations. Some of the important institutional variables which characterize the modern corporation as a productive institution have been theoretically analyzed in the study, in the hope that they shed light on future institutional innovations designed to serve the agricultural sector.

NICARAGUA

Based on thesis of James R. Taylor, Jr.,
Now Assistant Professor, Agricultural Economics,
New Mexico State University

Agricultural Settlement and Development in Eastern Nicaragua

Background Issues

Nicaragua is the largest and least densely populated of the five Central American republics. It lies entirely within the tropical zone, encompassing an area of approximately 130,000 square kilometers, or about 12 million hectares. The population in 1963 was about 1.5 million persons, and is presently growing at about three percent per year. At this rate, the total population will reach two million by 1972. Approximately 60 percent of the population has been classified as rural, and 40 percent as urban.

Growth of national income in the postwar period suggests that the physical potential is being exploited. Per capita income more than doubled in the two decade period, 1945 to 1965, increasing from \$157 to \$321. This period has not been one of continuous growth, however. From 1945 to 1955, per capita incomes rose from \$157 to \$245. The 1950 to 1960 period saw a slight decline in per capita incomes (an average of six-tenths of one percent per year). The first half of the 1960s saw a return to rapid growth in per capita income, with G.N.P. increasing at the rate of nine percent per year, leaving a net gain of six percent per capita after adjusting for population growth.

The important role of the export sector in the Nicaraguan economy cannot be overemphasized. In particular, the role of cotton in explaining Nicaragua's income growth in the postwar period is quite evident. The social effects of this development, and what it portends for the future are frequently viewed with skepticism. The main arguments are, generally: that the production of food for internal markets has deteriorated as the nation's development efforts, both private and public, have been concentrated on cotton; that extreme disparities in income levels, changes in tenure status and technological unemployment, all adversely affecting the "peasant" sector, have resulted from the cotton boom; and finally, that dependence on a single export product for economic prosperity often has disastrous consequences, through the effect of substitution by synthetics over-supply as new competitors enter the field, and the whiplash effect of worldwide economic recessions on primary producing economies.

Within this general background, the Agrarian Institute of Nicaragua had tentatively decided on an agricultural settlement and development project in a 300,000 hectare area, known as the Rigoberto Cabezas Project. The conditions envisaged by this type of decision making seemed to offer a fertile ground for the exploration of ideas related to agricultural development.

The Land Tenure Center Study: Focus

The research project originated through an agreement made in 1965 between the Land Tenure Center and the Agrarian Institute of Nicaragua (IAN). The latter is a semi-autonomous government agency that was created in order to implement Nicaragua's Agrarian Reform Law, passed in 1963. IAN was interested in having researchers from the LTC assist their personnel in carrying out a survey of the economic, social, and agronomic conditions of the area of settlement.

Agricultural colonization, under leadership and inducements offered by the national governments, had been selected as the principal means by which the problem of insufficient economic opportunity in agriculture for a growing population would be resolved. The selection of the Rigoberto Cabezas area for the first large scale regional settlement and development project was predicated on the assumption that large areas of unsettled public lands were available for directed settlement within the confines of the project area. In addition to government-sponsored settlement, the project also called for the provision of land titles to persons already occupying land in the area (spontaneous or voluntary settlers) as well as their inclusion in economic development programs associated with the settlement project.

In this context, this study was designed to take a first look at the nature of the agricultural economy which was emerging in the sparsely settled region of Nicaragua as a result of spontaneous, self-help colonization. It sought to describe the farm units that have been established in terms of income and productivity levels, resource and enterprise levels and combinations, location with respect to markets, land tenure class, and to analyze the relationship between these and other factors. The nature of both subsistence and commercial agriculture, as well as the interaction between the two, was the prime concern of the analysis. The study also dealt with the reasons underlying the penetration of large numbers of cultivators for the first time into the tropical rain forests of eastern Nicaragua.

Finding

Early in the course of the field investigation it became apparent that the presumption with respect to the number of persons actually settled on farms in the project area was not accurate, and that in fact the area was virtually filled with incoming settlers and natives of the region. The significance of this finding was twofold: in the first place, it precluded or greatly reduced the possibility of selecting additional settlers from other areas of the country where land tenure problems were deemed to be most critical. In addition, by calling attention to the magnitude of the voluntary migration movement, it underlined the more limited relevance to actual conditions in the Atlantic Region of those aspects of agrarian legislation and policy which deal with the role of the state in assisting spontaneous settlers that have located themselves and their families on the public domain.

In analyzing these problems the question arose: does the frontier economy, as it is or in the direction in which it seems to be moving, represent an effective solution to the problems that precipitated migration in the first place? If the answer is a negative one, an explanation was called for, and from the explanation a formulation of the manner by which the process of settling and developing public lands might be improved.

In order to contribute to the basic orientation of agricultural development policy, I tried to answer the above questions with respect to a broader framework of alternatives which included: measures to increase employment and incomes in areas of agricultural outmigration, the expansion of urban employment, and the settlement of public lands under various forms of government participation. This study should contribute toward informed evaluation of these alternatives by providing economic data on the results obtained from unguided and unassisted settlement of national lands. Inferences from this data can be made with respect to the potential effects of measures designed to improve upon these results. Furthermore, the importance of understanding the ongoing experience of un-directed land settlement in the Atlantic Region of Nicaragua is underlined by the ecological differences between the humid tropics of the Atlantic Region and the rest of the country. Under these conditions, the ability of agricultural settlers to adopt their habits of production to a new environment has important long-run consequences.

Using value of product added per unit of labor as an index of economic performance, it was found to be closely related to the level of reproducible capital utilized with each unit of labor. By classifying capital according to its components, it was seen that the type of capital largely responsible for variations in the level of labor productivity was cattle and associated inputs (fences, corrals, and pastures).

An examination of alternative means by which the subsistence sector might increase its level of productivity and income was undertaken. The alternatives included:

1. Increasing the output of typical subsistence crops through improved production techniques and more serviceable farm to market roads.
2. Growth of the present capitalist sector (cattle production) so as to incorporate the land and labor presently devoted to subsistence farming.
3. Transformation of subsistence production toward emphasis on cattle production.

COSTA RICA

Based on "Population Growth, Economic Progress, and Opportunities on the Land: The Case of Costa Rica," by Carlos Sáenz

The Land Tenure Center Study

Because of the special history of Costa Rica, the land tenure patterns which developed were unique in Latin America. The hacienda type of organization which is common to other Latin American countries did not arise; instead, family type agricultural units had become the organizational form. This pattern, developed in the colonial period, contributed to the social, political, and economic organization of the country.

Instead of the usual small upper class and a large lower class, class differences were slight or non-existent. This economic and social organization provided the basis for the success of the democratic system of government which did not, however, insure a good working relationship between the state and the economy.

The laissez-faire economic policy of the state of Costa Rica resulted in economic relations not conducive to development, specifically in the case of the production, processing, and marketing of coffee which has permitted the emergence of a powerful economic group of employers on the one hand and a group of landless laborers on the other. Concentration of land ownership occurred in the Meseta Central with consequent restriction of economic opportunities for the laborers. Recently, the fast rate of population growth and the limited economic opportunities in the Meseta have stimulated a heavy migratory movement to new areas.

The practice of allowing occupation of public lands and the right of the occupants to acquire legal titles to the land has served as an escape valve preventing the build-up of social pressures and has also permitted the government to dedicate its energies to the development of the coffee industry. However, the high costs of acquiring legal titles and the inattention of the central government to the problems of the settlers, has created a large subsistence center in the outer provinces.

Industrial employment is growing more slowly than industrial production because of the adoption of capital intensive methods of production by industry. Commercial farms are liberating labor through mechanization and a tendency toward cattle production rather than somewhat more labor intensive crop production. Therefore, the expansion of the subsistence sector will have to proceed at an increasing rate to fully accommodate the displaced workers as well as the increase in population.

However, if the people of Costa Rica are to raise their standards of living, this expansion cannot be allowed. Rather, the already large subsistence sector needs to be integrated in the economic and political systems of Costa Rica. This integration is necessary to enlarge the market for industrial products, which cannot be produced efficiently on the limited scale now permitted by restricted domestic demand. Furthermore, citizenship will be extended through development and equalization of opportunities, and a truly democratic form of government preserved.

Subsistence agriculture in Costa Rica is of the frontier type rather than the traditional type. Growth exists in the frontier type because of an imbalance between expectations and achievement. Growth can be maintained by providing the necessary conditions for rising levels of achievement so that levels of expectations can also rise, rather than being revised downward to conform to stagnant levels of achievement.

Since many subsistence farmers have more land than they cultivate and still must work as part-time laborers, the occupation of land is not providing the means to better standards of living. Decisions to invest and to produce are made in light of market, financial, and technical considerations. The central government presently shows no interest in providing the necessary roads, market facilities, technical assistance, and research to the outlying areas.

A potential exists in the local areas for providing these services, however. The local governments levy taxes against all land in accordance with road frontage, regardless of the quality of the road. The proceeds of this tax are spent for costly roads leading to the large farms of political figures--not for less costly roads which could be extended further with the same revenue. Land taxes

go to the central government and are not reinvested in the outlying areas. If both of these revenues could be utilized locally as investment funds for public services, they could accelerate the development of these areas.

Bibliography

- Gollás-Quintero, Manuel. "History and Economic Theory in the Analysis of the Development of Guatemalan Indian Agriculture." Unpublished Ph.D. dissertation, University of Wisconsin, January 1969.
- Hill, George W. and Manuel Gollás-Quintero. The Minifundia Economy and Society of the Guatemalan Highlands Indian. Land Tenure Center Research Paper No. 30, Madison, Wisconsin: University of Wisconsin, July 1968.
- Sáenz, Carlos. "Population Growth, Economic Progress, and Opportunities on the Land: The Case of Costa Rica." Unpublished Ph.D. dissertation, University of Wisconsin, January 1969.
- Schmid, Lester. "El papel de la mano de obra migratoria en el desarrollo económico de Guatemala," Economía (January 1968), pp. 56 - 91. Also LTC Reprint No. 46-S.
- _____. "The Productivity of Agricultural Labor in the Export Crops of Guatemala: Its Relation to Wages and Living Conditions," Inter-American Economic Affairs, Vol. 22, No. 2, pp. 33 - 45. Also LTC Reprint No. 48.
- _____. The Role of Seasonal Labor in the Economic Development of Guatemala. Land Tenure Center Paper No. 43, Madison, Wisconsin: University of Wisconsin, July 1968.
- Taylor, James. "Agricultural Settlement and Development in Eastern Nicaragua." Unpublished Ph.D. dissertation, University of Wisconsin, 1968.
- Villanueva, Benjamín. Capital Accumulation in Economic Development: A Study of Economic Institutions in Central America. (In preparation January 1969.)
- _____. "Institutional Innovations and Economic Development, Honduras: A Case Study." Unpublished Ph.D. dissertation, University of Wisconsin, 1968.
- _____. The Role of Institutional Innovation in the Economic Development of Honduras. LTC Research Paper No. 34 (in preparation), Madison, Wisconsin, University of Wisconsin, 1969.

Appendix I

STAFF AND STUDENTS

associated with the program of the

LAND TENURE CENTER

1962-68

- A. Faculty and Other Senior Researchers Supported by the Land Tenure Center
- B. Land Tenure Center Research Program Advisory Committee
- C. Land Tenure Center Fellows

Land Tenure Center

310 King Hall
University of Wisconsin
Madison, 53706



APPENDIX I

A. Faculty and other Senior Researchers

Supported by the Land Tenure Center*

1962 - 1969

<u>Name</u>	<u>Present Position - Field</u>	<u>Project(s)</u>
Adams, Dale	Program Planning and Coordination Agency for International Development, Washington, D.C.	Project Leader, LTC/ Colombia; Migration and farm organiza- tion in Colombia
Albert, Fritz	Associate Professor, Agricultural Journalism University of Wisconsin	Documentary film foot- age illustrating Land Tenure Center research projects
Anderson, Charles	Professor, Political Science University of Wisconsin	Political aspects of agrarian reform
Beuscher, Jacob	Professor, Law University of Wisconsin (Deceased)	Project Leader, Legal aspects of land tenure and water rights--Brazil, Chile, Colombia
Bögholt, Carl	Professor Emeritus, Philosophy, and Consultant, Land Tenure Center University of Wisconsin	Seminars on research methodology
Brown, Marion	Assistant Professor, Agricultural Journalism, and Land Tenure Center University of Wisconsin	Project Leader, LTC/ Chile; Communications and agricultural development in Chile; peasant organizations in Chile

*Faculty members who have received some salary support from LTC. Approximately 15 other faculty members have been associated with LTC, only some of whom appear on the attached list of Advisory Committee Members.

<u>Name</u>	<u>Present Position - Field</u>	<u>Project(s)</u>
Cann, Kenneth	Associate Professor, Agricultural Economics Western Kentucky University, Bowling Green	Taxes and local gov- ernment in Brazil
Castillo, Carlos	Secretary General, Central American Economic Integration Treaty Agricultural Economics	Consultant on Central America
Chaplin, David	Assistant Professor, Sociology University of Wisconsin	Landholding and labor patterns in Peru
Clark, Ronald	Assistant Professor, Agricultural Economics, and Land Tenure Center University of Wisconsin	Project Leader, LTC/ Bolivia; Evaluation of the Bolivian agrarian reform
Dorner, Peter	Professor, Agricultural Economics, and Land Tenure Center University of Wisconsin	Director of Land Tenure Center, and Chairman of Advisory Committee; Project Leader, LTC/Chile; Profit sharing in Chilean agriculture; agrarian reform in Chile
Ebling, Walter	Professor Emeritus, Agricultural Economics University of Wisconsin	Problems of data col- lection and reporting on agrarian reform in Venezuela
Erasmus, Charles	Professor, Anthropology University of California, Santa Barbara	Re-evaluation of agrarian reform in the Bolivian Revolution
Fals Borda, Orlando	Program Director, UN Research Institute for Social Development; Professor, Sociology, National University of Colombia (on leave)	Visiting Professor, Ibero-American Studies; Community development in Colombia

<u>Name</u>	<u>Present Position - Field</u>	<u>Project(s)</u>
Felstehausen, Herman	Assistant Professor, Agricultural Journalism, and Land Tenure Center University of Wisconsin	Project Leader, LTC/ Colombia; Rural service facilities in Colombian agrarian reform
Flinn, William	Assistant Professor, Rural Sociology, and Land Tenure Center University of Wisconsin	Migration in Colombia
Greenfield, Sidney	Associate Professor, Sociology University of Wisconsin, Milwaukee	Patronage patterns in Brazil
Grunig, James	Assistant Professor, Agricultural Journalism, and Land Tenure Center University of Wisconsin	Decision-making pro- cesses of Colombian latifundistas
Halvorson, Harlow	Professor, Agricultural Economics University of Wisconsin (Deceased)	Chairman of Advisory Committee
Havens, A. Eugene	Associate Professor, Rural Sociology University of Wisconsin	Project Leader, LTC/ Colombia; Community studies in Colombia
Heath, Dwight	Professor, Anthropology- Sociology Brown University	Re-evaluation of agrarian reform in the Bolivian revolution
Hill, George	Consultant, Rural Sociology Louis Berger Associates, in Guatemala	Project Leader, LTC/ Central America; Migration and settle- ment in Costa Rica and Guatemala
Iutaka, Sugiyama	Assistant Professor, Sociology University of Florida	Migration in Brazil
Kanel, Don	Professor, Agricultural Economics, and Land Tenure Center University of Wisconsin	Director of Land Tenure Center, Madison; Size of farm

<u>Name</u>	<u>Present Position - Field</u>	<u>Project(s)</u>
Nisbet, Charles	Assistant Professor, Agricultural Economics University of California, Los Angeles	Informal credit in Chile
Parsons, Kenneth	Professor, Agricultural Economics University of Wisconsin	Project Leader, LTC/ Central America
Pastore, José	Associate Professor, University of São Paulo, Brazil; and Research Associate, Land Tenure Center, Rural Sociology	Satisfaction among migrants to Brasilia
Patch, Richard	Professor, Anthropology State University of New York, Buffalo	Visiting Professor; Advisor to LTC Bolivian research program; Colonization in Bolivia
Paulson, Belden	Professor, Political Science University of Wisconsin, Milwaukee	Leader of Brazilian project; Local political movements in Brazil
Penn, Raymond	Professor, Agricultural Economics University of Wisconsin	Director of Land Tenure Center, Madison; Chairman of Advisory Committee
Posada, Antonio	Agricultural Economics Economic Consultant FAO, Rome	Land Tenure in the Cauca Valley of Colombia
Price, Robert	Law Attorney General's Office State of Alaska	Legal aspects of rural labor organization and land reform
Ramsey, Charles	Professor, Sociology University of Colorado	Levels of living in Central America
Sáenz, Carlos	Assistant Professor, Agricultural Economics University of Costa Rica; and Research Associate, Land Tenure Center	Costa Rican population growth, economic progress, and opportunities on the land

<u>Name</u>	<u>Present Position - Field</u>	<u>Project(s)</u>
Schmid, Lester	Assistant Professor, Agricultural Economics University of Wisconsin	Migratory labor in Guatemala
Strasma, John	Associate Professor, Agricultural Economics and Economics University of Wisconsin	Project Leader, LTC/ Chile; Financing agrarian reform and land taxes
Thiessenhusen, William	Associate Professor, Agricultural Journalism, and Land Tenure Center, Ag. Development University of Wisconsin	Chile's experiments in agrarian reform; agrarian reform in Venezuela
Thome, Joseph	Associate Professor, Law University of Wisconsin	Project Leader, LTC/ Chile; Water law and irrigation in Colom- bia and Chile; land titles in Bolivia
van Es, Johannes	Assistant Professor, Rural Sociology University of Illinois	Sharecroppers in Brazil
Villanueva, Benjamín	Assistant Professor, Agricultural Economics, and Land Tenure Center University of Wisconsin	Economic institutions and capital accumula- tion, Central America
Wilkening, Eugene	Professor, Rural Sociology University of Wisconsin	Project Leader, LTC/ Brazil; Migration in Brazil
Zeitlin, Maurice	Associate Professor, Sociology University of Wisconsin	Peasant organization and development of peasant class consciousness in Chile

B. Land Tenure Center Research Program Advisory Committee

1962 - 1969

<u>Name</u>	<u>Present Position</u>	<u>Period</u>
Anderson, Charles	Professor, Political Science University of Wisconsin	1963-66
Baldwin, Robert	Professor, Economics University of Wisconsin	1966-67
Beuscher, Jacob	Professor, Law University of Wisconsin	1962-66 (Deceased)
Brown, Marion	Assistant Professor, Agricultural Journalism University of Wisconsin	1968-
Buse, Rueben	Professor, Agricultural Economics University of Wisconsin	1968-
Castillo, Carlos	Secretary General of Central American Economic Integration Treaty	1966-
Caton, Douglas (ex-officio member)	Director, Agriculture and Rural Development Service, Agency for International Development, Washington, D.C.	1966-68
Dorner, Peter	Professor, Agricultural Economics University of Wisconsin	1965-66
	Director, Land Tenure Center; and Chairman, Advisory Committee	1968-
Epstein, Leon	Professor, Political Science University of Wisconsin	1962-63
Fals Borda, Orlando	Professor, Sociology National University, Bogotá, Colombia	1965-
Flinn, William	Assistant Professor, Rural Sociology University of Wisconsin	1966-68

<u>Name</u>	<u>Present Position</u>	<u>Period</u>
Glade, William	Professor, Business and Economics University of Wisconsin	1963-64
Halvorson, Harlow	Professor, Agricultural Economics University of Wisconsin	1962-65 (Deceased)
Havens, A. Eugene	Associate Professor, Rural Sociology University of Wisconsin	1968-
Hawkins, Everett	Professor, Economics University of Wisconsin	1967-
Kanel, Don	Professor, Agricultural Economics University of Wisconsin (Director, Land Tenure Center	1966- 1967)
Kearl, Bryant	Professor, Agricultural Journalism; and Vice Chancellor, Madison Campus University of Wisconsin	1962-68
McMillan, Robert (ex officio member)	Land Tenure Center Contract Monitor, Agriculture and Rural Development Service, Agency for International Development, Washington, D.C.	1966-68
Mulvihill, Edward R.	Professor, Spanish University of Wisconsin	1962-66
Parsons, Kenneth	Professor, Agricultural Economics University of Wisconsin	1966-68
Penn, Raymond	Professor, Agricultural Economics University of Wisconsin (Director, Land Tenure Center	1962- 1962-64)
Powell, John	Lecturer in Government, and Center for Rural Development Harvard University; and Assistant Professor Tufts University	1967-
Schmidt, John	Professor, Agricultural Economics University of Wisconsin	1966-

<u>Name</u>	<u>Present Position</u>	<u>Period</u>
Seidman, Robert	Professor, Law University of Wisconsin	1968-
Smith, Stephen	Professor, Agricultural Economics; and Dean, School of Natural Resources University of Wisconsin	1968-
Thome, Joseph	Associate Professor, Law University of Wisconsin	1966-68
Wilkening, Eugene	Professor, Rural Sociology University of Wisconsin	1963-66
Wood, Garland	Professor, Agricultural Economics Michigan State University	1965-67

C. Land Tenure Center Fellows

1962 - 1969

This is a list of all graduate students who have participated actively in Land Tenure Center programs. We have attempted to give an up-to-date account of what each of the Land Tenure Center fellows is now doing. In cases where the information on a former student's present occupation has not been recently confirmed, the last known occupation of the fellow is listed. If the occupation of a former fellow is unknown, this has been indicated. The summaries at the end of the list give breakdowns of the types of fields in which Land Tenure Center fellows are now working.

* An asterisk indicates any graduate student who has been supported through Land Tenure Center assistantship funds during all or part of his studies.

**A double asterisk indicates those Land Tenure Center fellows currently receiving support through Land Tenure Center assistantship funds.

--No asterisk indicates those Land Tenure Center fellows who received financial support from sources other than the Land Tenure Center but who were active in LTC programs.

<u>Name</u>	<u>From</u>	<u>Major</u>	<u>Present Occupation</u>
Acierto, Pedro	Philippines	Rur. Soc.	Graduate Student Dept. of Soc. & Rur. Soc. Louisiana State U. Baton Rouge, La. 70803
*Agor, Weston	New York	Pol. Sci.	LTC fellow
Amaya, Susana	Colombia	Ag. Journ.	LTC fellow; LTC editorial assistant
*Arevalo, Luis	Colombia	Ag. Econ.	Working on Mich. State market project in Cali, Colombia for 10 months beginning Oct. 1968; LTC fellow
**Ariza-Nino, Edgar	Colombia	Ag. Econ.	LTC fellow
Arnone, Steven	(Latin America)	Econ.	LTC fellow
Ashton, Guy	(U. of Illinois)	Anthro.	MUCIA fellow in field/Colombia
Baer, Donald E.	(U. of Illinois)	Econ.	MUCIA fellow in field/ Costa Rica & Honduras
*Barraza, Luciano	Mexico	Ag. Econ.	Research Analyst Depto. de Estudios Económicos Banco de México México, D.F.
**Barriga, Claudio	Chile	Ag. Econ.	LTC fellow (AID participant)
*Basaños, Juan Carlos	Argentina	Ag. Econ.	Working in cooperative agency, Argentina
Beebout, Harold	Iowa	Ag. Econ.	LTC fellow
*Bello-Ricardo, Gonzalo	Venezuela	Ag. Econ.	Working in Venezuela
Benkert, Gail (Mrs. Daniel Shea)	California	Geog.	U.W. Grad. Student (Madison)

<u>Name</u>	<u>From</u>	<u>Major</u>	<u>Present Occupation</u>
*Bernal, Hernando	Colombia	Rur. Soc.	Director, Dept. of Sociol. Acción Cultural Popular Escuelas Radiofónicas Bogotá, Colombia
Betancourt, Roger	Wash., D.C.	Econ.	LTC fellow
*Blandón, Alfonso	Honduras	Ag. Econ.	Jefe del Depto. Técnico Banco Nacional de Nicaragua Managua, Nicaragua
*Brannon, Russell	Oklahoma	Ag. Econ.	Asst. Prof. of Ag. Econ. Univ. of Kentucky Lexington, Ky.
*Brown, Marion	Arizona	Ag. Journ.	Asst. Prof., Ag. Journ./LTC U. of Wisconsin, Madison
Brumbaugh, C. S.	Michigan	Pol. Sci.	LTC fellow
*Burke, Thomas E.	Iowa	Econ.	Desk officer for Bolivia Western Hemisphere Dept. IBRD Washington, D.C.
Cadwallader, Len	Pa.	Econ.	Occupation unknown
Calderon, Paul	Peru	Ag. Econ.	LTC fellow
**Camacho, Alvaro	Colombia	Rur. Soc.	LTC fellow
*Camacho, Carlos	Ecuador	Ag. Econ.	Formerly with IDB and LTC-CIDA Bolivian project. Has returned to Ecuador
*Cann, Kenneth	N. Amer.	Ag. Econ.	Associate Professor Department of Economics Western Kentucky University Bowling Green, Ky. 42101
*Chaney, Elsa	Wash., D.C.	Pol. Sci.	LTC fellow; Assistant to LTC Director
Chirinos, José A.	Peru	Rur. Soc.	LTC fellow
*Clark, Mark E.	Nebraska	Ag. Econ.	USAID/Uruguay Montevideo, Uruguay

<u>Name</u>	<u>From</u>	<u>Major</u>	<u>Present Occupation</u>
Cobbe, Roberto	Brazil	Ag. Journ.	Editor (and teaching) Escola Superior de Agricultura "Luiz de Queiroz" São Paulo, Brazil
Cohan, Hugo	Argentina	Ag. Econ.	LTC fellow
*Cole, David L.	Minnesota	Ag. Econ.	Asst. Prof., Ag. Econ. Michigan State University E. Lansing, Mich. 48823
Colmenares, Humberto	Colombia	Ag. Econ.	(As of 9/68) On leave from Universidad del Valle Cali, Colombia, to work with Planeación Nacional
*Conard, John H.	Pa.	Econ.	Working (for VW?) in San Francisco
*Cook, Theodore	Iowa	Ag. Econ.	Project Officer International Devel. Found. Santiago, Chile
*Coronas, Cristián	Costa Rica	Ag. Econ.	Asst. Manager of a coffee processing plant in San José, Costa Rica
Cortez, Mario	Chile	Econ.	Grad. Student Washington University St. Louis, Mo.
Cottingham, John E.	Wisconsin	Ag. Econ.	Professor, Head, Dept. of Agricultural Industries Wisconsin State University Platteville, Wis. 53818
*Dandler, Jorge	Bolivia	Anthro.	MUCIA fellow, in field/Bolivia
Dantas, Antonio (Sobrinho)	Brazil		LTC fellow
*Davis, L. Harlan	Virginia	Econ.	Asst. Prof., Ag. Econ. University of Georgia Athens, Georgia
**Deaton, Brady	Kentucky	Ag. Econ.	LTC fellow

<u>Name</u>	<u>From</u>	<u>Major</u>	<u>Present Occupation</u>
*De La Espriella, Ed.	Costa Rica	Ag. Econ.	Marketing Analyst Esso Standard Oil San José, Costa Rica
Del Fa, Mario J.	Argentina	Law	LTC fellow
*Del Pino, Jaime	Chile	Commerce	Last known occupation: Shell Oil Co., Chicago (As of 2/67)
Del Rfo, Alfredo	Chile	Sociology	LTC fellow
*De Luca, Richard J.	Illinois	Spanish	Last known occupation: Graduate student U. of Minn./Duluth Division of Humanities Duluth, Minn. (As of '64)
Deuster, Paul	Wisconsin	Econ.	MUCIA fellow, in field/ Indonesia
Diaz-Bordenave, Juan	Paraguay	Ag. Journ.	Head, Communications Program, IICA Zona Andina, Lima, Peru
*Dick, Daniel	Kansas	Ag. Econ.	Agricultural Economics Adviser to Brazil, USAID, Rio de Janeiro, Brazil
Douglas, W. Clarke		History	LTC fellow
Drake, George	New Jersey	Sociology	Asst. Prof., Dept. of Sociology-Anthropology Western Washington State College Bellingham, Washington 98225
*DuMoulin, Diana (Mrs.)	Wash., D.C.	Ag. Econ.	Econ. Instructor Ulster County Community College Stoney Ridge, New York
Duran, Fernando P.	Paraguay	Rur. Soc.	LTC fellow
El-Zoghby, Salah	Egypt	Rur. Soc.	LTC fellow
*Erven, Bernard	Ohio	Ag. Econ.	Asst. Prof., Ag. Econ. University of Wisconsin USAID/UW contract, Univ. of Rio Grande do Sul Porto Alegre, Brazil

<u>Name</u>	<u>From</u>	<u>Major</u>	<u>Present Occupation</u>
Falabella, Gonzalo	Chile	Rur. Soc.	LTC fellow
*Finn, Michael	New York	Econ.	LTC fellow
*Fletschner, Carlos	Paraguay	Ag. Econ.	Visiting Lecturer, ESCOLATINA Univ. de Chile, Santiago, Chile (Returning to campus, 1/69)
*Fonseca, Luiz	Brazil	Ag. Journ.	(As of 11/67) Associate Communicator, Program of Higher Agricultural Education, Inter-American Institute of Agricultural Sciences of the OAS, Zona Andina Lima, Peru
Franco, José María	Venezuela	Law	Centro de Jurisprudencia Universidad de los Andes Merida, Venezuela (completing thesis; will return for exam early in 1969)
Fuenzalida, Hernán L.	Chile	Law	Interim Director Centro de Investigaciones sobre Recursos Naturales (CIREN), Escuela de Derecho Universidad Católica de Valparaíso; Valparaíso, Chile
Gallinal, Gabriel	Uruguay	Ag. Econ.	Position not known
Gans, Marjorie		Rur. Soc.	Field research supervisor, Inst. for Urban & Regional Studies Washington University, St. Louis
García, José	Venezuela	Ag. Econ.	In Venezuela; occupation unknown
Goldberg, Don	Wisconsin	Pol. Sci.	Last known occupation: teaching in Philadelphia
*Gollas-Quintero, Manuel	Mexico	Ag. Econ.	LTC fellow
*Grunig, James	Iowa	Ag. Journ.	Asst. Prof., LTC; with LTC program in Colombia IICA-CIRA Apartado Aéreo 14592 Bogotá, Colombia

<u>Name</u>	<u>From</u>	<u>Major</u>	<u>Present Occupation</u>
Guijarro, Alfredo	Ecuador	Ag. & Ext. Ed.	In Ecuador; occupation unknown
*Gutierrez, Elvia	Colombia	Ag. Econ.	CVC Apartado Aéreo 2366 Cali, Colombia
Gutierrez, Jaime	Colombia	Ag. Journ.	(As of '66) Instituto Colombiano Agropecuario Apartado Aéreo 5813 Bogotá, Colombia
Handelman, Howard	New York	Pol. Sci.	Ford Foundation/Ibero American fellow; in field/Peru
**Haney, Emil B.	Ohio	Ag. Econ.	LTC fellow
**Haney, Wava	Ohio	Rur. Soc.	LTC fellow
*Harkin, Duncan	Illinois	Ag. Econ. (Forestry)	Assistant Professor, Dept. of Ag. Econ./Forestry University of Wisconsin Madison
Hatch, John	Virginia	Econ. Hist.	LTC fellow
Hewitt, Lynn	Wisconsin	Ag. Econ.	Agricultural Education Advisor International Programs/ Dominican Republic Texas A & M University (Now in Dominican Republic for Texas A & M)
Hills, Stephen	Illinois	Ag. Econ.	Instructor & Acting Chrmn., Econ. Clarke College, Dubuque, Iowa
*Hyman, Theodore	N. C.	Ag. Journ.	Assistant Professor, Dept. of Sociology & Anthropology N. C. State University Raleigh, N. C. 27607
Ibáñez, Alonso	Mexico	Ag. Econ.	Graduate Student University of Chicago
*Imable, Rogelio	Chile	Ag. Econ.	LTC fellow
Jacobs, Jeffrey	New York	Law	In field/Chile

<u>Name</u>	<u>From</u>	<u>Major</u>	<u>Present Occupation</u>
*Jaime, Conrado	Colombia	Rur. Soc.	Last known occupation: Banco de la República Bogotá, Colombia
James, William R.	California	Anthro.	MUCIA fellow, in field/ Colombia
*Jaramillo, Hernan	Colombia	Rur. Soc.	Last known occupation: Professor Pontificia Universidad Javeriana Bogotá, Colombia (As of 11/67)
Jensen, Orson Eugene		Rur. Soc.	Instructor, Sociology Anoka-Ramsey Junior College Coon Rapids, Minnesota
*Jimenez-Cadena, Gustavo	Colombia	Rur. Soc.	Professor, Rural Sociology Pontificia Universidad Javeriana Bogotá, Colombia; Researcher, Centro de Inves- tigación y Acción Social (CIAS) Bogotá, Colombia
*Jimenez-Sanchez, Leobardo	Mexico	Ag. Journ.	Researcher/Professor Escuela Nacional de Agricultura Colegio de Postgraduados Chapingo, Mexico; Assoc. Scientist Centro Internacional de Mejora- miento de Maíz y Trigo Mexico, D. F.
Kaminsky, Mario	Argentina	Ag. Econ.	LTC fellow
King, John S.	Wisconsin	Ag. Econ.	Occupation unknown
Krabill, Lavern	Ohio	Dairy Sci.	LTC fellow
Krauska, Joan	Wisconsin	Pol. Sci.	Occupation unknown
Lazinger, Joel	Iowa	Rur. Soc.	LTC fellow
*Logsdon, David	Florida	Rur. Soc.	LTC fellow

<u>Name</u>	<u>From</u>	<u>Major</u>	<u>Present Occupation</u>
Lopera, Jorge	Colombia	Ag. Econ.	Asst. Economist Instituto Colombiano Agropecuario (ICA) Bogotá, Colombia
Lopes, Renato	Brazil	Rur. Soc.	Executive Secretary Associação de Crédito e Assis- tência Rural (ACAR) Belo Horizonte, Brazil
Lynch, Lawrence	Wisconsin	Hist.	VISTA Volunteer Albuquerque, New Mexico
Maffei, Eugenio	Chile	Rur. Soc.	Jefe, Capacitación y Evaluación Social Corporación de la Reforma Agraria (CORA) Santiago, Chile; Professor, Facultad de Ciencias Sociales, Universidad Católica Santiago, Chile
Magdub, Abdo	Mexico	Ag. Journ.	Editor, Departamento de Divulgación, Instituto Nacional de Investigaciones Agrícolas Mexico, D.F.
Magill, John		Pol. Sci.	Ford Foundation/MUCIA fellow, in field/Bolivia
Martínez, Gregorio	Mexico	Ag. Journ.	Centro Internacional de Mejora- miento de Maíz y Trigo (CIMMYT) Mexico, D.F.
Martínez, Jesús	Mexico	Ag. Journ.	Secretario Escuela Nacional de Agricultura Colegio de Postgraduados Chapingo, Mexico
Martínez, José	Venezuela	Ag. Econ.	Centro Gumilla Centro de Investigación y Acción Social Caracas, Venezuela; Faculty member Universidad Católica Andres Bello Caracas, Venezuela
Martínez, Manuel	Argentina	Ag. Econ.	Graduate student, Labor Relations, Michigan State University East Lansing, Michigan

<u>Name</u>	<u>From</u>	<u>Major</u>	<u>Present Occupation</u>
Mason, Edward	Wash., D.C.	Rur. Soc.	LTC fellow
*Maturana, Sergio	Chile	Ag. Econ.	Professor ESCOLATINA Santiago, Chile
*McCoy, Terry	Ohio	Pol. Sci.	Asst. Prof., Political Science Ohio State University Columbus, Ohio 43210
McGrath, Mary Jean	Wisconsin	Ag. Journ.	LTC fellow; Communications Spec. Int'l Coop. Training Ctr., U. of W.
**Medina, Rubens	Paraguay	Law	Returning to campus for spring '69 semester to complete dissertation and instruct in Law School.
Meissner, Charles	Wisconsin	Ag. Econ.	LTC fellow
Mercado, César	Philippines	Ag. Journ.	LTC fellow
*Monge, Fernando	Ecuador	Ag. Journ.	Director of Communications IICA-CIRA Bogotá, Colombia
Montero, Emilio	Chile	Ag. Econ.	Inter American Institute of Agricultural Sciences Montevideo, Uruguay
*Morales, Hector	Chile	Ag. Econ.	Inter-American Development Bank Washington, D.C.
**Multhaup, Eric	Conn.	Rur. Soc.	LTC fellow
**Negrón, Santos	Puerto Rico	Ag. Econ.	LTC fellow
Nietschmann, Bernard	California	Geog.	Ford Foreign Area Fellow, in field/Nicaragua
*Nisbet, Charles	Wisconsin	Ag. Econ.	Asst. Prof., Economics University of California Los Angeles, California 90024
Ocontrillo, Eduardo	Costa Rica	Ag. Econ.	Agricultural Economist Oficina de Planificación Casa Presidencial San José, Costa Rica
O'Conner, Theron	Wisconsin	Law	Graduate student, Law 3. Univer- sity of Wisconsin, Madison.

<u>Name</u>	<u>From</u>	<u>Major</u>	<u>Present Occupation</u>
Oliart, Francisco	Peru	Law	Researcher in Agrarian Law, Univ. Agraria de Molina, Peru. (as of 2/68)
*Orjuela, Olga (Mrs. O. Ortiz)	Colombia	Ag. Econ.	Returned to Colombia in 3/68; occupation unknown
*Ortiz, Jaime	Ecuador	Ag. Econ.	Junta Nacional de Planificación Quito, Ecuador
*Osterhoudt, Frank	New York	Ag. Econ.	Asst. Prof., Agricultural Econ. New Mexico State University Las Cruces, New Mexico
Parra, Rodrigo	Colombia	Rur. Soc.	LTC fellow
*Pastore, José	Brazil	Rur. Soc.	Asst. Prof., Depto. de Estatística Aplicada; Sociología Faculdade de Filosofia Universidade de São Paulo São Paulo, Brazil; Research Associate/LTC
*Paúl, Felipe	Chile	Ag. Econ..	Corporación de la Reforma Agraria (CORA) Santiago, Chile
*Peinado, Marcelo	Bolivia	Ag. Econ.	Asst. Prof., Agricultural Economics, Utah State University (Now working with CIDIAT in Mérida, Venezuela)
Pérez, Gustavo	Colombia	Ag. Econ.	Last known occupation: Agricultural Economist Instituto de Investigaciones Tecnológicas Bogotá, Colombia (As of 1966)
*Pinto, João Bosco	Brazil	Rur. Soc.	IICA-CIRA Bogotá, Colombia
Ponce, Mariano M.	Argentina	Ag. & Ext. Ed.	Working for INTA, Argentina
Portes, Alejandro	Cuba	Soc.	MUCIA fellow, in field/Chile

<u>Name</u>	<u>From</u>	<u>Major</u>	<u>Present Occupation</u>
*Powell, John	N. J.	Pol. Sci.	Lecturer in Government Harvard University; Research Associate Center for International Affairs Harvard University; Assistant Professor, Political Science, Tufts University
Queda, Oriowaldo	Brazil	Rur. Soc.	LTC fellow
*Quesada, Gustavo	Brazil	Rur. Soc.	Research Assistant Dept. of Communication Michigan State University East Lansing, Michigan 48823
*Quiros, Carlos	Costa Rica	Ag. Econ.	Jefe de la Sección de Formula- ción de Programas y Proyectos Unidad Sectorial de Planificación Instituto de Tierras y Coloniza- ción San José, Costa Rica
*Quiros, Rodolfo	Costa Rica	Ag. Econ.	Associate Agricultural Economist IICA, Zona Norte Guatemala City, Guatemala (Plans to return to Madison to complete Ph.D. thesis Summer 1969)
*Rask, Norman	Iowa	Ag. Econ.	Asst. Prof., Agricultural Economics, Ohio State University Columbus, Ohio
Raup, Phillip, Jr.	(M.I.T.)	Pol. Sci.	Latin American Teaching Fellow, in field/Colombia. (Plans to return to M.I.T. in January or February 1969)
Reading, Reid		Pol. Sci.	Instructor University of Pittsburgh Pittsburgh, Pennsylvania
*Reinheimer, Steven	New York	Ag. Econ.	LTC fellow
**Restrepo, Juan	Colombia	Ag. Econ.	LTC fellow
Richter, Humberto	Brazil	Ag. Econ.	IEPE Porto Alegre, Rio Grande do Sul Brazil

<u>Name</u>	<u>From</u>	<u>Major</u>	<u>Present Occupation</u>
Rivero, Rodolfo	Venezuela	Ag. Econ.	Graduate student, University of California, Berkeley
*Rocha, Fernando	Brazil	Rur. Soc.	Professor Instituto de Economia Rural-UREMG Viçosa, Minas Gerais, Brazil
Rodríguez, Jorge	Cuba	Spanish	LTC fellow
Rojas, Humberto	Colombia	Rur. Soc.	LTC fellow
Roldan, Iris	Argentina	Rur. Soc.	LTC fellow
Rosner, Monroe	New York	Ag. Econ.	Acting Deputy Chief Rural Development Division USAID Mission to Bolivia (Above position until March 1969; plans to enter University of Wisconsin, Madison, in June 1969 to work toward Ph.D.)
Rucks, Carlos	Uruguay	Ag. & Ext. Ed.	LTC fellow
*Ruth, Richard	Kansas	Econ.	Assoc. Prof., Economics Wichita State University Wichita, Kansas
*Saenz, Carlos	Costa Rica	Ag. Econ.	Research Associate, LTC/ San José, Costa Rica; Asst. Prof., University of Costa Rica, San José, Costa Rica
Salerno, Sorocaima	Venezuela	Ag. Econ.	Returned to government position, in Venezuela.
Santa Iglesia, Jesús	Philippines	Ag. Econ.	Prof., Agricultural Economics University of the Philippines Los Baños, Philippines
Santamaría, David	Nicaragua	Ag. Econ.	Assistant to President Instituto Nacional de Comercio Exterior e Interior Managua, Nicaragua; Professor, School of Economics & National School of Agriculture Universidad Nacional de Nicaragua Managua, Nicaragua
*Saraiva, Helcio	Brazil	Rur. Soc.	LTC fellow

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<u>Name</u>	<u>From</u>	<u>Major</u>	<u>Present Occupation</u>
*Satterthwaite, Ridgway	Pa.	Geog.	Fulbright fellow, in field/ El Salvador
Saulniers, Alfred	Mass.	Econ.	LTC fellow
*Schmid, Lester J.	Wisconsin	Ag. Econ.	Asst. Prof., Ag. Econ./LTC University of Wisconsin, Madison
*Schmidt, Earl W.	Wisconsin	Pol. Sci.	Ação Comunitario do Brasil São Paulo, Brazil
*Schuster, Jorge	Venezuela	Ag. Econ.	Agricultural Section Comisión Económica para América Latina, Naciones Unidas Mexico, D.F.
*Seeberger, Harold M.	Missouri	Ag. Econ.	Asst. Prof., Heidelberg College, Tiffin, Ohio
*Sepulveda, Saturnino	Colombia	Rur. Soc.	Jefe, Depto. de Ciencias Sociales, Facultad de Ciencias y Humanidades Universidad de Antioquia Medellin, Colombia
*Sheils, H. Dean	Minnesota	Rur. Soc.	LTC fellow
*Siemens, Alfred	Canada	Ag. Econ.	Asst. Prof., Geography University of British Columbia Vancouver, Canada
*Sievert, Dale	Wisconsin	Ag. Econ.	Agronomist Dean Foods Company Plover, Wisconsin
*Soles, Roger	Wisconsin	Ag. Econ.	MUCIA fellow, in field/Colombia
*Steele, John T.	Missouri	Ag. Econ.	Asst. Prof., Office of Inter- national Programs, Texas A & M University, College Station, Texas (Now with INTA, Argentina on con- tract Texas A & M/Argentina)
*Stewart, Daniel	California	Law	International Legal Center Fellow and Instructor, Instituto de Economía Santiago, Chile
Stoltz, Norma		Soc.	Occupation unknown

<u>Name</u>	<u>From</u>	<u>Major</u>	<u>Present Occupation</u>
Stouse, Peter		Geog.	Dept. of Geog. University of Kansas Lawrence, Kansas
*Strachan, Lloyd	Canada	Ag. Econ.	Working on a colonization study for his dissertation. In Maringá, Paraná, Brazil.
Strang, Arthur	New York	Ag. Econ.	Ford Foundation/Ibero-American Fellow, in field/Bolivia
*Strasma, Jane (Mrs. R. Randall)	Illinois	Pol. Sci.	Program Specialist in charge of <u>Air Mail News from Latin America</u> , Center for International Communications Studies University of Wisconsin, Madison
*Stussi, Pericles	Brazil	Law/ Ind. Psych.	Occupation unknown
Suarez, Nelson	Colombia	Ag. Econ.	Jefe, Depto. de Agricultura CVC Cali, Colombia
*Sund, Michael	N. Dak.	Ag. Econ.	d. 1966 while serving as co- director, CIDA study in Venezuela
*Talbot, Judith (Mrs. de Campos)	Pa.	Pol. Sci.	Last known occupation: Teaching at Universidad del Valle Cali, Colombia
Tan, Alexis	Philippines	Ag. Journ.	LTC fellow
*Taylor, Anne Marie	California	Pol. Sci.	Graduate student/teaching assistant, Spanish, University of Wisconsin, Madison
*Taylor, James	New York	Ag. Econ.	Asst. Prof., Agricultural Economics New Mexico State University Las Cruces, New Mexico
*Tejeda, Henny	Bolivia	Ag. Econ.	In Bolivia; occupation unknown
*Thiesenhusen, William	Wisconsin	Ag. Econ.	Assoc. Prof., Ag. Journ/LTC Univ. of Wisconsin, Madison (1968-69: post-doctoral studies, Harvard University)
Thomson, Joan	Wisconsin	Ag. Journ.	Occupation unknown

<u>Name</u>	<u>From</u>	<u>Major</u>	<u>Present Occupation</u>
*Tinnermeier, Ronald	Iowa	Ag. Econ.	Asst. Prof., Agricultural Economics, N.C. Mission/USAID Lima, Peru
**Toyryla, David	Michigan	Pol. Sci.	LTC fellow
Trigo, Eduardo	Argentina	Ag. Econ.	LTC fellow
*Valcarcel, Antonio	Puerto Rico	Soc.	LTC fellow
*Van Es, Johannes	Holland	Rur. Soc.	Asst. Prof. University of Illinois Urbana, Illinois
Vasquez Salazar, Isabel	Venezuela	Ag. Econ.	LTC fellow
*Vega, Hugo	Peru	Ag. Ext. & Ed./Educ. Pol. Studies	LTC fellow
Vergelin, Cesar	Argentina	Ag. Econ.	LTC fellow
**Villamizar, Fernando	Colombia	Ag. Econ.	LTC fellow
*Villanueva, Benjamin	Honduras	Ag. Econ.	Asst. Prof., Ag. Econ./LTC, University of Wisconsin, Madison
Viudez, Juan	Spain	Econ.	LTC fellow
*Weadock, James	Ohio	Pol. Sci.	Last known occupation: USAID/Costa Rica San José, Costa Rica
**Weber, Bruce	California	Ag. Econ.	LTC fellow
*Whittenbarger, Robert	Illinois	Rur. Soc.	Instructor Virginia Polytechnic Institute Blacksburg, Virginia 24061
**Wing, Harry	Iowa	Ag. Econ.	LTC fellow
Witucki, Lawrence	Wisconsin	Ag. Econ.	Agricultural Economist Foreign Trade and Development Division, USDA/ERS Washington, D.C.

<u>Name</u>	<u>From</u>	<u>Major</u>	<u>Present Occupation</u>
Wolter, Richard	Maryland	Ag. Econ.	Occupation unknown
*Wood, Richard	Maryland	Ag. Econ.	Asst. Prof., Dept. of Social Sciences, University of Portland Portland, Oregon
*Yoesting, Dean	Ohio	Rur. Soc.	Asst. Prof., Sociology Iowa State University Ames, Iowa
*Youde, James G.	Oregon	Ag. Econ.	Asst. Prof., Agricultural Economics Oregon State University Corvallis, Oregon
*Zimmerman, Anne (Mrs.)	Washington	Econ.	Occupation unknown

Total number of fellows through December 1968: 205

Present Occupations of Students Who Have Participated in the Research
Program of the Land Tenure Center, 1962-1968 *

	Latin American & Other Countries	North American	Totals
Academic	19	37	56
Government	20	7	27
International organizations	12	3	15
Private industry	3	2	5
Students working on degrees	49	42	91
Miscellaneous or no information	<u>7</u>	<u>8</u>	<u>15</u>
Totals	110	99	209

*In cases where a former fellow now holds more than one type of position, he has been listed under more than one category.

Present Occupations of Former LTC Fellows According to Major Field *

Major	Academic	Government	International Organizations	Private Industry	Students	Misc. or no inform.	Totals
Ag. & Ext. Ed.		1			2	1	4
Ag. Econ.	28	17	8	3	30	7	93
Ag. Journ.	6	2	5		4	1	18
Anthro.					3		3
Business				1			1
Dairy Sci.					1		1
Econ.	2		1	1	8	2	14
Geog.	1				3		4
Hist.		1			2		3
Law	2				6		8
Pol. Sci.	6	2			8	1	17
Rur. Soc.	10	4	1		18	1	34
Soc.	1				3	1	5
Spanish					2		2
Major unknown					1	1	2
Totals	<u>56</u>	<u>27</u>	<u>15</u>	<u>5</u>	<u>91</u>	<u>15</u>	<u>209</u>

*In cases where a former fellow now holds more than one type of position, he has been listed under more than one category.

Current LTC Fellows

LTC-supported pre-doctoral students on Madison campus	14
LTC-supported doctoral candidates on Madison campus	3
LTC-supported students abroad	2
LTC-affiliated students on Madison campus	42
LTC-affiliated students abroad	18
LTC-affiliated doctoral candidates (off-campus)	1
	<hr/>
TOTAL	80

Current LTC Fellows According to Major Field

Agricultural & Extension Education	1
Agricultural Economics	26
Agricultural Journalism	4
Anthropology	3
Dairy Science	1
Economics	6
Educational Policy Studies	1
Geography	2
History	1
Law	6
Political Science	9
Rural Sociology	14
Sociology	5
Spanish	1
	<hr/>
TOTAL	80

Current LTC Fellows by Country

Argentina	6
Bolivia	2
Brazil	2
Canada	1
Chile	4
Colombia	8
Cuba	2
Egypt	1
Mexico	1
Paraguay	3
Peru	3
Philippines	2
Spain	1
United States	38
Puerto Rico	2
Uruguay	1
Venezuela	3
	<hr/>
TOTAL	80

Appendix II

PUBLICATIONS

from the program of the
Land Tenure Center

Inventory as of January 1969, in the following series:

Annual Program Reports
Land Tenure Center Reprints
Monographs
Land Tenure Center Research Papers
Land Tenure Center Papers
Land Tenure Center Discussion Papers
Land Tenure Center Training and Methods Series
Doctoral Dissertations
Masters Theses and Memorias
Miscellaneous Publications
Newsletters
Glossaries
Accession Lists

Land Tenure Center

310 King Hall
University of Wisconsin
Madison, 53706



LAND TENURE CENTER PUBLICATIONS

Annual Program Reports

"Substantive Report." 44 pp. + appended papers. Annual Report, Land Tenure Center (May 1962-May 1963). Land Tenure Center, University of Wisconsin, Madison, Wisconsin, May 1963.

"Substantive Report." Parts I & II. 105 pp. The Land Tenure Center, A Progress Report, 1964. University of Wisconsin, Madison, Wisconsin. February 1965.

The Land Tenure Center: Its First Three Years. Land Tenure Center, University of Wisconsin, Madison, Wisconsin, May 1965. 43 pp.

The Land Tenure Center: Annual Program Report 1965. Land Tenure Center, University of Wisconsin, Madison, Wisconsin, January 1966. 170 pp.

The Land Tenure Center Annual Report 1966. Land Tenure Center, University of Wisconsin, Madison, Wisconsin, January 1967. 204 pp.

The Land Tenure Center Annual Report 1967. Land Tenure Center, University of Wisconsin, Madison, Wisconsin, January 1968. 103 pp.

The Land Tenure Center Annual Report 1968. Land Tenure Center, University of Wisconsin, Madison, Wisconsin, January 1969.

LAND TENURE CENTER PUBLICATIONS

Land Tenure Center Reprints

- No. 1 Peter Dorner and William Thiesenhusen, "Relevant Research Programs to be Conducted in Developing Countries." Journal of Farm Economics. December 1964. 11 pp. (Out of print. Available on loan through office of Contract Monitor, ARDS/WOH, AID Washington; or Land Tenure Center Library, University of Wisconsin.)
- No. 2 Peter Dorner and Juan Carlos Collarte, "Land Reform in Chile: Proposal for an Institutional Innovation." Inter-American Economic Affairs. 1965. 19 pp.
- No. 3 Dale W Adams, "Land Ownership Patterns in Colombia." Inter-American Economic Affairs. Winter 1965. 9 pp. (Out of print. Available on loan through office of Contract Monitor, ARDS/WOH, AID Washington; or Land Tenure Center Library, University of Wisconsin.)
- No. 3-S Dale W Adams, "Tenencia de la Tierra." Agricultura Tropical. Noviembre 1964. 5 pp. (Out of print. Available on loan through office of Contract Monitor, ARDS/WOH, AID Washington; or Land Tenure Center Library, University of Wisconsin.)
- No. 4 Belden Paulson, "Difficulties and Prospects for Community Development In Northeast Brazil." Inter-American Economic Affairs. Spring 1964. 21 pp. (Out of print. Available on loan through office of Contract Monitor, ARDS/WOH, AID Washington; or Land Tenure Center Library, University of Wisconsin.)
- No. 5 Peter Dorner, "Land Tenure, Income Distribution and Productivity Interactions." Land Economics. August 1964. 8 pp.
- No. 5-S Peter Dorner, "Interacciones entre los sistemas de tenencia de la tierra, la distribución del ingreso y la productividad agrícola." El Trimestre Económico. Oct.-Dic. 11 pp.
- No. 6 George W. Hill, "The Agrarian Reform in Costa Rica." Land Economics. February 1964. 8 pp.
- No. 7 Raymond Penn, "Understanding the Pressures for Land Reform." Congressional Hearings on Inter-American Economic Relationships. May 1962. 4 pp.

(Continued)

LAND TENURE CENTER PUBLICATIONS

Land Tenure Center Reprints (cont'd.)

- No. 8 Frank Osterhoudt, "Land Titles in Northeast Brazil: The Use of Aerial Photography." Land Economics. November 1965. 6 pp.
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(Continued)

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(Continued)

LAND TENURE CENTER PUBLICATIONS

Land Tenure Center Reprints (cont'd.)

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(Continued)

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(Continued)

LAND TENURE CENTER PUBLICATIONS

Land Tenure Center Reprints (cont'd.)

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* Forthcoming reprints.

LAND TENURE CENTER PUBLICATIONS

Monographs

- A. Eugene Havens, Tamesis: Estructura y cambio (Estudio de una comunidad Antioqueña). Joint Study of the Land Tenure Center and Facultad de Sociología de la Universidad Nacional de Colombia, Bogotá: Ediciones Tercer Mundo y Facultad de Sociología, 1966. 184 pp.
- _____, L. Eduardo Montero, and Michel Romieux, Cerete: un área de latifundio. Study jointly sponsored by Land Tenure Center and Facultad de Sociología, Universidad Nacional de Colombia. Informe Técnico No. 3. Bogotá: Facultad de Sociología, 1965. 257 pp.
- _____ and Michel Romieux, Barrancabermeja: conflictos sociales en torno a un centro petrolero. A study jointly sponsored by the Land Tenure Center and Facultad de Sociología de la Universidad Nacional de Colombia. Informe Técnico No. 6. Bogotá: Ediciones Tercer Mundo and Facultad de Sociología, 1966. 186 pp.
- Gustavo Jiménez Cadena, S.J., Sacerdote y cambio social: estudio sociológico en los Andes Colombianos. Study sponsored in part by the Land Tenure Center. Colección: Centro de Investigación y Acción Social (CIAS). Bogotá: Ediciones Tercer Mundo, 1967. 290 pp.
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- William C. Thiesenhusen, Chile's Experiments in Agrarian Reform. Study sponsored by Land Tenure Center. Land Economics Monographs No. 1, Madison: The University of Wisconsin Press, 1966. 206 pp. Also published in Spanish translation, Reforma agraria en Chile: experimento en cuatro fundos de la Iglesia. Universidad de Chile, Instituto de Economía y Planificación. 1968. 140 pp.
- Elsa Usandizaga and A. Eugene Havens, Tres barrios de invasión: estudio de nivel de vida y actitudes en Barranquilla. Study jointly sponsored by the Land Tenure Center and Facultad de Sociología de la Universidad Nacional de Colombia. Bogotá: Ediciones Tercer Mundo y Facultad de Sociología, 1966. 94 pp.

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(Continued)

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(Continued)

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(Continued)

LAND TENURE CENTER PUBLICATIONS

Land Tenure Center Research Papers (cont'd.)

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(Continued)

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(Continued)

LAND TENURE CENTER PUBLICATIONS

Land Tenure Center Papers (cont'd.)

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(Continued)

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(Continued)

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Land Tenure Center Papers (cont'd.)

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- No. 2 Edmundo Flores, Richard W. Patch, Dwight Heath, Casto Ferragut, Thomas Carroll, The Progress of Land Reform in Bolivia. May 1963. 23 pp. (Out of print. Available on loan through office of Contract Monitor, ARDS/WOH, AID Washington; or Land Tenure Center Library, University of Wisconsin.)
- No. 3 Nathan Whetten, The Role of the Ejido in Mexican Land Reform. May 1963. 7 pp. (Out of print. Available on loan through office of Contract Monitor, ARDS/WOH, AID Washington; or Land Tenure Center Library, University of Wisconsin.)
- No. 4 Albert O. Hirschman, Charles W. Anderson, and Andrew H. Whiteford, Land Reform and Social Change in Colombia, with comments by William Glade, Lowry Nelson, and Mario de Barrios. November 1963. 22 pp. (Out of print. Available on loan through office of Contract Monitor, ARDS/WOH, AID Washington; or Land Tenure Center Library, University of Wisconsin.)
- No. 5 Peter Dorner, Issues in Land Reform: The Chilean Case. August 1965. 15 pp.

LAND TENURE CENTER PUBLICATIONS

Land Tenure Center Training and Methods Series

- No. 1 Peter Dorner, The Challenge of Being an Agricultural Economist. November 1964.
- No. 1-P Peter Dorner, O desafio de ser um economista agrícola. October 1964. (Temporarily unavailable.)
- No. 2 Walter H. Ebling, Agricultural Data Collecting and Reporting in Venezuela. November 1964. (Out of print. Available on loan through office of Contract Monitor, ARDS/WOH, AID Washington; or Land Tenure Center Library, University of Wisconsin.)
- No. 3 Joseph R. Thome, Gathering Survey Data for Agrarian Legal Studies in Latin America. July 1965.
- No. 4 LTC Library, Agrarian Reform and Land Tenure: A List of Source Materials. August 1965. (Out of print. Available on loan through office of Contract Monitor, ARDS/WOH, AID Washington; or Land Tenure Center Library, University of Wisconsin.)
- No. 5 LTC Library, Colonization and Settlement: A Partially Annotated Bibliography. August 1965.
- No. 6 A. Eugene Havens, Some Recurrent Issues in Survey Research in Latin America. April 1966. (Not distributed)
- No. 7 LTC Library, Bolivia: Agricultura, Economía y Política--a Bibliography. December 1968.

LAND TENURE CENTER PUBLICATIONS

Doctoral Dissertations

- Luciano Barraza-Allende, "A Three Sectoral Model of Growth for Mexico." Department of Agricultural Economics, University of Wisconsin, 1968. 219 pp.
- Russell Brannon, "The Role of the State in the Agricultural Stagnation of Uruguay." Department of Agricultural Economics, University of Wisconsin, 1967. 335 pp.
- Marion R. Brown, "Diffusion of Technical Agricultural Information in Chile." Department of Agricultural Journalism, University of Wisconsin, 1968. 233 pp.
- Thomas E. Burke, "An Evaluation of Investments in Tin or Alternative Projects on the Future Foreign Exchange Earnings of Bolivia." Department of Economics, University of Wisconsin, 1968. 409 pp.
- Carlos Camacho-Saa, "Minifundia, Productivity, and Land Reform in Cochabamba." Department of Agricultural Economics, University of Wisconsin, 1966. 166 pp.
- Kenneth T. Cann, "Inter-Governmental Revenue Transfers in Brazilian Municipal Finance." Department of Economics, Indiana University, 1967. 221 pp.
- Carlos Castillo, "Growth and Integration in Central America." Department of Agricultural Economics, University of Wisconsin, 1965. 222 pp.
- Lawrence Harlan Davis, "Economics of the Property Tax in Rural Areas of Colombia." Department of Agricultural Economics, University of Wisconsin, 1968. 238 pp.
- Juan E. Diaz-Bordenave, "Sociological and Psychological Factors Related to Information Seeking Among Farmers of the Brazilian Northeast." Department of Communication, Michigan State University, 1965. 288 pp.
- Bernard L. Erven, "Economic Analysis of Agricultural Credit Use and Policy Problems, Rio Grande do Sul, Brazil." Department of Agricultural Economics, University of Wisconsin, 1967.
- Herman Felstehausen, "Economic Knowledge and Comprehension in a Netherlands Farming Community." Department of Agricultural Journalism, University of Wisconsin, 1964. 244 pp.

(Continued)

LAND TENURE CENTER PUBLICATIONS

Doctoral Dissertations (cont'd.)

Luiz Fonseca, "Information Patterns and Practice Adoption Among Brazilian Farmers." Department of Agricultural Journalism, University of Wisconsin, 1966. 184 pp.

Manuel Gollás-Quintero, "History and Economic Theory in the Analysis of the Development of Guatemalan Indian Agriculture." Department of Agricultural Economics, University of Wisconsin, 1969. 260 pp.

James Grunig, "Information, Entrepreneurship, and Economic Development: A Study of the Decision-Making Process of Colombian Latifundistas." School of Journalism (Mass Communications), University of Wisconsin, 1968. 450 pp.

Leobardo Jiménez, "Agricultural Communications and Change in a Tropical Ejido in Vera Cruz, Mexico." Department of Agricultural Journalism, University of Wisconsin, 1967.

Gustavo Jiménez Cadena, "The Role of the Rural Parish Priest as an Agent of Social Change in Central Colombia." Department of Rural Sociology, University of Wisconsin, 1965. 235 pp.

Terry L. McCoy, "Agrarian Reform in Chile, 1962-68: A Study of Politics and the Development Process." Department of Political Science, University of Wisconsin, 1969. 330 pp.

Sergio Maturana, "Paracho: The Economics of Development in a Mexican Smallholder Community." Department of Agricultural Economics, University of Wisconsin, 1968. 196 pp.

Fernando Monge, "Reading Habits of Scientists in a Colombian Institution." Department of Agricultural Journalism, University of Wisconsin, 1968. 213 pp.

Charles Nisbet, "The Informal Credit Market in Rural Chile: Its Nature, Significance and Relationship to the Institutional Credit Market." Department of Economics, University of Oregon, 1967.

José Pastore, "Satisfaction among Migrants to Brasilia, Brazil: A Sociological Interpretation." Department of Rural Sociology, University of Wisconsin, 1968. 262 pp.

(Continued)

LAND TENURE CENTER PUBLICATIONS

Doctoral Dissertations (cont'd.)

- Marcelo Peinado, "Land Reform in Three Communities of Cochabamba, Bolivia." Department of Agricultural Economics, University of Wisconsin, 1969. 271 pp.
- João Bosco Guedes Pinto, "Social Factors Associated with Adjustment of Rural Migrants in Central Brazil." Department of Rural Sociology, University of Wisconsin, 1967. 239 pp.
- John Duncan Powell, "The Politics of Agrarian Reform in Venezuela: History, System and Process." Department of Political Science, University of Wisconsin, 1966. 392 pp.
- Norman Rask, "Farm Size and Income: An Economic Study of Small Farm Agriculture in Southern Brazil." Department of Agricultural Economics, University of Wisconsin, 1964. 272 pp.
- Fernando Rocha, "Determinants of Occupational Achievement, Income, and Level of Living in Brasilia, Brazil." Department of Rural Sociology, University of Wisconsin, 1968. 157 pp.
- Richard L. Ruth, "The Cotton and Sugar Industries of Mexico and Peru: A Comparative Study." Department of Economics, University of Wisconsin, 1964. 249 pp.
- Carlos Sáenz, "Population Growth, Economic Progress and Opportunities on the Land: The Case of Costa Rica." Department of Agricultural Economics, University of Wisconsin, 1969. 160 pp.
- Lester Schmid, "The Role of Migratory Labor in the Economic Development of Guatemala." Department of Agricultural Economics, University of Wisconsin, 1967. 444 pp.
- John T. Steele, "Land Tenure Processes in a Community in Minas Gerais, Brazil." Department of Agricultural Economics, University of Wisconsin, 1968. 199 pp.
- Daniel L. Stewart, "Aspects of Chilean Water Law in Action: A Case Study." Law-Economics, University of Wisconsin, 1967. 468 pp.

(Continued)

LAND TENURE CENTER PUBLICATIONS

Doctoral Dissertations (cont'd.)

- Michael Dean Sund, "Land Tenure and Economic Performance of Agricultural Establishments in Northeast Brazil." Department of Agricultural Economics, University of Wisconsin, 1965. 231 pp.
- James Taylor, "Agricultural Settlement and Development in Eastern Nicaragua." Department of Agricultural Economics, University of Wisconsin, 1968. 195 pp.
- William C. Thiesenhusen, "Experimental Programs of Land Reform in Chile." Department of Agricultural Economics, University of Wisconsin, 1965. 464 pp.
- Ronald L. Tinnermeier, "New Land Settlement in the Eastern Lowlands of Colombia." Department of Agricultural Economics, University of Wisconsin, 1964. 291 pp.
- Johannes van Es, "Response Stability in Survey Research Among Sharecroppers in Central Brazil." Department of Rural Sociology, University of Wisconsin, 1968.
- Benjamín Villanueva, "Institutional Innovations and Economic Development, Honduras: A Case Study." Department of Agricultural Economics, University of Wisconsin, 1968. 287 pp.

LAND TENURE CENTER PUBLICATIONS

Master's Theses and Memorias*

- Alvaro Camacho, "A Portrait of the Colombia Slum Voter." Department of Rural Sociology, University of Wisconsin, 1968. 69 pp.
- Nora Camacho, "Recent and Old Urban Migrants: A Comparison of Levels of Living." Department of Sociology, University of Indiana, 1968. 42 pp.
- Elsa M. Chaney, "Christian Democracy and Agrarian Reform in Chile and Venezuela." Department of Political Science University of Wisconsin, 1965. 151 pp.
- Norma Stoltz Chinchilla, "Values and Stratification in Brasilia." Department of Sociology, University of Wisconsin, 1968. 42 pp.
- Juan Carlos Collarte Rivacoba, "Análisis de una alternativa de los sistemas de tenencia de tierras en Chile." Facultad de Agronomía, University of Chile, 1964. 165 pp.
- Jesus Humberto Colmenares, "Population, Employment, and Economic Change in Colombia." Department of Agricultural Economics, University of Wisconsin, 1966, 76 pp.
- Jorge Dandler-Hanhart, "Local Group, Community and Nation: A Study of Changing Structure in Ucureña, Bolivia (1935-1952)." Department of Anthropology, University of Wisconsin, 1967. 116 pp.
- Mario J. Del Fa, "Some Possible Uses of the Federal Statute of Condemnation in Relation with the Redistribution of Privately Owned Land: The Argentine Case." The Law School, University of Wisconsin, 1968. (M.L.I.) 200 pp.
- Eduardo de la Espriella, "Economic Analysis of the Nicoyan Peninsula with Emphasis on Small Landholdings." Department of Agricultural Economics, University of Wisconsin, 1968.

* Does not include all memorias done in Latin America.

(Continued)

LAND TENURE CENTER PUBLICATIONS

Master's Theses and Memorias (cont'd.)

José María Franco G., "Cadastral Surveying, Title Registration and Land Taxation as Inter-Dependent Tools of Development: Their Application to Venezuela." M.S. in Legal Institutions, University of Wisconsin, 1966. 72 pp.

Rogelio Imable Durán, "Cambio en los ingresos de campesinos chilenos participantes en la reforma agraria: casos de asentamientos y parcelación." Facultad de Economía, Universidad de Chile, 1967.

Orson Eugene Jensen, "Communication and Adaption of Farm Practices in Central Brazil." Department of Rural Sociology, University of Wisconsin, 1968.

Juan Lyon Lyon, "La parcelación particular: una alternativa dentro del proceso de reforma agraria." Facultad de Agronomía, Universidad Católica, Valparaíso, Chile, 1967. 86 pp.

Eugenio Maffei, "Innovativeness as Related to Other Factors in a Colombia Community: Contadero, Nariño." Department of Rural Sociology, University of Wisconsin, 1966. 38 pp.

Jose Martínez, "Evaluation of Agricultural Development in Venezuela." Paper in lieu of Master's thesis.) Department of Agricultural Economics, University of Wisconsin, 1968. 64 pp.

Manuel Martínez, "Some Aspects of the Market Structure, Behavior, and Performance for Potatoes Grown in South-eastern Buenos Aires." Department of Agricultural Economics, University of Wisconsin, 1968. 83 pp.

Bernardo Mora C., and Jesús M. Sierra M., "Organización, Actividades y Costo de Tres Servicios de Extensión Agrícola en Antioquia." Unpublished undergraduate thesis, College of Agriculture, Medellín, Colombia, 1968.

Hector Morales Jara, "Productividad presente y potencial en 96 predios de la Provincia de O'Higgins y su relación con el tamaño de las propiedades." Facultad de Agronomía, Universidad de Chile, 1964. 113 pp.

(Continued)

LAND TENURE CENTER PUBLICATIONS

Master's Theses and Memorias (cont'd.)

Olga Orjuela Cháves, "The Role of Agriculture in the Economic Development of Colombia." Department of Agricultural Economics, University of Wisconsin, 1964. 83 pp.

Juan Valenzuela Palma, "Asentamiento residencial campesino y diseño de campos en los grandes fundos de Chile Central." Facultad de Geografía, Universidad de Chile, 1968. 116 pp.

John D. Powell, "A Brief Political History of Agrarian Reform in Venezuela." Department of Political Science, University of Wisconsin, 1964. 119 pp.

Gustavo Martín Quesada, "Contacts with Professional Services as Related with Social Characteristics in a Rural Area of the State of Rio de Janeiro, Brazil." Department of Rural Sociology, University of Wisconsin, 1965. 67 pp.

Steven Reinheimer, "A Socio-Economic Study of Two Ejidos in Hidalgo State, Mexico." Department of Agricultural Economics, University of Wisconsin, 1967. 106 pp.

Humberto Rojas, "Kinship Influences on Adaptation of Migrant Families in a Colombian Barrio." Department of Rural Sociology, University of Wisconsin, 1968.

Lester Schmid, "A Program of Agricultural Education for the Newly Developing Areas of Bolivia." Department of Agricultural Economics, University of Wisconsin, 1964. 178 pp.

Earl W. Schmidt, "The Role of Local Economic, Political, and Social Organizations within the Theory of Planned Change and for the Development of the Newly Settled Areas of Bolivia." Departments of Political Science and Agricultural Economics, University of Wisconsin, 1964. 93 pp.

Saturnino Sepúlveda Nino, "Anomie Among Rural-Urban Migrants in Two Selected Communities in Colombia S.A." Department of Rural Sociology, University of Wisconsin, 1965.

Howard Dean Shells, "The Cross-Cultural Measurement of Value Orientation." Department of Rural Sociology, University of Wisconsin, 1964. 121 pp.

(Continued)

LAND TENURE CENTER PUBLICATIONS

Master's Theses and Memorias (cont'd.)

Hugo Vega, "The Roles of Agricultural Agency Personnel at the County Level in the State of Rio Grande do Sul, Brazil." University of Wisconsin, 1968.

Robert L. Whittenbarger, "Attitudes Toward Social Change in a Rural Colombian Community: An Attempt at Measurement." Department of Rural Sociology, University of Wisconsin, 1966. 75 pp.

Richard H. Wood, Jr., "The Base Economy of Tolu." Department of Agricultural Economics, University of Wisconsin, 1966. 132 pp.

Francisco Jairo Yepes E., and Diego Jaramillo S., "Justificación económica de la construcción de tres carreteras veredales en Antioquia." Unpublished undergraduate thesis, College of Agriculture, Medellín, Colombia, 1968.

LAND TENURE CENTER PUBLICATIONS

Miscellaneous Publications*

- Dale W. Adams, "A View of Absenteeism and Concentration in Colombian Landownership." CIRA Mimeo No. 31, November 1965.
- _____, "A View of Minifundia Problems in Colombia." CIRA Mimeo No. 32, November 1965.
- _____, "Colombia's Land Tenure System: Antecedents and Problems." Land Economics. Vol. XLII, No. 1, February 1966.
- _____, "Es la Concentración de Propiedad de la Tierra un Problema en Colombia?" Agricultura Tropical. Vol. XX, No. 11, November 1964, pp. 599-604.
- _____, "Modalidades de la Propiedad de la Tierra en Colombia." Revista de Cultura Moderna Universidad Libre (Colombia). Vol. IV, No. XIX, June-July 1965. pp. 29-35.
- _____, "Rural Migration and Agricultural Development in Colombia." Forthcoming in Economic Development and Cultural Change.
- _____, et al., "Supervised Credit in Colombia's Agrarian Reform: An Evaluative Study." (Bogotá: IICA-CIRA Mimeo No. 40, 1966.) (Also in Spanish.)
- _____, and Antonio Herrón, "El Desarrollo de los Organismos de Fomento Agropecuario en Colombia." Agricultura Tropical, Vol. XXII, No. 1, January 1966.
- _____, and _____, "El Uso de Esfuerzos Cooperativos en Adquisición de Tierras: Un Ejemplo Colombiano." Agricultura Tropical, August 1967, pp. 512-515.
- _____, and _____, "La Industria Algodonera Colombiana." Agricultura Tropical, July 1965, pp. 348-357.

* (Does not include all LTC-CIRA publications available from CIRA, Apartado Aéreo No. 14592, Bogotá, Colombia.)

(Continued)

LAND TENURE CENTER PUBLICATIONS

Miscellaneous Publications (cont'd.)

- Dale W. Adams, and Antonio Herrón, "Los Organismos de Fomento Agropecuarios en Colombia." CIRA Mimeografiado No. 2. September 1965. Available at IICA-CIRA, Apartado Aéreo No. 14592, Bogotá, Colombia.
- _____, and _____, "Producción y Consumo de Aceites Vegetales en Colombia." CIRA Mimeografiado No. 1. September 1965. Available at IICA-CIRA, Apartado Aéreo No. 14592, Bogotá, Colombia.
- _____, and S. Mancini, "Posibilidades de Ajuste en la Producción de Trigo y Los Productos Competitivos de Clima Frío." Revista Facultad Nacional de Agronomía, Universidad Nacional de Colombia. Vol. XXIV, No. 61, 1964. pp. 1-26.
- _____, and L. E. Montero, Algunas Consideraciones Sobre Reforma Agraria en Regiones de Minifundio: Un Ejemplo Colombiano (Bogotá, IICA-CIRA, 1965). 106 pp.
- _____, and Alvaro Ramírez, "La Parcelación de Fincas en las Proximidades de Aldeas: Una Medida Complementaria a Programas de Distribución de Tierras." CIRA Mimeografiado No. 7. October 1965. Available at IICA-CIRA, Apartado Aéreo No. 14592, Bogotá, Colombia.
- _____, and _____, "Una Técnica Para Introducir Cambios en Una Comunidad Rural." Agricultura Tropical. October 1966. pp. 532-537.
- _____, and A. Tobon R., "El Sector Agropecuario en el Desarrollo de la Economía Colombiana." Economía Colombiana. March 1966. pp. 9-32.
- Marion R. Brown, "Sources of Information for New Landowners." In Proceedings of the First Inter-American Symposium on the Role of Communications in Agricultural Development. (October 1964.) Available at Rockefeller Foundation, Londres 40, Mexico, D.F.
- Ronald J. Clark, "Land Reform and Peasant Market Participation on the North Highlands of Bolivia." (December 1967.) Order from CIDA, 1725 "I" Street, N.W., Washington, D.C. 20006.

(Continued)

LAND TENURE CENTER PUBLICATIONS

Miscellaneous Publications (cont'd.)

- L. Harlan Davis, "Economía del Impuesto Predial en Areas Rurales de Colombia." Mimeografiado No. 105, Centro Interamericano de Desarrollo Rural y Reforma Agraria, Bogotá, Colombia. July 1968.
- Herman Felstehausen, "El Equilibrio en el Contenido de Prensa en Función de la Importancia de Problemas Agrícolas." Memoria del Primer Seminario de Periodismo Agrícola, Ministerio de Agricultura y Centro Interamericano de Desarrollo Rural y Reforma Agraria, Bogotá, Colombia. 1968.
- Herman Felstehausen, "Local Government and Rural Service Barriers to Economic Development in Colombia." LTC-IICA-CIRA, Mimeografiado No. 68 LTC/Col.-10. October 1968.
- George W. Hill, Manuel Gollás Q., and Gregorio Alfaro, "Un Área Rural en Desarrollo--sus Problemas Económicos y Sociales--Costa Rica." Instituto Universitario Centro-americano de Investigaciones Sociales y Económicas. (November 1964.) Available at Instituto Universitario, San José, Costa Rica.
- Delbert T. Myren, "Integración del Mercado Rural a la Economía Nacional en Mexico." Sobretiro de Comercio Exterior, Vol. XVII, No. 9, Banco Nacional de Comercio Exterior, S.A., Mexico, D.F. September 1967. (Available from the Land Tenure Center.) 5 pp.
- Richard W. Patch, Reports as part of American Universities Field Staff "West Coast South America Series" from 1964 through April 1967. For copies write to American Universities Field Staff, Inc., 366 Madison Ave., New York, New York, 10017.
- Rodrigo Peña A., and Antonio Giles, "El Crédito Supervisado en la Reforma Agraria Colombiana." Available at IICA-CIRA, Apartado Aéreo No. 14592, Bogotá, Colombia.
- Joseph R. Thome, "Title Problems in Rural Areas of Colombia: A Colonization Example." CIRA Mimeografiado No. 3 (October 1965). Available at IICA-CIRA, Apartado Aéreo No. 14592, Bogotá, Colombia.
- Garland Wood, "Gobierno Local--la Cuerda al Cuello o piedra Clave." Temas Administrativos, Vol. 4, No. 8 (April 1968). LTC-CIRA publication available at CIRA, Apartado Aéreo No. 14592, Bogotá, Colombia.

LAND TENURE CENTER PUBLICATIONS

Newsletters

Newsletters Nos. 1-25 are out of print. They are available on loan through the office of the Contract Monitor, ARDS/WOH, AID Washington; or the Land Tenure Center Library, University of Wisconsin.

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- No. 11 September 1963. 50 pp.
- No. 12 October-November 1963. 49 pp.
- No. 13 December 1963. 35 pp.
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- No. 19 November 1964-March 1965. 28 pp.
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- No. 21 August-October 1965. 31 pp.

(Continued)

LAND TENURE CENTER PUBLICATIONS

Newsletters (cont'd.)

No. 22 November 1965-February 1966. 38 pp.

No. 23 March-July 1966. 49 pp.

No. 24 August-October 1966. 50 pp.

No. 25 November 1966-March 1967. 27 pp.

No. 26 April 1967-February 1968. 22 pp.

No. 27 March-August 1968. 19 pp.

LAND TENURE CENTER PUBLICATIONS

Glossaries

Richard J. DeLuca, "Glossary of Terms Used in Land Tenure and Related Labor Situations in Ecuador." June 1964. Mimeographed. 15 pp. (Out of print. Available on loan through office of Contract Monitor, ARDS/WOH, AID Washington; or Land Tenure Center Library, University of Wisconsin.)

Richard J. DeLuca, "Glosario de términos usados en Ecuador en distintos tipos de tenencia de la tierra y en situaciones de trabajo relacionadas con ellos." Traducido por Victoria Junco Meyer. Octubre 1964. Mimeografiado. 15 pp. (Out of print. Available on loan through office of Contract Monitor, ARDS/WOH, AID Washington; or Land Tenure Center Library, University of Wisconsin.)

Richard J. DeLuca, "Glossary of Terms Used in Land Tenure and Related Labor Situations in Peru." June 1964. Mimeographed. 34 pp. (Out of print. Available on loan through office of Contract Monitor, ARDS/WOH, AID Washington; or Land Tenure Center Library, University of Wisconsin.)

Richard J. DeLuca, "Glosario de términos usados en Perú en distintos tipos de tenencia de la tierra y en situaciones de trabajo relacionadas con ellos." Traducido por Victoria Junco Meyer. Junio 1964. Mimeografiado. 34 pp. (Out of print. Available on loan through office of Contract Monitor, ARDS/WOH, AID Washington; or Land Tenure Center Library, University of Wisconsin.)

Richard W. Patch and Jorge Dandler-Hanhart, "Glossary of Terms Related to Land Tenure and Labor under Special Tenure Situations in Bolivia." January 1964. Mimeographed. 30 pp. (Out of print. Available on loan through office of Contract Monitor, ARDS/WOH, AID Washington; or Land Tenure Center Library, University of Wisconsin.)

Richard W. Patch, Jorge Dandler-Hanhart, and Victoria Junco Meyer, "Glosario de términos relacionados con la tenencia y el trabajo bajo situaciones especiales de tenencia en Bolivia." Enero 1964. Mimeografiado. 32 pp. (Out of print. Available on loan through office of Contract Monitor, ARDS/WOH, AID Washington; or Land Tenure Center Library, University of Wisconsin.)

LAND TENURE CENTER PUBLICATIONS

Accession Lists (Land Tenure Center Library)

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- Accession List. No date. (Covers May 1-July 1, 1963) 22 pp.
- Accession List. August 15, 1963. 10 pp.
- No. 4 October 1, 1963. 13 pp.
- No. 5 December 1, 1963. 13 pp.
- No. 6 February 1, 1964. 10 pp.
- No. 7 April 15, 1964. 19 pp.
- No. 8 June 15, 1964. 15 pp.
- No. 9 September 1, 1964. 19 pp.
- No. 10 February 1, 1965. 18 pp.
- No. 11 July 1, 1965. 20 pp.
- No. 12 October 15, 1965. 26 pp.
- No. 13 January 15, 1966. 25 pp.
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- No. 17 July 1, 1967. 69 pp.
- No. 18 October 2, 1967. 29 pp.

(Continued)

LAND TENURE CENTER PUBLICATIONS

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APPENDIX III

DRAFT

RELATION OF SIZE OF FARM TO PRODUCTIVITY

by Lester Schmid

Preliminary version
Not for quotation
(1/6/69)

Land Tenure Center
University of Wisconsin

DRAFT

Land Tenure Center
Madison

Preliminary version 1/6/69
Not for quotation

RELATION OF SIZE OF FARM TO PRODUCTIVITY

by Lester Schmid

Introduction

The argument is often made, especially in opposition to land reform, that large farms are more efficient than small farms. This argument is generally based upon the returns to labor and management, rather than upon returns to land and capital. For economies where labor is scarce, it is certainly true that returns to labor and management is the relevant factor by which to judge the efficiency of a farm operation. However, in most countries in which land reform is an issue, labor is the most abundant factor of production. Greater labor efficiency on farms, unless accompanied by either higher production per unit of land or employment of the displaced workers in other sectors of the economy, would not increase total production. Therefore, per capita income, the commonly accepted measure of economic development, would not increase.

In countries where farm labor is abundant, returns to labor is not the most relevant efficient measure for policy-making. The measure of relative efficiency must be in terms of returns to non-labor resources. As Long suggests, the gross value of productivity per unit of land, above variable costs, is the most meaningful for policy decisions.¹

In order to determine the relationship between size of farm and efficiency in terms of non-labor resources, information from various studies is presented in this paper. In most cases neither variable nor fixed capital costs are subtracted from the gross value of product per hectare. But, as Long suggests, inclusion in the gross value product of variable capital costs such as seed, fertilizer, and insecticides would not appear to affect greatly the

¹Erven J. Long, "The Economic Basis of Land Reform in Underdeveloped Economies," Land Economics (May 1961).

conclusions in most cases. However, failure to deduct from gross production value certain capital costs, such as machinery, would appear to prejudice the evidence in favor of the large farms, if the large farms are mechanized and the small farms are not, as in most countries where land reform is an issue.

Several approaches to measuring the relationship between size of farm and production per unit of land are found in the literature.

In censuses or other similar data, a common approach is to compare the total amount of land per farm and the value of output per unit of total land. This approach implicitly assumes that the farms in each size group have similar proportions of cultivatable, pasture, and waste land, and that land quality within each category is about the same for all size groupings. To the extent that these assumptions are correct, the differences in value of output per unit of land among the various size groups must be due to one or more of the following factors: 1) the proportion of land being utilized; 2) land use intensity (that is, the kind and proportions of crop and livestock enterprises); 3) the level of crop yields per unit of land; 4) the number of plantings per year; 5) the efficiency of the livestock operations; or 6) marketing opportunities and prices received for farm products.²

Perhaps the most important of these six factors is the proportion of land which is being utilized. If large farms have much land which is not being utilized, higher total production would result if the land were allotted to rural people who are underemployed either on their own land or on the land of others. The same argument holds for the second factor, the intensity of land use.

The yield per unit of land for particular crops may be higher on larger farms, since their managers generally have better access to credit and information, permitting earlier and more rapid adoption of yield increasing technology. Despite lower yields for particular crops, the value of output per unit of land may still be higher on the smaller farms, because small farms tend to produce higher value

²It is possible that some extremely small farmers near cities retail their products. On the other hand, larger farmers can often obtain better prices by selling in volume, by storage to take advantage of seasonal price peaks, by processing the product, or by preferential quota procurement.

crops and to plant two or three crops on the same land each year.

The last two factors (livestock efficiency and market opportunities) would generally operate in favor of the larger farms. Large farms usually have access to veterinary services, thus minimizing livestock deaths and low livestock productivity due to chronic illness. Likewise the larger farmers are in a position to take better advantage of marketing possibilities.

A second approach sometimes used is comparison of the value of output per unit of cultivated land and farm size, with size still measured by total land per farm. This is a more sophisticated approach than the first, but since the measure of farm size fails to consider the proportion of land actually utilized, the conclusions are not always clear. For example, the farm with a large land base may utilize only the best quality land for crops whereas the small farm must utilize every bit of land, irrespective of quality. If this is the case, it would tend to prejudice productivity per unit in favor of the large farm. Furthermore, only crop production on the cultivated area should be included; animal production, which may in large part be produced on non-cultivated pasture land, should be excluded. This approach does give some indication of differences in land use intensity.

In some instances, crop yields per hectare of individual crops are compared for different sizes of farms. This approach has the advantage of being direct, but does not allow for the differences in product mix among farms of different sizes. In one instance cited below, however, the multiple cropping ratio is given. Since the smaller farms tend to plant more than one crop per year on the same land, they may produce more each year per cultivated hectare, even with somewhat lower yields.

Evidence of Static Relationship Between Size of Farm and Productivity

Evidence from several countries is here presented concerning the size of holdings or the size of the cultivated area, and production per land unit. For clarification in presentation the information is for the most part given by country.

India

Data from three sources indicate that in India production per land unit on small farms is about equal to or higher than production on larger farms. As shown in Table 1, in one study based on data from more than 1,000 farms from seven states, there was a decided inverse relationship between the size of farm and value of output per acre.

Table 1

Average Gross Output per Acre by Size of Farm: India
(In Rupees per Acre)

Size of Farm (Acres)	Gross Output per Acre (Rupees)
0 - 4.9	240
5 - 9.9	213
10 - 19.9	171
20 and over	103

Source: Erven J. Long, "The Economic Basis of Land Reform in Underdeveloped Economies," Land Economics (May 1961), p. 117.

Since part of the relationship was caused by the fact that areas of lower productivity per acre tended to be characterized by larger land units, the farms were classified into four size groups for each state, resulting in the average relationship shown in Table 2.

Table 2

Relationship Between Relative Size of Farm and Rupee
Value of Gross Output Per Acre from Sample
Farms in Eight Areas^a: India

	Average Eight Areas
Smallest Group	219
Second Smallest Group	188
Second Largest Group	170
Largest Group	159

Source: Long, op. cit., p. 118.

^aTwo areas were within one state.

Additional evidence was obtained from a study of 225 farms in three villages in Bihar State, India. The farms within each of these villages are quite homogeneous in soil characteristics and water resources. As shown in Table 3, there is an inverse relationship between size of farm and production per hectare.

Table 3

Gross Output per Acre as Related to Size of Farm
for 225 Farms in Three Villages,
Bihar State: 1955-56

Size of Farm	Village A (92 farms)	Village B (100 farms)	Village C (33 farms)	Average
0 - 4.9	206	384	315	302
5 - 9.9	193	337	306	279
10 - 14.9	178	329	308	272
15 and above	173	331	278	261

Source: Long, *op. cit.*, p. 119.

Evidence from another study from India also shows an inverse relationship between size of farm and value of output per acre, as shown in Table 4.

Table 4

Output by Size of Farm, Punjab, India

Size of Farm	Value of Output per Acre
0 - 5	200
5 - 10	186
10 - 20	173
20 - 50	154
50 and above	143
All farms	163

Source: Don Kanel, "Size of Farm and Economic Development," *Indian Journal of Agricultural Economics*, Vol. 22, No. 2, April-June 1967, p. 35 (also LTC Reprint No. 31).

Data from India indicate that in 1953-54 value of output per acre was generally higher on small family farms.

than on large cooperative farms (Table 5).³ In some instances the value of output per acre was higher for the cooperative farms. However, Oweis states that this is because the cooperative farms were able to obtain capital for construction of superior irrigation facilities, as well as government credit and subsidies for purchasing tractors and constructing tube wells. In spite of these advantages, Oweis says that only 3 of the 10 cooperative farms continued for more than a few years, as the landowners decided that production and income would be higher if they farmed the land themselves or rented it to individual small farmers.

Table 5

Value of Output per Acre on Cooperative and Family Farms in 10 Areas, Punjab, India, 1953-54

Area	Value of Output	
	Small Family Farms Rupees	Large Cooperative Farms Rupees
1	270	190
2	185	249
3	158	137
4	160	145
5	188	167
6	155	158
7	258	219
8	108	152
9	154	103
10	162	187

Source: Harbans Singh Mann, Cooperative Farming and Family Farming in the Punjab, A Comparative Study, Ph.D. Thesis, Ohio State University, 1962. (From Jiryis Oweis in Changes in Agriculture in 26 Developing Nations, 1948-1963, Foreign Agricultural Economic Report No. 27, USDA-ERS, p. 42).

³The sizes of the farms in the two groups were not mentioned in the report.

Iran

Data for Iran (Table 6) indicate that yields of particular crops were generally higher on small than on large farms, although the data show that crop yields on the largest farms approach those on the smallest farms. Oweis suggests the larger yields on the small farms for irrigated wheat, barley, and cotton are due to high labor inputs for irrigation.

Table 6

Production per Hectare of Selected Crops,
by Size of Farm, Iran

Size of Farm ^a	Production in Kilograms				
	Wheat and Barley		Cotton		Rice
	Not Irrigated	Irrigated	Not Irrigated	Irrigated	
Under .5	782	2,215	904	1,792	2,609
.5 - 1	607	1,720	847	1,360	2,108
1 - 2	533	1,399	855	1,014	2,309
2 - 3	442	1,259	791	1,113	2,274
3 - 4	500	1,251	769	1,222	2,218
4 - 5	517	1,202	799	902	2,092
5 - 6	459	1,150	731	1,040	2,033
5 - 10	438	1,123	944	1,291	1,965
20 - 50	432	1,134	976	1,098	1,564
50 - 100	452	926	1,026	694	1,453
100 - 500	945	997	2,063	1,846	2,580
500 and over	684	1,217	1,485	647	2,432
All sizes	489	1,176	957	1,132	2,157

Source: 1960 Census, Iran. Taken from J. Oweis, *op. cit.*, p. 42.

^aThere is a mistake in the size classification as given in the cited article.

Japan

Crop yields on larger farms were somewhat higher than on smaller farms for several crops in Japan, as shown in Table 7. However, as the small farms had a higher cropping ratio and spent slightly less for fertilizer, the total receipts minus fertilizer costs were nearly equal for each farm size, with 0.5-1.0 and the 1.0-1.5 cho sizes showing a slight advantage.

Table 7
Crop Yields, Total Receipts per Unit of Cultivated Area, and Multiple Cropping Ratio, Japan

	Size of Farm (in chos) ^a					
	Less than 0.3	.3-.5	.5-1.0	1.0-1.5	1.5-2	2.0 & over
	Crop yields in kilograms per cho					
Paddy field rice	427	422	437	453	456	483
Upland rice	220	182	195	208	224	224
Barley	319	300	306	332	327	340
Wheat	256	254	263	273	272	268
Soybeans	121	126	125	128	128	132
Sweet potatoes	1,455	1,512	1,717	1,829	2,181	2,156
Potatoes	1,193	1,088	1,171	1,252	1,315	1,374
Total receipts minus fert. costs (1,000 yen)	36.1	35.7	37.7	37.8	35.8	33.7
Multiple cropping ratio ^b	1.52	1.49	1.47	1.44	1.39	1.27

Source: Farm Household Survey, 1960, Japan, J. Oweis, *op. cit.*

^a One cho is slightly more than one hectare.

^b Ratio of cultivated area to planted area.

Another study of Japanese farms showed almost constant returns to scale as shown in Table 8. This is especially true for rice yields. Value of wheat production for the large farms was slightly higher for the best soils and slightly lower for the poorest soils, when compared to the other two groups.

Table 8

Yields of Rice and Gross Value of Wheat per Are by Size of Farm
in Each Land Class, Chepugo Plain, Japan, 1964

Land ^d Class	Farm Sizes					
	Small (50-89 ares) ^a		Medium (90-129 ares)		Large (130-180 ares)	
	Yield/are ^b	100 yen/are ^c	Yield/are	100 yen/are	Yield/are	100 yen/are
I	0.853	9.3	0.860	7.7	0.866	7.6
II	0.941	8.4	0.943	8.4	0.950	8.4
III	0.990	9.7	0.990	9.8	0.990	9.9
IV	1.000	8.3	0.990	8.7	0.990	10.4

Source: Shigeyoshi Ueno, "A Study of Economic Land Classification in the Chepugo Plain Area, Fukuoka Prefecture, Japan, Department of Agricultural Economics, Kyushu University, Fukuoka, Japan," English Bulletin No. 4 (August 1968).

^aOne are: 0.01 hectare or 0.025 acres.

^bYields are in bales of brown rice weighing 60 kg.

^cValue of production is for wheat.

^dLand quality increases moving from Class I to Class IV.

Latin America

Evidence from CIDA studies shows a generally inverse relationship between farm size and productivity. Exceptions are in Ecuador where the sub-family farms appeared to be producing less per hectare of cultivated land than the other farms, and in Guatemala where the multi-family medium size farm is shown to be producing more per hectare of cultivated land than the other groups (Table 9).

Table 9

Relationships Between Value of Agricultural Production, Agricultural Land
and Cultivated Land by Farm Size Classes in Selected Countries

Countries	Relative Value of Production as Percent of Sub-Family Farm							
	Sub-Family		Family		Multi-family, medium		Multi-family, large	
	Per Ha. of Agri- cultural Land	Per Ha. of Cultivated Land	Per Ha. of Agri- cultural Land	Per Ha. of Cultivated Land	Per Ha. of Agri- cultural Land	Per Ha. of Cultivated Land	Per Ha. of Agri- cultural Land	Per Ha. of Cultivated Land
Argentina (1960)	100	100	30	51	51	62	12	49
Brazil (1950)	100	100	59	80	24	53	11	42
Colombia (1960)	100	100	47	90	19	84	7	80
Chile (1955)	100	100	14	47	12	39	5	30
Ecuador (1954)	100	100	130	179	87	153	35	126
Guatemala (1950)	100	100	56	80	54	122	25	83

Source: Solon Barraclough and Arthur Domike, "Agrarian Structure in Seven Latin American Countries," Land Tenure Center Reprint No. 25 (Madison, Wisconsin: The University of Wisconsin, 1966), p. 402.

Brazil

Data from southern Brazil (Table 10) indicate little difference in total production per cultivated hectare on farms varying from less than 5 hectares to 100 hectares. Since the proportion of land cultivated was indicated to be much higher on the smallest farms, the production per hectare of total land in the farms would no doubt be much higher for the smaller than for the larger farms.

Table 10

Returns per Cultivated Hectare
(121 Farms, Santa Cruz do Sul, 1961)

Size of Farm	Value of Total Production/ha. (in CR \$1,000.00)
0 - 4.9 ha.	26
5 - 9.8	25
10 - 14.9	18
15 - 24.9	27
25 - 49.9	24
50 - 100	27
Município average	24

Source: Norman Rask, "Farm Size and Income: An Economic Study of Small Farm Agriculture in Southern Brazil," Land Tenure Center Research Paper No. 16 (Madison, Wisconsin: The University of Wisconsin, April, 1964), p. 11.

Other evidence from southern Brazil (Table 11) indicates that production per hectare was lowest on the largest farms and highest on the smallest farms. Net sales per productive hectare were also largest on the smallest farms. Production per animal unit was slightly higher for the small to medium size farms and considerably lower for the very large farms. Net value per animal unit shows a steady decrease from the small to the largest farms.

Table 11

Value of Production per Hectare and per Animal Unit and
Net Value per Animal Unit by Size of Farm, 311 Farms
in Old Santa Rosa, R.G.S., Brazil, 1963
(Value in CR \$1,000)

Size of Farm	Production per Productive Hectare ^a	Net Sales per Productive Hectare	Production Per Animal Unit	Net Production Per Animal Unit ^b
0 - 10 ha.	34.6	17.0	21.2	3.1
10.1 - 20 ha.	30.1	16.3	22.7	2.9
20.1 - 40 ha.	23.5	14.0	22.9	1.4
40.1 - 100 ha.	18.5	12.7	21.3	- 1.2
Over 100	19.2	14.3	15.9	- 3.3
All sizes	23.4	14.2	22.4	1.8

Source: Roger G. Johnson and Rueben C. Buse, "A Study of Farm Size and Economic Performance in Old Santa Rosa, Rio Grande do Sul," Land Tenure Center Research Paper No. 27 (Madison, Wisconsin: The University of Wisconsin, August, 1967), pp. 40-61.

^aIncludes all pasture and cultivable land.

^bNet of both purchased and homegrown feed.

Data from northeastern Brazil indicate little differences in yield among the size categories of farms for certain specific crops, as shown in Table 12. Average yields of beans appeared to be highest on the sub-family farms in the two areas in which this was a major crop. For manioc average yields were highest on the family farms in one region and on the multi-family medium farms in another region. For sugar cane, average yields were highest on the large multi-family farms. Average corn yields were highest on the medium multi-family farms, while coffee yields were highest on the family farms. The variations in average yield among the size groups were not very large and did not appear to follow a definite pattern. On the other hand, in all three regions the intensity of pasture use was highest on the smaller farms.

Table 12

Yields of Various Crops in Kilograms per Hectare
for Three Regions in Brazil, 1960

Region and Farm Size ^a	Beans	Manioc	Corn	Coffee	Sugar Cane ^b	Pasture Utilization ^c
Quixadá						
I	523	--	--	--	--	1.34
II	237	--	--	--	--	0.88
III	270	--	--	--	--	0.83
IV	364	--	--	--	--	0.66
Average	284	--	--	--	--	0.84
Garanhus						
I	296	4,215	499	433	--	1.15
II	273	3,698	495	531	--	1.20
III	218	6,568	507	420	--	0.76
IV	158	--	370	352	--	0.33
Average	258	4,444	483	432	--	0.87
Sapé						
I	--	4,982	--	--	33.1	1.54
II	--	5,766	--	--	29.8	1.57
III	--	4,621	--	--	28.9	0.84
IV	--	4,443	--	--	35.5	0.60
Average	--	5,123	--	--	31.2	1.19

Source: Michael Sund, "Land Tenure and Economic Performance of Agricultural Establishments in Northeast Brazil," unpublished Ph.D. dissertation, University of Wisconsin, Department of Agricultural Economics, 1962, pp. 148, 153-163.

^aThe four sizes refer to the CIDA classification by labor requirements. Farms are grouped as sub-family, family, multi-family medium, and multi-family large. Size increases moving from I to IV.

^bSugar cane yields are in tons per hectare.

^cPasture utilization is in terms of animal units per hectare.

Mexico

Data analyzed by Dovring show almost equal yields for seven crops on three classes of farms in Mexico, and equal value of crops per hectare on arable land, as shown in Tables 13 and 14. The ejido plots are not classified by size but Dovring states that they average 27 hectares, with about seven hectares of cropland per member.

Other data from a minifundio area of Mexico show a higher production per hectare on the smaller farms, as shown in Table 15. Tenure did not account for this difference, as the smallest farmers owned 100 percent of the land worked, the middle group owned an average of 27 percent, and the largest farmers owned 49 percent. The two groups of small farms were much closer in their per hectare production than the two groups with substantial land sharecropped.

Table 13

Yield per Hectare (of Area Harvested of Each Crop) of Selected Crops, 1960, in Kilograms per Hectare

Categories of Farms	Size of Farms			
	Over 5 Hectares	5 Hectares and Under	Ejidos	Average
Corn	839	846	842	841
Cotton	1,378	1,473	1,380	1,379
Coffee	1,588	1,348	1,375	1,497
Wheat	1,522	1,137	1,066	1,341
Beans	559	830	554	565
Sugar Cane	44,879	48,271	48,630	46,848
Henequén*	44.6	---	45.0	44.7
Bananas	6,554	6,367	6,739	6,604

* Fiber plant.

Source: Folke Dovring, Land Reform and Productivity: The Mexican Case, Department of Agricultural Economics, Agricultural Experiment Station, University of Illinois (November 1966), p. 9.

Table 14
Value of Gross Crops Output on Arable Land,
1960 Pesos per Hectare

Categories of Farms	Value of Crops
Over 5 hectares	490
5 hectares and under	507
Ejidos	483
Average	488

Source: Dovring, op. cit., p. 7.

Table 15
Value of Farm Production by Tenure Groups,
Paracho, Michoacan, 1966

Farm Groups	Farm Area (Hectares)	Total Production (Pesos)	Production per Hectare (Pesos)
Large Farmer	10.9	9,411	863
Small Owner Sharecropper	3.3	4,623	1,401
Small Full Owner	2.4	3,462	1,443

Source: Sergio Maturana Medina, Paracho: The Economics of Development in a Mexican Smallholder Community, Madison, Wisconsin, University of Wisconsin, Thesis, July 1968, pp. 99, 104.

Bolivia

Evidence from a study by Carlos Camacho in Bolivia (Table 16) indicates that within the size range studied, production per land unit was quite similar in all of the four sizes of farms. The only product which showed a definite differential trend was the number of cheeses per cow, which was inversely related to size of farm.

Table 16

Farm Size and Gross Production per Land Unit
in Ucureña, Bolivia

Product	Arroba ^a			
	2.0-2.99	3.0-4.99	5.0-5.99	Over 5.99
Corn (100#)	7.46	6.65	4.72	5.53
Potatoes with manure (100#)	7.42	8.97	5.67	9.70
Potatoes without manure (100#)	7.54	8.31	5.52	11.39
Wheat (100#)	4.77	4.00	4.36	3.85
Dairy (cheeses per cow)	4.13	4.04	3.75	3.65

Source: Carlos Camacho Saa, "Minifundia Productivity and Land Reform in Cochabamba," Land Tenure Center Research Paper No. 21 (Madison, Wisconsin: The University of Wisconsin, December, 1966), p. 46.

^aOne arroba: 0.89 acres.

Uruguay

Information shown in Table 17 indicates that returns to scale for four crops were either constant or negative in Uruguay. For wheat, sunflowers and flax yields decreased as size increased. Corn yields were highest for the 100-200 hectare size group. The yields for farms over 1,000 hectares were somewhat below those under 50 hectares.

Table 17
Yield Expressed in Kilograms/Hectare Within Different
Farm Size Strata, Uruguay, 1961

Farm Size (Hectares)	Wheat	Corn	Sunflower	Flax
1- 50	861	772	489	604
50- 100	837	826	482	579
100- 200	815	841	449	542
200- 500	816	804	380	553
500-1,000	800	820	375	510
1,000-2,500	764	723	362	496
Over 2,500	733	649	300	549
Average	807	787	405	543

Source: Carlos Rucks, "Relationship Between Crop Production and Farm Size in Uruguay," December 14, 1967, Paper for Economics 474 (1961 census data).

Chile

Evidence from Chile (Table 18) shows a slight tendency for gross production to be higher on the larger farms than on the smaller farms. However, a statistical test showed no significance between any pairs of means at the .05 level. The variability within each group was greater than the variability between any of the groups. Dorner and Morales also point out that larger farms used more capital per hectare, a considerably higher percentage of the larger farms received credit, and a much larger percentage of the smaller farms reported irrigation problems. It was suggested that these factors affected the relationship between gross income per hectare and size of farm. In addition, the type of farming was controlled, whereas smaller farms generally grow crops with higher per hectare values and which require more labor.

Table 18

**Gross Income per Hectare of Irrigated Land
by Size of Farm, Chile,
1958-59**

Size Class (Has.)	No. Farms	Gross Income per Hectare (q)
10- 19.9	11	140
20- 49.9	31	151
50- 99.9	15	165
100-199.9	17	190
200-500	22	178

Source: Peter Dorner and Hector Morales Jara, "Present and Potential Productivity as Related to Farm Size on a Sample of Farms in Chile" (Madison, Wisconsin: Land Tenure Center, 1964), p. 12.

Colombia

Evidence from a peasant community in a minifundia region of the Colombian highlands indicates that the value of production per hectare is highest on the smallest farms. As shown in Table 19, for three of the four tenure groups the gross value of all production per hectare was highest for the smallest farms and lowest for the largest farms with the other two groups intermediate. In the landlord group, the data were somewhat erratic, with an extremely high value of production per hectare for the over-10 hectare farms as compared with the 3-10 hectare size. The average for all four tenure groups was nearly \$500 for the less than one hectare group, \$300 for the 1-3 hectare group and near \$200 for the other two groups. The percentage of land cultivated was inversely related to size for all tenure groups.

Table 19

Gross Value of Production per Hectare in U.S. Dollars by Tenure and Farm Size
Fómeque, Colombia, 1966

Size of Farm	Nonowners ^a		Part Owners		Owner-Operators		Landlords ^b		Total	
	No.	Prod.	No.	Prod.	No.	Prod.	No.	Prod.	No.	Prod.
< 1 hectare	13	615.69	5	249.80	11	419.18	1	1,117.00	30	499.37
1 to 2.99	23	305.09	24	283.08	20	280.60	6	363.50	73	295.95
3 to 9.99	14	253.00	30	212.93	15	190.20	16	154.25	75	203.35
10 has. and over	4	94.50	3	132.00	3	113.00	15	215.47	25	173.80
Total	54	350.76	62	239.15	49	273.78	38	236.79	203	276.75

Source: Emil Haney, "The Economic Reorganization of Minifundia in a Highland Community of Colombia," Madison, Wisconsin, Land Tenure Center, thesis in progress.

^aNonowners are sharecroppers, service tenants and cost renters.

^bLandlords were included within the sampling area. The land contiguous to their homes owned by them was rented to others, though they may have farmed land themselves in another location.

Guatemala

The evidence previously presented in Table 9, showing that in Guatemala production per hectare of cultivated land was highest on the medium multi-family farm, is contradicted by other evidence. The study summarized in Table 20 indicated that value of production per hectare of nine major products is much lower on the larger farms than on the smaller farms. When calculated in terms of area utilized, the products produced on the largest farms were valued at one-half of those on the smallest farms. Of course, not all products were considered here and the inclusion of cotton and beef might change the results in favor of the larger units.

Table 20

Production of Nine^a Selected Crops by Size of Farms:
Guatemala, 1950

Size of Farms	Value of Production per Hectare in Farms	Value per Hectare Utilized
Microfincas	\$ 115.77	\$ 121.99
Subfamiliar	55.71	70.16
Familiar	27.34	54.68
Multifamiliar medium	31.63	64.29
Multifamiliar large	14.24	49.96

Source: Comité Interamericano de Desarrollo Agrícola, Tenencia de la Tierra y Desarrollo Socio-Económico del Sector Agrícola, Guatemala (Washington, D.C.: Pan American Union, 1965).

^aProducts are corn, beans, rice, wheat, vegetables, milk and milk products, sugar cane, coffee, and bananas.

A study by Maturana in Guatemala showed almost equal value of production per hectare for the extremely large and the smallest farms, and lower value for the middle size farms, as shown in Table 21. A further analysis of the smallest farms indicated that the ladinos interviewed worked an average of 1.7 hectares and the Indians 1.1 hectares. Total value of agricultural production averaged \$140.60 per hectare for the ladinos and \$176 for the Indians. Net income per hectare, including the value of family labor, averaged \$76.78 for the ladinos and \$144.24

for the Indians, indicating that even within these two groups of very small farms, production was highest for the smallest farms.

Table 21

Value of Production per Hectare by Size of Farm,
Guatemala

Size of Farm	Value of Production per Hectare
1-10 manzanas	\$176.13
10-100	105.45
1,000 and over	166.35

Source: Sergio Maturana, "Encuesta Socio-económica en Zonas Agrícolas Seleccionadas de los Países Centro-americanos: Resultados y Análisis" (Costa Rica; Instituto Centroamericano de Investigaciones Sociales y Económicas, mimeografiado, 1964).

Data from a study in Guatemala not yet completed indicate that the average value of output from crops and livestock per hectare of total farm land was highest for the very small farms, dropping from \$2,840 on farms of less than one-half hectare to \$217 on farms of 10-20 hectares and \$35 on the one farm of over 50 hectares, as shown in Table 22. It is probable that the large farms had less cultivable land than the smaller farms. This was very evident in the case of a farm of over 900 hectares, of which 5% was cultivable and the remainder was forest or unproductive mountainous pasture.

Since these data do not take into account the varying proportions of cultivated land among the size groups, the value of output per hectare of cultivated land is shown in Table 23. In this table the farms are classified by the size of the cultivated area and the value of production per hectare is calculated only on the basis of the land planted to crops. As the sample was quite heterogeneous, the value of the fixed capital costs and variable capital costs were

Table 22

Average Value of Gross Output per Hectare from Crops
and Livestock by Farm Size, Guatemala, 1967

Farm Size (Ha.)	No. Cases	Value of Gross Output per Hectare of Total Farm Land
0- 0.49	9	\$ 2,842.73
0.5- 0.99	14	948.03
1.0- 1.99	16	483.08
2.0- 4.99	32	308.56
5.0- 9.99	18	489.85
10.0-19.99	17	217.49
20.0-49.99	10	256.13
50 and over	1	35.07

Source: Lester Schmid, "The Transformation of Guatemalan Agriculture," Study in progress. Madison, Wisconsin, Land Tenure Center, 1967-69.

Table 23

Gross Value of Production of Crops per Hectare, Fixed
Capital Costs, Variable Capital Costs, and Value
of Production per Hectare Net of Capital Costs:
Guatemala, 1967

Culti- vated Area	No. Cases	Value Prod./ Cultivated Ha.	Fixed Capital Costs ^a	Variable Capital Costs	Value Prod./ Cultivated Ha. Net of Capital Costs
0-0.49 Ha.	14	\$ 2,355.57	2.92	386.76	\$ 1,965.89
0.5-0.99	12	847.39	1.07	58.83	789.63
1.0-1.99	18	451.80	0.25	53.36	398.19
2.0-4.99	30	429.96	2.79	55.87	371.30
5.0-9.99	19	538.49	16.36	80.83	441.30
10-20	13	613.55	18.30	72.73	522.52

Source: Lester Schmid, "The Transformation of Guatemalan Agriculture," Study in progress. Madison, Wisconsin, Land Tenure Center, 1967-69.

^aCalculated at 8% of the investments in tractors, trucks, farm equipment and tobacco kilns in excess of \$100 per farm.

subtracted from gross value of production.⁴ Both fixed and variable capital costs per hectare were somewhat lower for the intermediate size classes. The high use of fertilizer, insecticides and fungicides by the smallest and largest farmers accounts for the large differences in variable capital costs. The exclusion of these costs reduced somewhat the differences in the value of production among the size groups but did not alter their ranking.

One of the reasons for the large differences in the value of production per hectare is the kind of crops grown. While nearly all of the farmers grew some corn, the smaller farmers planted a higher proportion of their land to vegetables, potatoes, pineapples, fruit and flowers. The higher value production of the 5-20 hectare group is due to several cases in which large inputs of fertilizer, insecticides and seeds were used in the production of tomatoes and tobacco. Technical assistance was also furnished to these large farmers by both the tobacco company and the tomato producers' cooperative, whereas almost none of the small farmers received any technical assistance.

The value of production per hectare shown in Table 23 compares favorably with that for coffee production on large farms. The average value of production per hectare of coffee for all farms registered with the coffee association in Guatemala in 1964-65 (a figure which is dominated by the production of the large farms) was \$300 per hectare, calculating the value of coffee at \$25.50, which is the price received for the processed coffee. (The small coffee growers included in the previous analysis sold at a lower price.) The value of production per hectare in the small to medium farms shown in Table 23 also compares favorably with cotton production, which was valued at \$430 per hectare in 1965-66, and sugar cane (which averages about 60 ton per hectare on the large farms) worth about \$400 per hectare at the farm.⁵ The large cotton and sugar farms operate with large amounts of imported machinery,

⁴The exclusion of these costs is theoretically important, since they represent for the most part imported inputs, the consumption of which does not create much secondary income within the country. An exception is the large amounts of organic materials purchased by the smallest farmers.

⁵These figures are from material gathered for the Schmid thesis.

fertilizer and, especially in the case of cotton, airplanes for the application of insecticides. These costs should be subtracted from the gross productivity figures for comparisons with the small farms which use a somewhat lower amount of either fixed or variable capital inputs per hectare, except for the vegetable and flower farmers, who use great quantities of organic matter brought down from the forests or chicken manure produced on poultry farms near the capital city.

Further evidence from Guatemala indicates that the size of farm or the size of cultivated area may affect production differently for different crops. Piedra Santa presented data from the 1950 census showing that the yield of coffee per manzana was far greater on the smallest farms than on the largest farms, as shown in Table 24.

Table 24

Yields of Coffee per Manzana^a by Size of Farm,
Guatemala, 1950

Size of Farm	Yield in cwt. of Coffee en cereza ^b
2- 4.9 manzanas	72.6
5- 9.9	46.1
10- 31.9	41.1
32- 63.9	39.6
64- 639.9	33.8
640- 1,279	32.7
1,280- 3,199	36.2
3,200- 6,399	34.4
6,400-12,799	37.5
12,800 and more	20.9

Source: Rafael Piedra Santa, "La mala distribución de la tierra como un obstáculo para la industrialización de Guatemala," Guatemala Indígena (Guatemala: Seminario de Integración Social Guatemalteca, Vol. 1, No. 3, Julio-Dic. 1961.)

^aOne manzana equals approximately 0.7 hectare.

^bCoffee as it is picked.

Evidence shown in Table 25 indicates that for corn, beans, rice and tomatoes, production per hectare is higher on the smallest farms than on the somewhat larger farms. For corn and tomatoes the yields shown are highest on the largest farms, as they are for wheat up to 10 caballerías (451 hectares) and for potatoes. It is probable, however, that most of the large farms which produce these crops, especially corn, are located in the south coastal area where soils are more fertile than in the highlands where most of the small plots are located.

In general, the evidence presented indicates that small farms obtain a somewhat higher value of product per unit of land than large farms. Almost invariably more labor per unit of land is used on the small farms. This evidence suggests that a redistribution of land into smaller farm units would at least not reduce and indeed might increase production, and would provide more rural employment.

Evidence of Changes in Production from Land Reform Efforts

To this point we have presented production data for farms of varying size for a particular point in time (usually a particular crop year). It is, of course, possible that creating many new small farms by dividing present large ones could reduce output over-time. That is, maybe new landowners of small farms would not be as capable in managing their farms as existing owners and renters of small farms who have had many years of experience. However, there is some evidence contradicting this supposition, from countries where land reforms have taken place some years ago, examples of which are presented below. Again one cannot be certain that sub-division was the major causal factor in the resulting productivity in later years since many other changes (e.g., increased services by the state) may have accompanied the reform.

United Arab Republic

In the United Arab Republic, 736,307 feddans (1 feddan equals 0.42 hectares) were redistributed to 303,624 families comprising 1.5 million persons. The small holdings were grouped into cooperatives and the land is farmed semi-cooperatively. This is said by Nasharty to have resulted in yields of cotton, wheat, corn, rice and sugar cane higher than before the agrarian reform, as

Table 25

Yields of Various Crops per Manzana by Size of Farm, Guatemala, 1964

Size of Farm ^a	Corn	Frijol	Arroz	Papa	Wheat	Tomato
Less than 1 manzana	15.03	18.58	36.06	55.48	11.79	92.33
1 - 1.99	12.65	10.22	28.20	58.03	11.08	65.84
2 - 4.99	11.77	9.84	23.25	58.52	11.38	72.36
5 - 9.99	11.65	9.49	22.80	57.19	11.31	78.33
10 - 31.9	8.22	9.52	22.85	59.04	12.44	93.22
32 - 63.9	13.10	10.56	21.68	75.80	14.86	124.15
64 - 645.7	15.10	9.92	22.62	91.17	16.17	100.96
645.8 - 1,291.1	20.18	11.05	31.83	110.05	10.43	126.94
1,291.2 - 3,229.0	21.04	13.22	28.21	75.6	--	130.47
3,229.1 - 6,457	18.22	8.27	10.34	--	--	--
6,457 - 12,910	16.75	8.00	17.10	--	--	--
12,911 or more	32.00	--	--	--	--	--

Source: 1964 agricultural census of Guatemala.

^aOne manzana: 0.7 hectare. Farm sizes over 64 manzanas are reported in the Census in another unit--caballerías. These have been converted into manzanas, accounting for the odd class intervals in the larger farm classes.

shown in Table 26. The increases in corn yields are especially significant--they have doubled in the El Manshia region and tripled in the Demera region from 1952 to 1964. While yields of cotton and rice had increased little from 1954-1964, they did remain considerably above the 1952 figures. The increases in income caused by the higher production and the reduction of rents was said to have greatly increased demand for nonfarm products.

Taiwan

Evidence from Taiwan indicates that in 1965 farms of under one-half hectare produced farm receipts per unit of land about double that of farms of over 2 hectares, as shown in Table 27. Each succeeding larger farm size had somewhat smaller total receipts per land unit.

Christensen says that after the land reform in Taiwan agricultural output per farm was nearly equal to that before the reform. However, since the size of the farms was reduced to one-half of pre-reform size, production per hectare had doubled. Table 28 demonstrates that as farm sizes decreased from 1940 to 1945 there was a large decrease in both per farm and per hectare output. However, by 1950 output per farm had increased in spite of a further decrease in farm size while per hectare output had doubled in the 10 year period. By 1965 production per farm was nearly as high as the previous peak in 1935 and per hectare it was nearly four times that in 1912. As shown in Table 27, production per hectare on the smallest farms was double that on the largest farms in 1965. Christensen also points out that in 1945-48 sugar cane yields were higher on family farms than on the Taiwan Sugar Corporation farms. By 1949-55 the Taiwan Sugar Corporation had concentrated on improving production on its own farms and yields were higher than on the family farms. By 1956-60 T.S.C. had provided extension and other services to family farms and yields were again higher on family farms than on the corporation farms.

Table 26

Case Study of Average Yields per Feddan of Three Cooperatives,
United Arab Republic

Cooperative	Unit	Average Yield/Feddan Before 1952	Average Yield After Agrarian Reform					
			1954	1956	1958	1960	1962	1964
El Manshia								
Cotton	Kintar	3,500	4,133	3,680	4,779	6,046	6,887	7,186
Wheat	Erdab	4,100	4,333	5,750	4,801	5,703	8,000	6,300
Corn	Erdab	4,750	4,750	6,660	6,960	8,908	8,990	10,600
Demera								
Cotton	Kintar	3,500	5,050	4,080	5,430	3,310	5,500	5,435
Rice	Dariba	1,750	2,750	3,000	3,000	2,750	3,250	3,227
Corn	Erdab	4,500	6,500	7,000	8,500	10,500	11,000	15,000
El Mataana								
Sugar Cane	Ton	37	45.5	52.0	57.5	51.3	51.2	52.0
Kintar:	157 1/2 Kgs.							
Erdab:	150 Kgs.							
Dariba:	954 Kgs.							

Source: A. H. E. Nasharty, Agrarian Reform in the United Arab Republic, Rome, Italy, World Land Reform Conference, United Nations, FAO, June 20-July 2, 1966.

Table 27

Farm Receipts per Chia by Size of Farm, Taiwan, 1965

Size of Farm (Chia)	Farm Receipts per Chia (Thousands NT\$)
Under 0.51	72
0.52 - 1.03	57
1.04 - 1.54	48
1.55 - 2.06	43
Over 2.07	36
All Farms	46

One chia = 2.397 acres or 0.9699 hectare.

Source: Raymond Christensen, Taiwan's Agricultural Development: Its Relevance for Developing Countries Today, U.S.D.A., Foreign Agricultural Economic Report No. 39, p. 41.

Table 28

Cultivated Land per Farm, Agricultural Output per Farm and per Hectare, Taiwan, Selected Years 1912-65

Year	Cultivated Land per Farm	Agricultural Output	
		Per Farm	Per Hectare
1912	1.72 hectares	100%	100%
1917	1.74	129	128
1922	1.95	149	131
1923	1.97	175	153
1930	1.97	195	170
1935	1.98	233	203
1940	2.00	216	186
1945	1.63	97	102
1950	1.37	162	204
1955	1.19	172	248
1960	1.11	198	308
1965	1.05	231	378

Source: Christensen, *op. cit.*, p. 40.

Yugoslavia

Land reform efforts in Yugoslavia distributed 791,753 hectares to 330,250 beneficiaries (one-sixth of rural households), land expropriated from large private estates, properties of banks, German owners, and others, in 1945-48, according to a paper presented at the World Land Reform Conference. This land was allocated in farms of two to six hectares. Yields, which were stagnant from 1909 to 1956, increased after the land reform as shown in Table 29. The authors of this paper quote FAO, and attest that from 1956 to 1966 agricultural production per capita increased over 3 percent annually in only three of 24 developed countries, these countries being Yugoslavia, Greece and Israel.

Table 29

Average Yields in Yugoslavia, 1909-64

Crop	Average Yield in Quintals per Hectare						
	1909- 13	1926- 30	1936- 40	1947- 51	1952- 56	1957- 61	1962- 64
Wheat	10.4	11.4	11.9	12.0	10.6	16.2	17.8
Corn	14.8	13.6	17.5	16.2	12.8	21.4	24.1
Sugar beets	223	160	199	150	152	253	284
Potato	75	52	64	69	76	102	90

Source: V. Stipetic and B. Milosavljevic, "Agrarian Reform and Economic Development," World Land Reform Conference, FAO, June 20-July 2, Rome, Italy, 1966.

Japan

Oweis⁶ states, "It is interesting to observe that Japan, with relatively small farms, has a record of long-sustained progress in increasing agricultural output, while Argentina has made little progress during the last two decades within a framework of relatively large farms."

⁶ Oweis, op. cit., p. 42.

Mexico

Dovring⁷ states, "The ejidos doubled their production from 1940 to 1960 while their labor force rose much less and their use of capital and other externally generated factors of production remained at low level." He also indicates that the expenditures for external inputs was 635 million pesos for private farms over 12.5 acres and 251 million pesos for ejidos, which account for slightly less total area. Since the private farms also received more of the benefits of public expenditures, Dovring concludes that the "ejido production is cheaper, in a social account opportunity cost, than large scale private farm production."⁸

Summary

The evidence presented above indicates that value of production per hectare does not vary greatly by farm size when the same crops are considered. Since there is some tendency for the smallest farmers to grow labor-intensive high-value crops, this would seem to indicate that the smallest farms may be able to produce more per hectare. Small farmers also tend to plant two or more crops per year on the same land and to cultivate a larger proportion of the land in their farms. It appears likely that coffee, vegetables, flowers and like crops which require a considerable amount of attention can be produced more efficiently on small farms as far as value of production per hectare is concerned. There may be higher yields for certain crops and under certain conditions where tractors are used on the larger farms.

Concerning the changes in production which have taken place after land reform, there appears to be little direct evidence. The evidence that is available indicates that the redistribution of land has not reduced production but has rather increased it. At least, increases have come about following land reform, though it is uncertain whether they have been the result of redistribution of land or of concomitant measures taken to increase the use of fertilizers and other inputs. In conclusion, redistribution of land need not result in decreased production and may

⁷Dovring, op. cit., p. 13.

⁸Ibid., p. 16.

result in increased production if measures are taken at the same time to provide services to small farmers which the large farmers may be able to provide for themselves, or which were previously available only to the large farmers.